
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-K

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED JUNE 30, 2004**

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

**FOR THE TRANSITION PERIOD FROM TO
COMMISSION FILE NUMBER 0-12944**

ZYGO CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

06-0864500
(IRS Employer
Identification Number)

Laurel Brook Road, Middlefield, Connecticut
(Address of principal executive offices)

06455-1291
(Zip Code)

Registrant's telephone number, including area code: (860) 347-8506

Securities registered pursuant to Section 12(b) of the Act:

None

Securities registered pursuant to Section 12(g) of the Act:

Common Stock, \$.10 Par Value

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the registrant's Common Stock held by non-affiliates, based upon the closing price of the Common Stock on December 26, 2003, as reported by the Nasdaq National Market, was approximately \$181,480,000. Shares of Common Stock held by each executive officer and director and by each person who owns 5% or more of the outstanding Common Stock, based on filings with the Securities and Exchange Commission, have been excluded since such persons may be deemed affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

Indicate the number of shares outstanding of each of the registrant's classes of Common Stock, as of the latest practicable date.

17,890,928 Shares of Common Stock, \$.10 Par Value, at August 31, 2004

Documents Incorporated by Reference:

Specified portions of the registrant's Proxy Statement related to the registrant's 2004 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A of the Securities Exchange Act of 1934 with the Securities and Exchange Commission, are incorporated by reference into Part II (Item 5) and Part III (Items 10-14) of this Annual Report on Form 10-K to the extent stated herein.

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As used in this Annual Report on Form 10-K, unless the context otherwise requires, the terms "we," "us," "our," "Company", and "ZYGO" refer to Zygo Corporation, a Delaware corporation.

FORWARD-LOOKING STATEMENTS

All statements other than statements of historical fact included in this Annual Report regarding our financial position, business strategy, plans, anticipated growth rates, and objectives of management for future operations are forward-looking statements. These forward looking statements include without limitation statements under “Business,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and “Risk Factors.” Forward-looking statements are intended to provide management’s current expectations or plans for the future operating and financial performance based upon information currently available and assumptions currently believed to be valid. Forward-looking statements can be identified by the use of words such as “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plans,” “strategy,” “project,” and other words of similar meaning in connection with a discussion of future operating or financial performance. Actual results could differ materially from those contemplated by the forward-looking statements as a result of certain factors such as those disclosed under “Risk Factors.” Such statements reflect our current views with respect to future events and are subject to these and other risks, uncertainties, and assumptions relating to the operations, results of operations, and our growth strategy.

Any forward looking statements included in this Annual Report speak only as of the date of this document. ZYGO undertakes no obligation to publicly update or revise forward-looking statements to reflect events or circumstances occurring after the date of this 10-K.

PART I

Item 1. *Business*

Overview

Zygo Corporation (“ZYGO,” “we,” “us,” “our,” or “Company”) is a leading designer, developer, and manufacturer of optical components and instruments for optics-intensive industries. Our products fall into two categories, metrology and custom optics, each serving the semiconductor and industrial markets. We have achieved our leadership position over more than 30 years through the use of our deep knowledge of optical science and technology, and expertise in the field of on-line manufacturing process control to provide innovative and valuable solutions to our customers. We conduct the majority of our manufacturing and research and development activities in our 135,500 square foot facility in Middlefield, Connecticut.

Our metrology products are sophisticated optical measurement instruments generally based on the techniques of optical interferometry. We are one of the largest and most experienced manufacturers of optical interferometers for optical surface and figure measurements and of optical surface profilers for nano-technology applications. ZYGO is also a leader in displacement interferometry, and our integrated measurement products, based on this technology, are used extensively in ultra-precise wafer positioning systems (especially for ultraviolet and deep ultraviolet optical lithography steppers) required in the semiconductor industry. These products help enable semiconductor chip and flat panel display manufacturers to achieve high yields and throughput in their manufacturing process.

Our custom optic products consist of high precision optical components, optical coatings, and optical assemblies. We are a leader in the manufacture of plano-optics that are used in applications such as laser fusion research, semiconductor manufacturing equipment, and aerospace optical systems. We also design and manufacture optical systems and assemblies under contracts to customers predominantly in the defense, aerospace, and semiconductor industries at our facilities in Arizona and Southern California. This service-oriented part of our business leverages our excellent reputation and strong brand, along with our extensive knowledge of optical metrology and manufacturing techniques.

In May 2000, we acquired Firefly Technologies, Inc., renamed Zygo TeraOptix, which developed optical components and modules for the telecommunications market. We exited this telecommunications segment of our business in September 2002.

We were incorporated in 1970 under the laws of the State of Delaware. The address of our principal executive offices is Laurel Brook Road, Middlefield, Connecticut, 06455-1291. Our telephone number at that address is (860) 347-8506. Our website address is www.zygo.com. The information on our website is not part of this Form 10-K.

Industry Background and Solutions

Precision Manufacturing Industry

Manufacturers in the semiconductor and industrial markets continue to redesign their processes in order to compete more effectively in an increasingly competitive marketplace. These changes are necessitated, among other things, by:

- decreasing product dimensions;
- increasing complexity of manufacturing processes;
- shortening product life cycles;
- declining product prices; and
- intensifying global competition.

Precision metrology is an enabling technology for the semiconductor and industrial markets. The pressures on manufacturers to improve productivity and quality have fueled demand for

precision noncontact optical metrology, and required integration of high precision metrology into the manufacturing process in order to increase yields and quality control. Increasing demands on performance have required manufacturers in a variety of industries to produce smaller products with more precise tolerances and increased complexity of design geometries. Our products address the component and measurement challenges these manufacturers face. We believe that our on-line process control and yield improvement metrology solutions are an enabling factor for manufacturers of precision components, to increase yield and precision to greater tolerances.

History of Innovation and Commercialization

Throughout our history, we have met our customers' requirements through innovation. Since we introduced the first optical interferometer in 1972, we have been issued approximately 160 United States patents, of which approximately 130 are currently active, and approximately 80 foreign patents, of which approximately 75 are active. In addition we have approximately 100 United States and approximately 90 foreign patent applications pending. Our intellectual property has been the foundation and driver of our yield enhancement solutions over the last 30 years.

We have received numerous achievement awards, including:

- R&D Magazine 100 Award in 2003, for the VeriFire™ MST, Multi Surface Metrology;
- R&D Magazine 100 Award in 2002 for the Simetra™, 3D Relational Metrology System and R&D 100 Awards in 1978, 1982, 1988 (three awards), 1994, 1996, 1997 and 1998;
- Laser Focus World Commercial Technology Award in 2001;
- Photonics Spectra Circle of Excellence Awards in 1988, 1994, 1996, 1997, 1998 and 2001;
- American Machinist Excellence in Manufacturing Technology Achievement Award for Technology & Reliability in 2000;
- 1998 R&D Magazine 100 and Photonics Spectra Circle of Excellence Award for MESA™ Interferometric System; and
- 1997 R&D Magazine 100 and Photonics Spectra Circle of Excellence Award for ZMI 2001™ Displacement Measuring Interferometer.

Integrated Core Competencies

Metrology and Automation: Yield Enhancement Solutions

Our expertise in the area of optical instrumentation, our commitment to basic research, and our unique ability to rapidly develop and deploy sophisticated automation systems around our instruments enables us to meet the emerging needs of our customers, and to quickly enter new markets as they develop. For example, this combination of strengths has recently enabled us to establish new instrument product lines in the automation-intensive flat panel display market and advanced chip packaging industries. We also regularly sell a wide range of standard and semi-custom interferometer products to our customers in other optical metrology-intensive industries.

Optical Components and Assemblies

We combine our expertise in optical component manufacturing, optical system design and manufacturing, and optical metrology to produce to our customers' specifications, products of high quality and workmanship at a reasonable cost, for an excellent overall value. We also manufacture optics for use in our own systems.

PRODUCTS AND APPLICATIONS

We manufacture, design, and market yield enhancement solutions that utilize optical metrology and automation for high performance manufacturers. We also manufacture macro-optical components, such as optical flats, spheres, waveplates, mirrors, and optical assemblies for the semiconductor and industrial markets.

Our products are based on our two core competencies:

- Metrology—including OEM, process control, and on-line automated metrology for yield enhancement; and
- Optics—sold as components and assemblies.

Metrology

We offer a broad range of interferometry-based and imaging products. An interferometer analyzes the pattern of bright and dark fringes that result from the optical interference between a reference and a measurement beam. Our interferometers incorporate sophisticated subsystems including precision optical components, stable and long-life laser or other light sources, piece part positioning stages, and PC workstations. Our metrology products include the following:

OEM

Displacement Measuring Interferometers. Our displacement measuring interferometer family of laser interferometer systems provides measurements that control some of the world's most sophisticated machinery in the semiconductor, flat panel display production, and optical component manufacturing industries. These products are used to measure the position of a tool relative to a part under fabrication through the use of a directed laser beam reflected from the moving portion of a machine. Most of these systems are sold on an OEM basis into the semiconductor photolithography market.

Process Control

Interferometric Microscopes. Our interferometric microscopes combine advanced techniques of interferometry, microscopy, and precision analysis algorithms in an automated package. These instruments make high precision surface analysis possible and are important because they provide surface structure analysis. These microscopes use scanning white light interferometry to measure non-specular surfaces and build ultra-high z-axis resolution images. Our patented Frequency Domain Analysis system and powerful workstations and personal computers then combine for next-generation three-dimensional surface structure analysis.

Small Aperture Wavefront Interferometer. Our small aperture wavefront interferometer is a compact interferometer that is designed for ease of use, especially for applications that involve repetitive testing of similar components. It has the ability to quickly and automatically characterize microlenses as small as 20 microns to three millimeters in diameter. Its integrated motion control and down facing orientation make it ideal for testing lens arrays and picking and testing discrete lenses, molded aspherics, miniature mirrors, and filters.

Large Aperture Wavefront Interferometer. Our large aperture wavefront interferometer is used for large surface metrology. Our interferometers are used extensively in the optics industry to measure glass or plastic optical components such as flats, lenses, and prisms. In addition, they are used to measure other precision components such as bearings, sealing surfaces, polished ceramics, and contact lens molds.

Geometrically Desensitized Interferometer. Our geometrically desensitized interferometer product is a patented interferometer that utilizes diffraction gratings to measure surfaces that have roughness and departures approximately 20 times greater than those surfaces presently measurable with existing interferometer technology. It is able to measure rougher, non-specular surfaces, such as those used in precision-machined parts applications, without sacrificing advantages of other

interferometers, such as the ability to utilize high-speed non-contact interferometry and to produce a full-field wide aperture view.

Digital Video Disk Interferometer. The digital video disk interferometer measures spherical and aspherical lenses for next-generation DVD players.

Automated Metrology

Our automation products include the following:

APEX™ Series. The APEX system measures patterned features and films on the surfaces of diced and undiced chips in advanced chip packaging fabrication facilities. It incorporates a specialized optical profiler and wafer positioning system with pattern recognition software, and can be configured for cleanroom or laboratory use.

FPD Series. This fully automated inspection system incorporates our NewView™ microscope with a robotic material handling system. The system accepts an individual flat panel display from a carrier, loads it to the microscope's inspection stage, performs an automated inspection routine, and returns the flat panel display to the original input location. A single graphical user interface provides the operator with input to both the handling and inspection systems.

Macro-Optics and Assemblies

We manufacture and supply high precision optical components and modules to customers, as well as for use in our own instruments. Our macro-optics products include:

Optical Coatings. Reflective films are designed to minimize loss of optical energy upon reflection from the coated surface. Anti-reflective films minimize the loss of energy upon transmission through the coated surface. These coatings are produced by vacuum deposition of thin dielectric films in sophisticated coating chambers. Reflective and anti-reflective coatings are essential for achieving low insertion losses through components and assemblies. Polarization coatings are applied to prisms and other plano optical components to separate or combine laser beams of orthogonal polarization.

Lenses and Lens Systems. Lenses are transmissive optical components with spherical or aspherical surfaces. They are used individually or in combination as lens systems to form and transfer images. We produce lenses and assemblies for use in a wide variety of applications, ranging from spectrum analyzers for optical telecom systems to semiconductor lithography. Such lenses are produced using advanced computer numeric control manufacturing and metrology equipment. We assemble lens systems in clean-room conditions using laser-based alignment and centering equipment.

Reference Flat Mirrors. Our super-smooth flat mirrors serve as reference surfaces when used in conjunction with displacement measurement interferometers. These reference mirrors must be made of special materials to be insensitive to temperature variation and non-uniformity. We produce a large quantity and variety of reference flat mirrors used in semiconductor manufacturing and metrology equipment. The flatness and smoothness of these mirrors are essential for precise location of semiconductor wafers and exposure masks during production and testing of integrated circuits.

Stage Mirrors. Our stage mirrors are lightweight structures, which serve as both a mechanical support for a wafer or reticle and two orthogonal reference flat mirror surfaces. Stage mirrors are used in high performance lithography and metrology systems employing laser, electron-beam, or x-ray exposure sources. They are made of low-expansion materials to reduce sensitivity to thermal variations, and are machined to produce a lightweight, but stiff mechanical structure with excellent dimensional stability. Two adjacent sides of the stage are finished using proprietary technology to serve as reference flat mirrors. The combined optical and structural properties of such stage mirrors are critical for achieving higher wafer throughput in advanced lithography and metrology tools. We supply stage mirrors to a number of manufacturers of semiconductor lithography and metrology equipment.

Laser Optics. Laser optics are mirrors, polarizers, and solid-state laser amplifiers used in high energy laser systems. Such components are used in laser fusion research and nuclear weapons simulation. Such optical components must be finished to the highest quality in terms of surface flatness, smoothness, and surface cosmetics. Even the smallest defects can lead to catastrophic failure in use. We are a leader in producing large plano laser optics, having supplied such components to major laser fusion laboratories for nearly two decades. We are under contract with the University of California Lawrence Livermore National Laboratory to produce mirrors, polarizers, and amplifier slabs for the National Ignition Facility, also known as NIF. The NIF, scheduled for completion in 2007, is expected to be the largest laser system ever built.

Prisms, Rhomboids, and Beamsplitters. Our high-precision plano optical components are manufactured and supplied to our external customers for use in a variety of modules and assemblies. In addition, they are also used internally as part of our metrology and automation solutions. They are used individually or in combination with one another to direct, steer, combine, divide, and separate laser beams. These products are often coated with special optical films to meet the highly demanding requirements for low insertion loss and cross-channel isolation.

CUSTOMERS AND MARKETS

The growing requirements for dimensional control to the sub-nanometer level have created an escalating need for our yield enhancement instruments and systems among both OEMs and end-users of microfabrication technology. We have been able to meet these demands with on-line yield improvement instruments and systems, as well as with our off-line quality control instruments. Today, our installed base of high precision metrology systems exceeds 12,500 systems.

Several of our customers purchase multiple product family types and multiple technology platforms and employ our solutions at their facilities worldwide. The following is a sampling of our customers in fiscal 2004:

Selected Customers by End Market

<u>Semiconductor</u>	<u>Industrial</u>
AU Optronics	AWE
Canon	Bosch
Electro Scientific	Chengdu
KLA-Tencor	Lawrence Livermore National Laboratory
Nikon	Lockheed Martin
Samsung	Northrop Grumman
Zeiss	Raytheon

During fiscal 2004, 2003, and 2002, aggregate sales to Canon Inc. and its affiliate Canon Sales Co., Inc. amounted to 49%, 51%, and 22%, respectively, of our net sales. No other single customer accounted for more than 10% of our sales in any of the fiscal years 2004, 2003, and 2002.

Patents and Other Intellectual Property

Our success and ability to compete depend substantially upon our technology. We have been developing a portfolio of intellectual property for over 30 years. We rely on a combination of patent, copyright, trademark, and trade secret laws, and license agreements to establish and protect our proprietary rights in our products.

Since we introduced the first optical interferometer in 1972, we have had approximately 160 United States patents issued, of which approximately 130 are currently active, and approximately 80 foreign patents issued, of which approximately 75 are active, and we have approximately 100

United States and approximately 90 foreign patent applications pending. In addition, we have a number of registered and unregistered trademarks.

While we rely on patent, copyright, trademark, and trade secret laws to protect our technology, we also believe that factors such as the technological and creative skills of our personnel, new product developments, frequent product enhancements, and reliable product maintenance are essential to establishing and maintaining a technology leadership position.

Research and Development and Engineering Operations

We operate in industries that are subject to rapid technological change and engineering innovation. We dedicate substantial resources to research and development. At June 30, 2004, we employed 118 individuals or approximately 24% of our workforce within our research and development and engineering operations. Our strategy is to form close technical working relationships with customers and OEM suppliers in our markets to ensure that our products have relevancy when commercialized. In connection with our research and development operations, we also maintain a close working relationship with various research groups and academic institutions in the United States as well as abroad. We believe that continued enhancement, development, and commercialization of new and existing products and systems are essential to maintaining and improving our leadership position.

Competition

The industries in which we participate are intensely competitive and are characterized by price pressure and rapid technological change. Furthermore, these markets are dominated by a few market leaders.

We are one of a limited number of companies that develop and market yield enhancement solutions. Our primary yield enhancement competitors in the semiconductor and industrial markets include Agilent's Laser Interferometer Positioning Systems Division, ADE's Phase Shift Technology, Leica's Mask Metrology Division, and Veeco's Metrology Division.

The principal factors upon which we compete are:

- performance and flexibility of solutions;
- value;
- on-time delivery;
- responsive customer service and support; and
- breadth of product line.

BACKLOG

Backlog at June 30, 2004 was \$54.8 million, an increase of \$17.6 million, or 47%, as compared with \$37.2 million at June 30, 2003. The year-end fiscal 2004 backlog consisted of \$33.1 million, or 60%, in the semiconductor segment and \$21.7 million, or 40%, in the industrial segment. Orders for the fiscal year ended June 30, 2004 totaled \$134.2 million and consisted of \$79.6 million, or 59%, in the semiconductor segment and \$54.6 million, or 41%, in the industrial segment.

MARKETING AND SALES

Our sales and marketing strategy is to establish and/or solidify strategic relationships with leading OEMs and end-users in targeted sectors within our markets. The selling process for our products is performed through our worldwide sales organization operating out of seven regional sales offices in California, Connecticut, Germany, Japan, Singapore, Taiwan, and China. Supporting this core sales team are business development, marketing, service, and engineering specialists representing our various optics and metrology units in Connecticut, Arizona, California, and Florida. Product promotion is done through trade shows, printed and e-business advertising, and industry technical organizations.

The following table sets forth the percentage of our total sales by region (including sales delivered through distributors) during the past three years:

	<u>Fiscal Year Ended June 30,</u>		
	<u>2004</u>	<u>2003</u>	<u>2002</u>
Americas (primarily United States)	29%	30%	47%
Far East:			
Japan	53%	53%	27%
Pacific Rim	<u>11%</u>	<u>7%</u>	<u>10%</u>
Total Far East	64%	60%	37%
Europe and other (primarily Europe)	<u>7%</u>	<u>10%</u>	<u>16%</u>
Total	<u>100%</u>	<u>100%</u>	<u>100%</u>

Customer service is an essential part of our business since product up time is critical given its effect on our customers' production efficiency. As of June 30, 2004, our global sales customer support and service organization consisted of over 70 people skilled in sales, marketing, optical and electro component repair, software, application and system integration, diagnostics, and problem-solving capabilities.

MANUFACTURING, RAW MATERIALS, AND SOURCES OF SUPPLY

Our principal manufacturing activities are conducted at our facilities in Middlefield, Connecticut and Tucson, Arizona.

We maintain an advanced optical components manufacturing facility in Middlefield, Connecticut, specializing in the fabrication, polishing, and coating of plano, or flat, optics for sales to third parties, as well as the manufacturing of a wide variety of optics that are used in our metrology products. Our manufacturing activities for our metrology products consist primarily of assembling and testing components and sub-assemblies supplied by us and third-party vendors, and then integrating these components and sub-assemblies into our finished products.

Our optical assembly manufacturing activities are conducted in our Tucson, Arizona, facility. We integrate ZYGO optics, optics from third party vendors, and mechanical sub-systems utilizing ZYGO metrology in this facility.

Certain components and sub-assemblies incorporated into our systems are obtained from a single source or a limited group of suppliers. We routinely monitor single or limited source supply parts, and we endeavor to ensure that adequate inventory is available to maintain manufacturing schedules should the supply of any part be interrupted. Although we seek to reduce our dependence on sole or limited source suppliers, we have not qualified a second source for some of these products and the partial or complete loss of certain of these sources could have a negative impact on our results of operations and damage customer relationships.

AVAILABLE INFORMATION

We make available free of charge through our website, www.zygo.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with the Securities and Exchange Commission (“SEC”). These reports may also be obtained without charge by contacting Investor Relations, Zygo Corporation, Corporate Headquarters, Laurel Brook Road, Middlefield, Connecticut 06455-1291, phone: 1-860-347-8506. Our Internet website and the information contained therein or incorporated therein are not intended to be incorporated into this Annual Report on Form 10-K. In addition, the public may read and copy any materials we file with the SEC’s Public Reference Room at 450 Fifth Street, NW., Washington, DC 20549 or may obtain information by calling the SEC at 1-800-SEC-0330. Moreover, the SEC maintains an Internet site that contains reports, proxy, and information statements, or other information regarding reports that we file electronically with them at <http://www.sec.gov>.

EMPLOYEES

At June 30, 2004, we employed 476 people of whom 227 were in manufacturing, 118 were in research and development, 71 were in sales and marketing, and 60 were in management and administration. Our employees are not represented by a labor union or a collective bargaining agreement. We regard our employee relations as good.

EXECUTIVE OFFICERS OF THE REGISTRANT

J. Bruce Robinson—age 62—Chairman, President, and Chief Executive Officer

Mr. Robinson has served as our Chairman, President, and Chief Executive Officer since November 2000, as President and Chief Executive Officer from November 1999 to November 2000, and as President from February 1999 to November 1999. Previously, he spent 25 years with The Foxboro Company, where his most recent positions were President Worldwide Operations from 1996 to 1998 and President of European Operations from 1990 to 1996.

Mr. Robinson has served as an executive officer of ZYGO since February 1999 and is also a director of ZYGO.

Walter A. Shephard—age 50—Vice President, Finance, Chief Financial Officer, and Treasurer

Mr. Shephard has served as Vice President Finance, Chief Financial Officer, and Treasurer since February 2004. Previously, he was a Principal with the Loftus Group, LLC, a management consulting firm, from November 2002 to January 2004. From 1983 to 2001, Mr. Shephard served in various capacities with GenRad, Inc., including Vice President Finance and Chief Financial Officer, Vice President of Investor Relations and Treasurer.

Mr. Shephard has served as an executive officer of ZYGO since February 2004.

William H. Bacon—age 54—Vice President, Corporate Quality and Support Services

Mr. Bacon has served as Vice President, Corporate Quality and Support Services since March 2003. Previously, he served as our Vice President, Manufacturing from April 2002 to March 2003, Vice President, Metrology Manufacturing from April 2000 to April 2002, and Vice President, Corporate Quality from January 1996 to April 2000. From November 1993 to January 1996, Mr. Bacon was Director of Total Quality and also served as Manager of Instrument Manufacturing from June 1987 to November 1993.

Mr. Bacon has served as an executive officer of ZYGO since January 1996.

Douglas J. Eccleston—age 55—Vice President, Motion Measurement

Mr. Eccleston has served as Vice President, Motion Measurement since March 2003. Previously, from 1977 to 2002, he held various management positions with Corning Incorporated, including most recently as a Business General Manager for the Photonic Technologies division.

Mr. Eccleston has served as an executive officer of ZYGO since July 2004.

Brian J. Monti—age 48—Vice President, Worldwide Sales and Marketing

Mr. Monti has served as Vice President, Worldwide Sales and Marketing since July 1999. Previously, he served as Vice President, Sales, Service and Marketing for Radiometric Corporation from 1998 to 1999. From 1984 to 1998, Mr. Monti held various positions for Honeywell Measurix including Vice President, Sales, Service and Marketing.

Mr. Monti has served as an executive officer of ZYGO since July 1999.

David J. Person—age 56—Vice President, Human Resources

Mr. Person has served as Vice President, Human Resources since September 1998. Previously, he served in a number of senior human resource management positions with Digital Equipment Corporation from 1972 to September 1998.

Mr. Person has served as an executive officer of ZYGO since September 1998.

Robert A. Smythe—age 52—Vice President, Marketing

Mr. Smythe has served as Vice President, Marketing since April 2002. Previously, he served as our Vice President, Engineering from June 1998 to April 2002; Vice President, Sales and Marketing, from January 1996 to June 1998; Director of Sales and Marketing from June 1993 to January 1996; and Manager, Industry from April 1992 to June 1993.

Mr. Smythe has served as an executive officer of ZYGO since January 1996.

Robert J. Stoner—age 41—Vice President, Metrology and Optical Systems

Dr. Stoner joined ZYGO as Vice President of Business Development in 2002, and has served as Vice President of Metrology and Optical Systems since 2003. From 2000 to 2002, Dr. Stoner was President of Vinestone Corporation, a software company, and from 1995 to 2000 he was President of Cooper Mountain Corporation, a technology consulting firm.

Dr. Stoner has served as an executive officer of ZYGO since July 2004.

Carl A. Zanoni—age 63—Senior Vice President, Technology

Dr. Zanoni has served as Senior Vice President, Technology since November 2001. Previously, he served as our Vice President, Technology from June 1998 to November 2001, and Vice President, Research, Development and Engineering from April 1992 to June 1998.

Dr. Zanoni is a co-founder of our company and has served as an executive officer of ZYGO since its inception in 1970. He is also a director of ZYGO.

Under the By-laws, executive officers serve for a term of one year and until their successors are chosen and qualified unless earlier removed.

Item 2. Properties

Our principal manufacturing facility and corporate headquarters is located on Laurel Brook Road in Middlefield, Connecticut. The Middlefield facility consists of one 135,500-square-foot building on approximately 13 acres. We are presently constructing an additional 18,000 square foot addition to this facility. In August 2004, we entered into an agreement to sell our Westborough, Massachusetts, facility. The sale is expected to be completed in the fall 2004.

<u>Operation/Location</u>	<u>Square Footage</u>		<u>Owned/Leased Expiration Date</u>
	<u>Manufacturing</u>	<u>Total</u>	
Corporate Headquarters, Eastern Regional Sales Office, and Instrument and Optics Manufacturing Middlefield, Connecticut	80,000	135,500	Owned
R&D Center Delray Beach, Florida	0	9,900	Leased—06/30/05
Zygo—Laser Technology (R&D) Watsonville, California	0	1,452	Leased—02/25/05
Zygo—Opto-Mechanical Assembly Tucson, Arizona	14,560	22,560	Leased—08/31/06
Zygo Applied Optics Costa Mesa, California	0	13,714	Leased—06/30/05
Western Regional Sales Office and R&D Center Sunnyvale, California	0	7,400	Leased—10/31/08
R&D Center Simi Valley, California	0	6,290	Leased—12/14/05
Zygo PTE Ltd—Sales Office Singapore	0	1,550	Leased—12/27/04
Zygo Taiwan—Sales Office Taiwan	0	3,500	Leased—07/31/04
ZygoLOT Germany	0	1,296	Leased—10/01/04
Zygo KK Japan	0	1,775	Leased—10/31/04
Zygo China China	0	1,610	Leased—08/15/05
Properties Unoccupied or Leased to Others			
Westborough, Massachusetts	0	120,500	Owned
Plymouth, Massachusetts	0	6,600	Leased—05/31/06
Longmont, Colorado	0	50,110	Leased—05/31/06
Total	<u>94,560</u>	<u>383,757</u>	

Item 3. Legal Proceedings

From time to time, we are subject to certain legal proceedings and claims that arise in the normal course of our business. In the opinion of management, we are not party to any litigation that we believe could have a material effect on our business.

Item 4. Submission of Matters to a Vote of Security Holders

None.

PART II

Item 5. Market for the Registrant's Common Equity and Related Stockholder Matters

Our shares of common stock are traded over-the-counter and are quoted on the NASDAQ/National Market under the symbol "ZIGO." Market price data for fiscal 2004 and 2003 is as follows:

	Fiscal Year Ended June 30, 2004		Fiscal Year Ended June 30, 2003	
	High	Low	High	Low
First quarter.....	\$15.10	\$ 7.74	\$8.09	\$4.13
Second quarter	\$21.53	\$13.36	\$9.35	\$3.55
Third quarter	\$21.23	\$13.22	\$8.20	\$4.79
Fourth quarter	\$16.70	\$ 9.30	\$8.40	\$5.65

These over-the-counter market quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission, and may not necessarily represent actual transactions.

The number of record holders of our common stock at June 30, 2004 was 480. Our closing stock price as of August 31, 2004 was \$9.97.

We have never declared or paid a cash dividend on our capital stock. We currently intend to retain all our earnings to finance the expansion and development of our business and, therefore, do not anticipate paying any cash dividends in the foreseeable future.

Information required with respect to "Securities Authorized for Issuance Under Equity Compensation Plans" will be included under the caption "Equity Compensation Plan Information" in the proxy statement to be filed pursuant to Regulation 14A for use in connection with our company's 2004 Annual Meeting of Stockholders (the "Proxy Statement") and is incorporated herein by reference.

Item 6. Selected Consolidated Financial Data

The financial data set forth below should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operation” and with our Consolidated Financial Statements and notes thereto included elsewhere in this Form 10-K.

	Fiscal Year Ended June 30,				
	2004	2003	2002(1)	2001(1)	2000(1)
(Thousands, except for per share and ratio amounts)					
Net sales	\$ 116,642	\$ 102,577	\$ 80,268	\$ 129,508	\$ 83,099
Gross profit	\$ 43,065	\$ 35,445	\$ 27,463	\$ 61,361	\$ 30,670
% of sales	37%	35%	34%	47%	37%
Earnings (loss) from continuing operations	\$ 4,248	\$ 1,575	(\$ 4,279)	\$ 13,901	(\$ 4,294)
% of sales	4%	2%	(5%)	11%	(5%)
Earnings (loss) per share from continuing operations					
Basic	\$ 0.24	\$ 0.09	(\$ 0.24)	\$ 0.90	(\$ 0.34)
Diluted	\$ 0.23	\$ 0.09	(\$ 0.24)	\$ 0.86	(\$ 0.34)
Net (loss) earnings	(\$ 3,407)	(\$ 10,570)	(\$ 11,733)	\$ 10,659	(\$ 16,047)
Net (loss) earnings per share:					
Basic	(\$ 0.19)	(\$ 0.60)	(\$ 0.67)	\$ 0.69	(\$ 1.28)
Diluted	(\$ 0.19)	(\$ 0.60)	(\$ 0.67)	\$ 0.66	(\$ 1.28)
Weighted average number of shares:					
Basic	17,802	17,539	17,414	15,398	12,511
Diluted	18,221	17,696	17,414	16,063	12,511
Research and development	\$ 13,011	\$ 12,659	\$ 17,696	\$ 13,518	\$ 10,723
Capital expenditures	\$ 7,585	\$ 5,037	\$ 11,381	\$ 13,902	\$ 5,828
Depreciation and amortization	\$ 5,717	\$ 5,623	\$ 6,098	\$ 3,760	\$ 11,233
	June 30,				
	2004	2003	2002(1)	2001(1)	2000(1)
Working capital	\$ 58,481	\$ 66,881	\$ 65,917	\$ 88,741	\$ 49,464
Current ratio	3.5	3.3	5.2	4.6	4.1
Total assets	\$ 155,452	\$ 161,068	\$ 169,201	\$ 186,832	\$ 95,162
Long-term debt (including current portion)	\$ 0	\$ 11,374	\$ 12,211	\$ 12,560	\$ 84
Stockholders’ equity	\$ 130,644	\$ 129,860	\$ 140,005	\$ 149,139	\$ 78,229
Price-earnings ratio	N/A	N/A	N/A	33.7	N/A
Number of employees at year end	476	477	537	648	486
Sales per employee—average	\$ 245	\$ 215	\$ 149	\$ 200	\$ 171
Book value per share	\$ 7.85	\$ 7.92	\$ 7.99	\$ 8.48	\$ 5.50
Market price per share at year-end	\$ 11.19	\$ 8.00	\$ 8.05	\$ 22.25	\$ 90.81

(1) The selected consolidated financial data for the periods ended June 30, 2002, 2001, and 2000 have been reclassified to conform with the fiscal 2004 and 2003 presentation of the discontinued operations and loss on disposal of our former TeraOptix unit.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation

CRITICAL ACCOUNTING POLICIES, SIGNIFICANT JUDGMENTS, AND ESTIMATES

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, and expenses, and related disclosures at the date of our consolidated financial statements. On an on-going basis, management evaluates its estimates and judgments, including those related to bad debts, inventories, warranty obligations, self insured healthcare claims, income taxes, and long-lived assets. Management bases its estimates and judgments on historical experience and current market conditions and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We consider certain accounting policies related to revenue recognition and allowance for doubtful accounts, inventory valuation, warranty costs, self-insured health insurance costs, accounting for incomes taxes, and valuation of long-lived assets to be critical policies due to the estimates and judgments involved in each.

Revenue Recognition and Allowance for Doubtful Accounts

We recognize revenue based on guidance provided in SEC Staff Accounting Bulletin ("SAB") No. 104, "Revenue Recognition." We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, our price is fixed or determinable, and collectibility is reasonably assured.

We maintain an allowance for doubtful accounts based on a continuous review of customer accounts, payment patterns, and specific collection issues. We perform on-going credit evaluations of our customers and do not require collateral from our customers. For many of our international customers, we require an irrevocable letter of credit to be issued by the customer before a shipment is made. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances would be required.

Inventory Valuation

Inventories are valued at the lower of cost or market, cost being determined on a first-in, first-out basis. Management evaluates the need to record adjustments for impairment of inventory on a monthly basis. Our policy is to assess the valuation of all inventories, including raw materials, work-in-process, and finished goods. Obsolete inventory or inventory in excess of management's estimated future usage is written down to its estimated market value, if less than its cost. Contracts with fixed prices are evaluated to determine if estimated total costs will exceed revenues. A loss provision is recorded when the judgment is made that actual costs incurred plus estimated costs remaining to be incurred will exceed total revenues from the contract. Inherent in the estimates of market value are management's estimates related to current economic trends, future demand for our products, and technological obsolescence. Significant management judgments must be made when providing for obsolete and excess inventory and losses on contracts. If actual market conditions are different than those projected by management, additional inventory write-downs and loss accruals may be required.

Warranty Costs

We provide for the estimated cost of product warranties at the time revenue is recognized. We consider historical warranty costs actually incurred and specifically identified circumstances to establish the warranty liability. The warranty liability is reviewed on a quarterly basis. Should actual costs differ from management's estimates, revisions to the estimated warranty liability would be required. A one percent change in actual costs would have an impact of approximately \$20,000 on our financial condition and results of operations.

Accounting for Income Taxes

Deferred income tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective income tax bases, and operating loss and tax credit carryforwards. Statement of Financial Accounting Standards (“SFAS”) No. 109, “Accounting for Income Taxes,” requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. We record a valuation allowance to reduce our deferred tax assets to an estimated realizable amount based on historical and forecasted results. While management has considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance, in the event management were to determine that it would be able to realize its deferred tax assets in the future in excess of its net recorded amount, an adjustment to the valuation allowance would decrease income tax expense in the period such determination was made. Likewise, should management determine that it would not be able to realize all or part of its net deferred tax asset in the future, an adjustment to the valuation allowance would be charged to income tax expense in the period such determination was made. Our effective tax rate may vary from period to period based on changes in estimated taxable income or loss, changes to the valuation allowance, changes to federal, state or foreign tax laws, and deductibility of certain costs and expenses by jurisdiction.

Valuation of Long-Lived Assets

In accordance with SFAS No. 144, “Accounting for the Impairment or Disposal of Long-Lived Assets,” the carrying value of intangible assets and other long-lived assets is reviewed on a regular basis for the existence of facts or circumstances, both internally and externally, that may suggest impairment. Some factors we consider important, which could trigger the impairment review, include a significant decrease in the market value of an asset, a significant change in the extent or manner in which an asset is used, a significant adverse change in the business climate that could affect the value of an asset, an accumulation of costs for an asset in excess of the amount originally expected, a current period operating or cash flow loss combined with a history of operating or cash flow losses or a projection that demonstrates continuing losses, and a current expectation that, more likely than not, a long-lived asset will be disposed of significantly before the end of its estimated useful life.

If such circumstances exist, we evaluate the carrying value of long-lived assets to determine if impairment exists based upon estimated undiscounted future cash flows over the remaining useful life of the assets and comparing that value to the carrying value of the assets. If the carrying value of the assets is greater than the estimated future cash flows, the assets are written down to the estimated fair value. We determine the estimated fair value of the assets based on a current market value of the assets. If a current market value is not readily available, a projected discounted cash flow method is applied using a discount rate determined by management to be commensurate with the risk inherent in the current business model. Our cash flow estimates contain management’s best estimates, using appropriate and customary assumptions and projections at the time.

Health Insurance

Beginning in January 2004, we became self insured for the majority of our group health insurance. We rely on claims experience in determining an adequate liability for claims incurred, but not reported. To the extent actual claims exceed estimates; we may be required to record additional expense. A one percent change in actual claims would have an impact of approximately \$25,000 on our financial condition and results of operations.

RESULTS OF OPERATIONS

Zygo Corporation is a worldwide supplier of optical metrology instruments, precision optics, and electro-optical design and manufacturing services, serving customers in the semiconductor capital equipment and industrial markets. Optical instruments products encompass non-contact optical measurement instruments. Optics products consist of high performance macro-optics components, optical coatings, and optical system assemblies. We conduct the majority of our manufacturing in our 135,500 square foot facility in Middlefield, Connecticut. We are currently constructing an 18,000 square foot addition to our Middlefield, Connecticut, facility to increase our overall manufacturing space.

We also perform several development services, which have produced a significant amount of our revenue over the past two years. In September 2002, we entered into a development services agreement with Canon Inc. In March 2004, we signed a preliminary agreement to begin further add-on work, with a definitive agreement anticipated to be signed in the fall of this year. We have generated a total of approximately \$36.3 million in revenues from these agreements, including \$16.1 million in fiscal 2004. Delivery under this first development services agreement is expected to occur in our second fiscal quarter of fiscal 2005. We recognized \$3.1 million in revenue through June 30, 2004 under the preliminary agreement to provide add-on work. Significant revenues are expected from any such follow-on contract. Our period over period comparable sales would be significantly adversely affected if we do not continue to provide these development services.

Our backlog at June 30, 2004 was \$54.8 million, an increase of \$5.8 million from March 26, 2004 and our highest level since fiscal 2001. Orders were \$42.1 million in the fourth quarter as we experienced an increase across most of our product lines and regions. Bookings in the first quarter of our fiscal year tend to be lower than the fourth quarter of the previous year and we expect the first quarter of fiscal 2005 to continue that trend. In addition, revenues under the preliminary agreement noted above are ramping up slower than expected and will not generate as much revenue in the first quarter as initially expected.

An area of revenue growth expected in fiscal 2005 is in our optics business. Two years ago we opened a facility in Tucson, Arizona, that provides contract optical-mechanical manufacturing, utilizing lean manufacturing technology. Last year we launched our Costa Mesa, California operation, that supplies electro-optical system design and prototyping. Together, these operations enable us to deliver integrated optical solutions, from design to delivery, primarily to the defense and aerospace markets.

We also plan to enhance the technologies and capabilities we have developed through government-funded projects and re-apply them in commercial applications. For three decades, we have been a major supplier of optics and optical-mechanical assemblies to NIF. While there is no certainty that we will be successful in generating orders from these developed capabilities, we believe there is a market that we have not yet fully explored. Over the next year, we also expect to develop improved manufacturing technologies and pilot plant equipment required for fabricating thin-fused silica optics for NIF.

In late fiscal 2004, we introduced a new product family of small aperture wavefront interferometers (PTI 250) that is being marketed to manufacturers of small optical components. While revenues from the PTI 250 are not expected to have a material impact on our results from operations in fiscal 2005, this new product family will help to broaden our market coverage and, if successful, strengthen our market position.

In July 2004, we also opened a representative office in mainland China, where investment in semiconductor and optical fabrication facilities continues to grow. Through this office, we will offer our products to the optical industry and to manufacturers of flat panel displays. This is a long-term strategy that will have a minimal impact on our results of operations in the immediate future.

We discontinued our telecommunications TeraOptix business unit during fiscal 2003. Accordingly, the results of TeraOptix have been presented as a separate line item on the Consolidated Statements of Operations as discontinued TeraOptix operations, net of tax, for all periods presented. In addition, the charges on the disposal of TeraOptix, net of tax, have been

recorded as a separate line item for all periods presented. All continuing operations line items presented exclude TeraOptix results. During fiscal 2003 and 2004, we marketed for sale our former telecommunications facility located in Westborough, Massachusetts. In fiscal 2004, we recorded impairment charges on the facility of \$6.4 million, net of tax, to reflect changes in the fair value of the property. At June 30, 2004, the value of the facility, net of estimated selling expenses, is \$2.0 million. In August 2004, we reached an agreement to sell the facility. The sales transaction is expected to be completed in the fall of 2004 and to generate approximately \$2.0 million of cash, net of selling expenses.

Fiscal 2004 Compared with Fiscal 2003

Net sales of \$116.6 million for fiscal 2004 increased by \$14.0 million, or 14%, from the comparable prior year period sales of \$102.6 million. Net sales for fiscal 2004 included \$16.1 million from development services agreements, as compared with \$18.8 million in the prior fiscal year. The first developmental services agreement is expected to be substantially completed in the second quarter of fiscal 2005 with minimal finishing work through the third quarter. Therefore, we expect to have diminishing revenues under this agreement in the first three quarters of fiscal 2005. We have signed an additional agreement letter that has allowed us to begin a new development project with the expectation that a follow-on contract will be signed by the fall of this year. For fiscal 2004, net sales in the semiconductor segment were \$67.1 million, or 58% of total net sales, as compared with \$59.3 million, or 58%, in the prior year period and net sales in the industrial segment were \$49.5 million, or 42% of total net sales, as compared with \$43.3 million, or 42%, in the prior year period. The increase in net sales in the semiconductor segment was primarily due to general increases in the number of products sold across most product categories. The sales of flat panel systems also contributed to the increase. The industrial sector showed strong sales, particularly large aperture metrology shipments to the defense and aerospace sectors.

Sales to the Americas, primarily the United States, amounted to \$33.9 million in fiscal 2004, an increase of \$2.8 million, or 9%, from fiscal 2003 levels of \$31.1 million. Sales to Japan during fiscal 2004 amounted to \$61.1 million, an increase of \$6.4 million, or 12%, from fiscal 2003 sales levels, primarily due to an increase in orders from Canon, Inc. Sales to Europe/Other, primarily Europe, amounted to \$8.4 million, a decrease of \$1.9 million, or 18%, from fiscal 2003. Sales to the Pacific Rim, excluding Japan, amounted to \$13.2 million, an increase of \$6.7 million, or 103%, from 2003 sales levels, primarily due to an increase in flat panel and large aperture sales.

Approximately 89% of all fiscal 2004 sales were in U.S. dollars. Significant changes in the values of foreign currencies relative to the value of the U.S. dollar can impact the sales of our products in export markets, as would changes in the general economic conditions in those markets. The impact of changes in foreign currency values on our sales cannot be measured. Management believes the percentage of sales in foreign currencies may increase in the coming year due to an increase in sales denominated in yen to Japanese customers.

Gross profit for fiscal 2004 totaled \$43.1 million, an increase of \$7.7 million, or 22%, from \$35.4 million in the prior fiscal year. Gross profit as a percentage of sales for fiscal 2004 and 2003 was 37% and 35%, respectively. Gross profit for fiscal 2004 included \$3.5 million from the development services agreements, as compared with \$3.8 million for fiscal 2003. The increased margin was primarily due to product mix with increases in sales on higher margin products and a decrease in the development services revenue, which carry a lower margin as a percentage of total revenues.

Selling, general, and administrative expenses ("SG&A") in fiscal 2004 amounted to \$24.3 million, an increase of \$3.9 million, or 19%, from fiscal 2003. SG&A as a percentage of net sales in fiscal 2004 was 21%, as compared with 20% in fiscal 2003. The increase in SG&A for fiscal 2004 is primarily related to increases in various personnel costs including incentive programs, and external commissions.

Research and development expenses (“R&D”) in fiscal 2004 amounted to \$13.0 million, an increase of \$0.3 million, or 2%, from \$12.7 million in the comparable prior year period. R&D as a percentage of net sales in fiscal 2004 was 11%, as compared with 12% in fiscal 2003. R&D costs in 2004 included a full year of our applied optics group, partially offset by decreases associated with production starts in flat panel and optics.

Our operating profit in fiscal 2004 was \$5.5 million, as compared with an operating profit of \$2.0 million in fiscal 2003. Operating profit as a percentage of sales in fiscal 2004 was 5%, as compared with the operating profit as a percentage of sales of 2% in fiscal 2003.

The income tax expense from continuing operations in fiscal 2004 totaled \$1.9 million, or 29% of pretax profits, which compares with an income tax expense of \$0.6 million, or 24% of pretax profits in fiscal 2003. The effective tax rates for fiscal 2004 and 2003 relate primarily to large R&D credits being applied to low pretax profits from continuing operations. The overall effective tax rate, including the tax effect of the discontinued operations, for fiscal years 2004 and 2003 was an income tax benefit of 42% and 38%, respectively.

We recorded a net loss of \$3.4 million for fiscal 2004 as compared with a net loss of \$10.6 million for fiscal 2003. On a diluted per share basis, the net loss was \$0.19 per share for fiscal 2004 as compared with a net loss of \$0.60 per share for fiscal 2003. The net loss for fiscal 2004 includes losses of \$1.3 million, net of tax, related to the operations of our discontinued TeraOptix unit and charges of \$6.4 million, net of tax, related to the disposal of our discontinued TeraOptix unit. The charge related to the disposal of our discontinued TeraOptix unit was primarily due to the downward adjustments in our second and fourth fiscal quarters of 2004 in the fair market value of our vacant facility in Westborough, Massachusetts. The fourth quarter charge represents our decision to market the property as general manufacturing space in contrast to marketing the property with clean room laboratory space. The net loss for fiscal 2003 includes losses of \$2.5 million related to the operations of our discontinued TeraOptix unit and charges of \$9.7 million related to the disposal of our discontinued TeraOptix unit. The earnings from continuing operations for fiscal 2004 was \$4.2 million, or \$0.23 per diluted share, as compared with earnings from continuing operations of \$1.6 million, or \$0.09 per diluted share, for fiscal 2003.

Backlog at June 30, 2004 totaled \$54.8 million, an increase of \$17.6 million, or 47%, from \$37.2 million at June 30, 2003. The year-end fiscal 2004 backlog consisted of \$33.1 million, or 60%, in the semiconductor segment and \$21.7 million, or 40%, in the industrial segment. Orders for fiscal 2004 totaled \$134.2 million. Orders by segment for fiscal 2004 consisted of \$79.6 million, or 59%, in the semiconductor segment and \$54.6 million, or 41%, in the industrial segment. The increase in the backlog is primarily related to an increase in both domestic and Japan region orders. Domestic orders were driven by large custom optics and optical assembly orders, as well as an increase in orders received by our applied optics group. Orders in Japan increased as we diversified our customer base in the region, coupled with an increase in product orders from Canon. We currently have \$7.7 million of flat panel system orders in backlog at June 30, 2004 as compared with \$2.7 million at June 30, 2003.

Fiscal 2003 Compared with Fiscal 2002

Net sales of \$102.6 million for fiscal 2003 increased by \$22.3 million, or 28%, from the comparable prior year period sales of \$80.3 million. Net sales for fiscal 2003 included \$18.8 million from a development services agreement, as compared to \$1.4 million in the prior fiscal year. For fiscal 2003, net sales in the semiconductor segment were \$59.3 million, or 58% of total net sales, as compared to \$37.5 million, or 47%, in the prior year period and net sales in the industrial segment were \$43.3 million, or 42% of total net sales, as compared to \$42.8 million, or 53%, in the prior year period. The increase in net sales in the semiconductor segment was primarily due to the sales from the development services agreement.

Sales to the Americas, primarily the United States, amounted to \$31.1 million in fiscal 2003, a decrease of \$6.8 million, or 18%, from fiscal 2002 levels of \$37.9 million. Sales outside the Americas amounted to \$71.5 million in fiscal 2003, an increase of \$29.1 million, or 69%, from fiscal

2002 levels of \$42.4 million. Sales to Japan during fiscal 2003 amounted to \$54.7 million, an increase of \$33.5 million, or 158%, from fiscal 2002 sales levels, primarily due to the development services agreement. Sales to Europe/Other, primarily Europe, amounted to \$10.3 million, a decrease of \$2.8 million, or 21%, from fiscal 2002. Sales to the Pacific Rim, excluding Japan, amounted to \$6.5 million, a decrease of \$1.6 million, or 20%, from 2002 sales levels.

Approximately 85% of all fiscal 2003 sales were in U.S. dollars. Significant changes in the values of foreign currencies relative to the value of the U.S. dollar can impact the sales of our products in export markets, as would changes in the general economic conditions in those markets. The impact of changes in foreign currency values on our sales cannot be measured.

Gross profit for fiscal 2003 totaled \$35.4 million, an increase of \$7.9 million, or 29%, from \$27.5 million in the prior fiscal year. Gross profit as a percentage of sales for fiscal 2003 and 2002 was 35% and 34%, respectively. Gross profit for fiscal 2003 included \$3.8 million from the development services agreement, as compared to \$0.3 million for fiscal 2002.

Selling, general, and administrative expenses (“SG&A”) in fiscal 2003 amounted to \$20.3 million, a decrease of \$1.6 million, or 7%, from fiscal 2002. SG&A as a percentage of net sales in fiscal 2003 was 20%, as compared to 27% in fiscal 2002. The decrease in SG&A for fiscal 2003 is primarily related to SG&A costs eliminated after the sale of the Automation Systems Group in December 2001 and a reduction in selling expenses, including commissions to outside sales representatives and personnel costs.

Research and development expenses (“R&D”) in fiscal 2003 totaled \$12.7 million, a decrease of \$5.0 million, or 28%, from \$17.7 million in the comparable prior year period. R&D as a percentage of net sales in fiscal 2003 was 12%, as compared to 22% in fiscal 2002. The decrease was primarily related to the completion of several large research and development projects in the semiconductor segment in fiscal 2002 and the transfer of engineering resources to revenue producing projects in fiscal 2003.

Our operating profit in fiscal 2003 was \$2.0 million, as compared to an operating loss of \$14.8 million in fiscal 2002. Operating profit as a percentage of sales in fiscal 2003 was 2%, as compared to the operating loss as a percentage of sales of 18% in fiscal 2002.

The income tax expense from continuing operations in fiscal 2003 totaled \$0.6 million, or 24% of pretax profits, which compares with an income tax benefit of \$3.7 million, or 49% of pretax losses in fiscal 2002. The effective tax rate for fiscal 2003 relates primarily to large R&D credits being applied to a low taxable income from continuing operations. The overall tax rate, including the tax effect on the discontinued operations, for fiscal years 2003 and 2002 was 38%.

We recorded a net loss of \$10.6 million for fiscal 2003 as compared to a net loss of \$11.7 million for fiscal 2002. On a diluted per share basis, the net loss was \$0.60 per share for fiscal 2003 as compared to a net loss of \$0.67 for fiscal 2002. The net loss for fiscal 2003 includes losses of \$2.5 million related to the operations of our discontinued TeraOptix unit and charges of \$9.7 million related to the disposal of our discontinued TeraOptix unit. The net loss for fiscal 2002 includes losses related to the operations of our discontinued TeraOptix unit of \$7.4 million. The net loss for fiscal 2002 also includes a gain on the sale of our Automation Systems Group of \$6.1 million before related exit costs of \$1.9 million, inventory write-downs of \$0.8 million, and tax expense of \$1.3 million. The income from continuing operations for fiscal 2003 was \$1.6 million, or \$0.09 per share, as compared to a net loss of \$4.3 million, or \$0.24 per share, for fiscal 2002.

Backlog at June 30, 2003 totaled \$37.2 million, a decrease of \$3.3 million, or 8%, from \$40.5 million at June 30, 2002. The year-end fiscal 2003 backlog consisted of \$20.6 million, or 55%, in the semiconductor segment and \$16.6 million, or 45%, in the industrial segment. Orders for fiscal 2003 totaled \$99.2 million. Orders related to the development services agreement totaled \$18.8 million in fiscal 2003. Orders by segment for fiscal 2003 consisted of \$57.9 million, or 58%, in the semiconductor segment and \$41.3 million, or 42%, in the industrial segment.

RELATED PARTY TRANSACTIONS

Sales to Canon Inc., a stockholder, and Canon Sales Co., Inc., a distributor of certain of our products in Japan and a subsidiary of Canon Inc., amounted to \$57.3 million (49% of net sales), \$52.8 million (51% of net sales), and \$17.6 million (22% of net sales), for the years ended June 30, 2004, 2003, and 2002, respectively. Selling prices of products sold to Canon Inc. and Canon Sales Co., Inc. are based, generally, on the normal terms customarily given to distributors. Revenues generated from a development contract with Canon are recorded on a cost-plus basis. At June 30, 2004 and 2003, there was approximately, in the aggregate, \$10.9 million and \$4.0 million, respectively, of trade accounts receivable from Canon.

In September 2002, we entered into a contract with Canon related to the development of certain interferometers. In March 2004 we signed a preliminary agreement to begin further add-on work, with a definitive agreement anticipated to be signed later in the fall. Since the inception of these developmental services, we have recognized revenue of \$36.3 million on both the original contract and subsequent add-on work, with \$16.1 million and \$18.8 million of revenue being recorded in fiscal 2004 and fiscal 2003, respectively.

LIQUIDITY AND CAPITAL RESOURCES

At June 30, 2004, working capital was \$58.5 million, a decrease of \$8.4 million from the \$66.9 million at June 30, 2003. We maintained cash, cash equivalents, and marketable securities at June 30, 2004 totaling \$34.4 million. This represents a decrease of \$18.5 million from June 30, 2003. The decrease was primarily due to the payoff of the Westborough facility mortgage (\$11.0 million), payment on the related interest rate swap (\$1.1 million), and an increase in receivables (\$13.4 million) and inventory (\$2.8 million) due to increased sales volume. The decrease was partially offset by an increase in accounts payable and accrued expenses (\$7.3 million).

We have recently announced that we entered into an agreement to sell our vacant Westborough, Massachusetts, facility. The sale transaction, anticipated to be completed in the fall of 2004, is expected to generate approximately \$2.0 million in cash, net of selling expenses.

There were no borrowings outstanding under our \$3.0 million bank line of credit at June 30, 2004.

Acquisitions of property, plant, and equipment were \$7.6 million for fiscal 2004 as compared with \$5.0 million for fiscal 2003, primarily reflecting new purchases of equipment for the Middlefield factory. We are currently constructing an 18,000 square foot addition to our Middlefield facility which is expected to cost approximately \$2.8 million.

Although cash requirements will fluctuate based on the timing and extent of various factors, management believes that cash generated from operations, together with the liquidity provided by existing cash balances and borrowing capability, will be sufficient to satisfy our liquidity requirements for the next 12 months.

CONTRACTUAL OBLIGATIONS

The following table summarizes our significant contractual obligations at June 30, 2004, and the effect such obligations are expected to have on our liquidity and cash flows in future periods.

	Payments Due By Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(Dollars in millions)				
Operating leases.....	\$ 2.6	\$1.6	\$1.0	\$—	\$—
Purchase obligations.....	10.5	3.0	7.5	—	—
Total.....	\$13.1	\$4.6	\$8.5	\$—	\$—

RISK FACTORS THAT MAY IMPACT FUTURE RESULTS

Industry Concentration and Cyclicity

Our business is significantly dependent on capital expenditures and component requirements for manufacturers in the semiconductor industry. This industry is cyclical and has historically experienced periods of oversupply, resulting in significantly reduced demand for capital equipment, including the products manufactured and marketed by us. For the foreseeable future, our operations will continue to be dependent on the capital expenditures in this industry which, in turn, is largely dependent on the market demand in the semiconductor markets.

Costs of Discontinued Operations

We have exited the telecommunications segment of our business and closed the TeraOptix facility in Westborough, Massachusetts. The mortgage note and related swap were paid off in December 2003 for \$11.0 million and \$1.1 million, respectively. The value of the facility is estimated at \$2.0 million, net of estimated selling expenses, based upon the purchase and sale agreement entered into in August 2004. Until the closing of the sale transaction, scheduled for the fall of 2004, we will continue to pay various carrying costs associated with the facility.

Customer Concentration; Relationship with Canon

During fiscal 2004, 2003, and 2002, sales to Canon Inc. and Canon Sales Co., Inc. (collectively, "Canon"), our largest customer in those periods, accounted for 49%, 51%, and 22% of our net sales, respectively. We expect that sales to Canon will continue to represent a significant percentage of our net sales for the foreseeable future. Canon is an original investor in our company, the owner at June 30, 2004 of approximately 7% of our outstanding shares of common stock, and is a distributor of certain of our products in the Japanese market. A reduction or delay in orders from this customer, including reductions or delays due to market, economic, or competitive conditions in the industries in which we serve, could have a material adverse effect upon our results of operations. Our customers, including Canon, generally do not enter into long-term agreements obligating them to purchase our products.

Revenues Derived From International Sales and Foreign Operations

We sell our products internationally, primarily to customers in Japan and throughout the Pacific Rim. Net sales to customers outside the Americas (primarily the United States) accounted for 71%, 70%, and 53% of our net sales in each of the fiscal years ended June 30, 2004, 2003, and 2002, respectively, and are expected to continue to account for a substantial percentage of our net sales.

International sales and foreign operations are subject to inherent risks, including the economic conditions in these various foreign countries and their trading partners, political instability, longer payment cycles, greater difficulty in accounts receivable collection, compliance with foreign laws, changes in regulatory requirements, tariffs or other barriers, difficulties in obtaining export licenses, staffing and managing foreign operations, exposure to currency exchange fluctuations, transportation delays, and potentially adverse tax consequences.

Our sales and costs are negotiated and paid primarily in U.S. dollars. However, changes in the values of foreign currencies relative to the value of the U.S. dollar can render our products comparatively more expensive to the extent locally produced alternative products are available. Such conditions could negatively impact international sales of our products and foreign operations, as would changes in the general economic conditions in those markets. For our sales which are based in local currency, we are exposed to foreign exchange fluctuations from the time customers are invoiced in local currency until collection occurs. For fiscal 2004, approximately 11% of our sales were in foreign currency. Management believes the percentage of sales in foreign currencies may increase in the coming year due to an increase in sales to Japanese customers denominated in yen. There can be no assurance that risks inherent in international sales and foreign operations will not have a material adverse effect on our results of operations in the future.

Risks Associated with Acquisitions

Our growth strategy includes expanding our products and services, and we may seek acquisitions to expand our business. We regularly review potential acquisitions of businesses, technologies, or products complementary to our business and periodically engage in discussions regarding such possible acquisitions. Acquisitions involve numerous risks, including some or all of the following: substantial cash expenditures and capital investments; potentially dilutive issuance of equity securities; incurrence of debt and contingent liabilities; amortization of certain intangible assets; difficulties in assimilating the operations and products of the acquired companies; diverting our management's attention away from other business concerns; risks of entering markets in which we have limited or no direct experience; the inability to manage the growth expected for various acquisitions; potential loss of key employees of the acquired companies in the process of integrating personnel with disparate business backgrounds; and combining different corporate cultures.

We cannot assure you that any acquisition will result in long-term benefits to us or that our management will be able to effectively manage the acquired businesses. We may also incorrectly judge the value or worth of an acquired company or business. We have recently disposed or divested ourselves of several companies or lines of business that were acquired by us in the past few years, at a significant net loss to us.

Quarterly Fluctuations

Our quarterly and annual operating results have varied in the past and may vary significantly in the future depending on factors such as: the effect of our acquisitions and consequent integration; budgeting cycles of our customers; the size, timing, and recognition of revenue from significant orders; increased competition; our ability to develop innovative products; the timing of new product releases by us or our competitors; market acceptance of our products; changes in our and our competitors' pricing policies; changes in operating expenses and personnel changes; changes in our business strategy; and general economic factors.

Due to these and other factors, we believe that quarter-to-quarter comparisons of our operating results may not be meaningful. You should not rely on our results for one quarter as any indication of our future performance. In future periods our operating results may be below the expectations of public market analysts or investors. If this occurs, the price of our common stock would likely decrease.

Current conditions in the domestic and global economies are extremely uncertain. As a result, it is difficult to estimate the level of growth for the economy as a whole or of capital expenditures in the semiconductor and industrial markets. Because all of the components of our budgeting and forecasting are dependent on estimates of spending within these markets, the prevailing economic uncertainty renders estimates of future revenue and expenses even more difficult than usual to make.

Possible Volatility of Stock Price

We believe that factors such as the announcement of new products or technologies by us or our competitors, market conditions in the semiconductor and industrial markets, and quarterly fluctuations in financial results are expected to cause the market price of our common stock to vary substantially. Further, our net sales or results of operations in future quarters may be below the expectations of public market securities analysts and investors. In such event, the price of the common stock would likely decline. In addition, historically the stock market has experienced price and volume fluctuations that have particularly affected the market prices for many high technology companies and which often have been unrelated to the operating performance of such companies. The market volatility may adversely affect the market price of shares of our common stock.

Competition

We face competition from a number of companies in all our markets, some of which have greater manufacturing and marketing capabilities, and greater financial, technological, and personnel resources. In addition, we compete with the internal development efforts of our current and prospective customers, some of which may attempt to become vertically integrated. Our

competitors can be expected to continue to improve the design and performance of their products and to introduce new products with competitive price/performance characteristics. Competitive pressures may necessitate price reductions, which can adversely affect results of operations. Although we believe that we have certain technical and other advantages over some of our competitors, maintaining such advantages will require a continued high level of investment by our company in research and development and sales, marketing, and service. There can be no assurance that we will have sufficient resources to continue to make such investments or that we will be able to make the technological advances necessary to maintain such competitive advantages. In addition, there can be no assurance that the bases of competition in the industries in which we compete will not shift.

Technological Change and New Product Development

The market for our products is characterized by rapidly changing technology. Our future success will continue to depend upon our ability to enhance our current products and to develop and introduce new products that keep pace with technological developments and evolving industry standards, respond to changes in customer requirements, and achieve market acceptance. The development of new technologically advanced products is a complex and uncertain process requiring high levels of innovation, as well as the accurate anticipation of technological and market trends.

We commit significant financial and personnel resources on a continuous basis to redesign and enhance our instruments, systems, and components and upgrade our proprietary software technology incorporated in our products. Any failure by us to anticipate or respond adequately to technological developments and customer requirements, or any significant delays in product development or introduction, could have a material adverse effect on our business and impact our close relationships with customers. This could have an impact on customers' willingness to share proprietary information about their requirements and participate in collaborative efforts with us. There can be no assurance that our customers will continue to provide us with timely access to such information, that we will be successful in developing and marketing new products and services or product and service enhancements on a timely basis, or respond effectively to technological changes or new product announcements by others. In addition, there can be no assurance the new products and services or product enhancements, if any, which we developed will achieve market acceptance.

Dependence on Proprietary Technology

Our success is heavily dependent upon our proprietary technology. There can be no assurance that the steps taken by us to protect our proprietary technology will be adequate to prevent misappropriation of our technology by third parties or will be adequate under the laws of some foreign countries, which may not protect our proprietary rights to the same extent as do laws of the United States. In addition, there remains the possibility that others will "reverse engineer" our products in order to determine their method of operation and introduce competing products or that others will develop competing technology independently. Any such adverse circumstances could have a material adverse effect on our results of operations.

Some of the markets in which we compete are characterized by the existence of a large number of patents and frequent litigation for financial gain that is based on patents with broad, and often questionable, application. As the number of our products increase, the markets in which our products are sold expands, and the functionality of those products grows and overlaps with products offered by competitors, we believe that we may become increasingly subject to infringement claims. Although we do not believe any of our products or proprietary rights infringe the rights of third parties, there can be no assurance that infringement claims will not be asserted against us in the future or that any such claim will not result in costly litigation or require us to enter into royalty arrangements, which may not be available to us on commercially acceptable terms if at all.

Dependence on Key Personnel

Our success depends in large part upon the continued services of many of our highly skilled personnel involved in management, research, development and engineering, sales and marketing,

manufacturing, and support and upon our ability to attract and retain additional highly qualified employees. Our employees may voluntarily terminate their employment with us at any time. Competition for these individuals from a variety of employers, including our competitors and companies in computer or technology-related industries, at times is intense. We cannot assure you that we will be able to retain our existing personnel or attract and retain additional personnel.

Dependence on Third-Party Suppliers

We are dependent on suppliers for raw materials and various electrical, mechanical, and optical supplies, including fiber and electronic components and modules. Although we enter, either directly or through our contract manufacturers, into purchase orders with our suppliers based on our forecasts, we do not have any guaranteed supply arrangements with these suppliers. Moreover, as our demand for supplies increases, we may not be able to obtain these supplies in a timely manner. If any relationship with a key supplier is terminated or if a supplier fails or is unable to provide reliable services or equipment and we are unable to reach suitable alternative solutions quickly, we may experience significant delays and additional costs in the manufacturing of our products. If our key suppliers cease manufacturing the supplies we require, if their manufacturing operations are interrupted for any significant amount of time, or if they are unable or unwilling to supply us for any other reason, including capacity restraints, then we may be at least temporarily unable to obtain these supplies, thus exposing us to significant delays and additional costs. Currently there are only a limited number of companies that are capable of supplying optical materials in the quantity and of the quality we require.

Backlog

We schedule the production of our systems based in part upon order backlog. Due to possible customer changes in delivery schedules and cancellations of orders, our backlog at any particular date is not necessarily indicative of actual sales for any succeeding period. There can be no assurance that amounts included in backlog will ultimately result in future sales. A reduction in backlog during any particular period, or the failure of our backlog to result in future sales could adversely affect our results of operations.

Sales Cycle

Our lengthy and variable qualification and sales cycle makes it difficult to predict the timing of a sale or whether a sale will be made, which may cause us to have excess manufacturing capacity or inventory and negatively impact our operating results. As is typical in the industry, our customers generally expend significant efforts in evaluating and qualifying our products and manufacturing process. This evaluation and qualification process frequently results in a lengthy sales cycle, typically ranging from three to six months and sometimes longer. While our customers are evaluating our products and before they place an order with us, we may incur substantial sales, marketing, and research and development expenses, expend significant management efforts, increase manufacturing capacity and order long-lead-time supplies prior to receiving an order. Even after this evaluation process, it is possible that a potential customer will not purchase our products. In addition, product purchases are frequently subject to unplanned processing and other delays, particularly with respect to larger customers for which our products represent a very small percentage of their overall purchase activity.

If we increase capacity and order supplies in anticipation of an order that does not materialize, our gross margins may be negatively impacted and we may have to carry or write off excess inventory. Even if we receive an order, the additional manufacturing capacity that we add to service the customer's requirements may be underutilized in a subsequent quarter. Either situation could cause our results of operations to be adversely affected. Our long sales cycles also may cause our revenues and operating results to vary significantly and unexpectedly from quarter to quarter.

Prediction of Manufacturing Requirements

If we fail to predict our manufacturing requirements accurately, we could incur additional costs or experience manufacturing delays, which could cause us to lose orders or customers and result in lower net sales. We currently use a rolling 12-month forecast based primarily on our anticipated

product orders and our product order history to help determine our requirements for components and materials. It is very important that we accurately predict both the demand for our products and the lead-time required to obtain the necessary components and raw materials. Lead times for materials and components that we order vary significantly and depend on factors such as the specific supplier, the size of the order, contract terms, and demand for each component at a given time. If we underestimate our requirements, we may have inadequate manufacturing capacity or inventory, which could interrupt manufacturing of our products and result in delays in shipments and net sales. If we overestimate our requirements, we could have excess inventory of parts. In addition, delays in the manufacturing of our products could cause us to lose orders or customers.

Undetected Product Defects

Our products are deployed in large and complex systems and may contain defects that are not detected until after our products have been installed, which could damage our reputation and cause us to lose customers. We design some of our products for deployment in large and complex optical networks. Because of the nature of these products, they can only be fully tested for reliability when deployed in networks for long periods of time. Our customers may discover defects in our products only after they have been fully deployed and operated under peak stress conditions. In addition, our products are combined with products from other vendors. As a result, should problems occur, it might be difficult to identify the source of the problem. These conditions increase the risk that we could experience, among other things: loss of customers; damage to our brand reputation; failure to attract new customers or achieve market acceptance; diversion of development and engineering resources; and legal actions by our customers. The occurrence of any one or more of the foregoing factors could cause us to experience losses, incur liabilities, and cause our net sales to decline.

Environmental Regulations

Environmental regulations applicable to our manufacturing operations could limit our ability to expand or subject us to substantial costs. We are subject to a variety of environmental regulations relating to the use, storage, discharge, and disposal of hazardous chemicals used during our manufacturing processes. Any failure by us to comply with present and future regulations could subject us to future liabilities or the suspension of production. In addition, such regulations could restrict our ability to expand our facilities or could require us to acquire costly equipment or to incur other significant expenses to comply with environmental regulations.

Item 7A. Quantitative and Qualitative Disclosures about Market Risks

The following discussion about our market risk involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. We are exposed to market risk related to changes in interest rates and foreign currency exchange rates. We do not use derivative financial instruments for speculative or trading purposes.

Interest Rate Sensitivity

We maintain a portfolio of cash equivalents and marketable securities including institutional money market funds (which may include commercial paper, certificates of deposit, and U.S. treasury securities), government agency securities, and corporate bonds. Our interest income is sensitive to changes in the general level of U.S. interest rates, particularly on our short-term instruments. The table below presents principal amounts and related weighted average interest rates by year of maturity for our investment portfolio.

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
	(\$ in millions)				
Fair value of investments as of June 30, 2004 maturing in:					
Cash equivalents					
Fixed rate.....	\$ 9.6	\$—	\$—	\$—	\$—
Weighted average interest rate	1.8%	—	—	—	—
Marketable securities					
Fixed rate.....	\$ 8.4	\$2.4	\$4.2	\$1.8	\$—
Weighted average interest rate	2.1%	1.9%	2.6%	2.8%	—

Exchange Rate Sensitivity

Approximately 89% of our fiscal 2004 sales were in U.S. dollars. At June 30, 2004, our backlog included orders in U.S. dollars of \$51.6 million, or 94% of the total backlog. Substantially all of our costs are negotiated and paid in U.S. dollars. Significant changes in the values of foreign currencies relative to the value of the U.S. dollar can impact sales of our products in export markets as would changes in the general economic conditions in those markets. For our sales which are based in local currency, we are exposed to foreign exchange fluctuations from the time customers are invoiced in local currency until collection occurs. Management believes the percentage of sales in foreign currencies may increase in the coming year due to an increase in sales denominated in yen to Japanese customers.

The majority of our foreign currency transactions and foreign operations are in the euro and Japanese yen. In the absence of a substantial increase in sales orders in currency other than U.S. dollars, we believe a 10% appreciation or depreciation of the U.S. dollar against the euro and yen would have an immaterial impact on our consolidated financial position and results of operations.

Item 8. Financial Statements and Supplementary Data

Financial statements and supplementary data required pursuant to this Item begin on Page F-1 of this Annual Report on Form 10K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

ZYGO maintains “disclosure controls and procedures,” as such term is defined under Securities Exchange Act Rule 13a-15 or 15d-15, that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures. In designing and evaluating the disclosure controls and procedures, our management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives and our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. We have carried out an evaluation, as of the end of the period covered by this report, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based upon their evaluation and subject to the foregoing, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective in ensuring that material information relating to ZYGO is made known to the Chief Executive Officer and Chief Financial Officer by others within our company during the period in which this report was being prepared.

There were no changes in our internal controls over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. *Directors and Executive Officers of the Registrant*

Except for the information concerning executive officers which is set forth in Part I of this Annual Report, information required by this item will be included under the captions “Election of Board of Directors”, “Committees of the Board of Directors”, and “Other Agreements and Other Matters” in our Proxy Statement to be filed pursuant to Regulation 14A for use in connection with our company’s 2004 Annual Meeting of Stockholders and is incorporated herein by reference.

Item 11. *Executive Compensation*

Information required by this item will be included in our Proxy Statement under the caption “Executive Compensation” and is incorporated herein by reference.

Item 12. *Security Ownership of Certain Beneficial Owners and Management*

Information required by this item will be included in our Proxy Statement under the captions “Election of Board of Directors,” “Equity Compensation Plan Information,” and “Principal Stockholders” and is incorporated herein by reference.

Item 13. *Certain Relationships and Related Transactions*

Information required by this item will be included in our Proxy Statement under the caption “Certain Relationships and Related Transactions” and is incorporated herein by reference.

Item 14. *Principal Accounting Fees and Services*

Information required by this item will be included in our Proxy Statement under the caption “Relationship with Independent Public Accountants” and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

(a) The following documents are filed as part of this report:

1. and 2. Financial Statements and Financial Statement Schedules:

An index to the financial statements and financial statement schedules filed is located on page F-1.

3. Exhibits

- 3.(i) —Restated Certificate of Incorporation of the Company and amendments thereto (Exhibit 3.(i) to the Company's Annual Report on Form 10-K for its year ended June 30, 1993)*
- 3.(ii) —Certificate of Amendment of Certificate of Incorporation, filed June 3, 1996 (Exhibit 3.(ii) to the Company's Annual Report on Form 10-K 405 for its year ended June 30, 1996)*
- 3.(iii) —By-laws of the Company (Exhibit (3)(b) to Registration No. 2-87253 on Form S-1 hereinafter "Registration No. 2-87253")*
- 10.1 — Confidentiality and Non-Competition Agreement dated October 25, 1983, between the Company and Carl A. Zaroni (Exhibit (10)(b) to Registration No. 2-87253)*
- 10.2 — Agreement dated May 27, 1975, between the Company and Canon U.S.A., Inc., regarding information sharing and marketing (Exhibit (10)(x) to Registration No. 2-87253)*
- 10.3 —Agreement dated November 20, 1980, between the Company and Canon Inc. regarding exchange of information (Exhibit (10)(y) to Registration No. 2-87253)*
- 10.4 —Amended and Restated Zygo Corporation Profit Sharing Plan (Exhibit 10.15 to the Company's Annual Report on Form 10-K405 for its year ended June 30, 1995)*
- 10.5 —Canon/ZYGO Confidentiality Agreement dated March 7, 1990, between the Company and Canon Inc. regarding confidential technical information received from each other (Exhibit 10.42 to the Company's Annual Report on Form 10-K for its year ended June 30, 1991)*
- 10.6 —Services Agreement dated August 26, 1993, between the Company and Paul F. Forman (Exhibit 10.26 to the Company's Annual Report on Form 10-K for its year ended June 30, 1993)*
- 10.7 —Amendment Agreement dated as of December 31, 1996, between the Company and Paul F. Forman (Exhibit 10.16 to the Company's Annual Report on Form 10-K for its year ended June 30, 1997)*
- 10.8 —Non-Competition Agreement dated August 26, 1993, between the Company and Paul F. Forman (Exhibit 10.27 to the Company's Annual Report on Form 10-K for its year ended June 30, 1993)*
- 10.9 —Zygo Corporation Amended and Restated Non-Qualified Stock Option Plan ratified and approved by the Company's Stockholders on November 19, 1992 (Exhibit 10.30 to the Company's Annual Report on Form 10-K for its year ended June 30, 1993)*
- 10.10—Renewal of Line of Credit dated June 4, 1997, between the Company and Fleet Bank Connecticut, N.A. (Exhibit 10.23 to the Company's Annual Report on Form 10-K for its year ended June 30, 1997)*
- 10.11—Zygo Corporation Non-Employee Director Stock Option Plan ratified and approved by the Company's stockholders on November 17, 1994 (Exhibit 10.30 to the Company's Annual Report on Form 10-K405 for its year ended June 30, 1996)*
- 10.12—Subcontract B335188 between The Regents of The University of California Lawrence Livermore National Laboratory and Zygo Corporation dated May 9, 1997 (Exhibit 10.31 to the Company's Annual Report on Form 10-K for its year ended June 30, 1997)*
- 10.13—Agreement between Zygo Corporation and Dacon Corporation covering an addition to the Company's Middlefield, Connecticut, facilities (Project 1774) and the N.I.F. Manufacturing Renovation (Project 1842) dated April 7, 1997 (Exhibit 10.32 to the Company's Annual Report on Form 10-K for its year ended June 30, 1997)*
- 10.14—Employment agreement dated January 15, 1999, between Zygo Corporation and J. Bruce Robinson (Exhibit 10.34 to the Company's Annual Report on Form 10-K 405 for its year ended June 30, 1999)*
- 10.15—Zygo Corporation Amended and Restated Non-Employee Director Stock Option Plan ratified and approved by the Company's stockholders on November 17, 1999 (Exhibit to the Company's Definitive Proxy Statement for its year ended June 30, 1999)*

- 10.16—Employment agreement dated July 1, 1999, between Zygo Corporation and Brian J. Monti (Exhibit 10.22 to the Company's Annual Report on Form 10-K405 for its year ended June 30, 2000)*
 - 10.17—Acquisition Agreement dated May 5, 2000, by and among Zygo Corporation, Firefly Technologies Inc., and the Shareholders of Firefly Technologies Inc. (Company's Current Reports on Form 8-K dated May 8, 2000 and on Form 8-KA dated June 30, 2000)*
 - 10.18—Employment agreement dated May 5, 2000, between Zygo Corporation and John Berg (Exhibit 10.01(e)(1) to the Company's Current Reports on Form 8-K dated May 8, 2000 and on Form 8-KA dated June 30, 2000)*
 - 10.19—Employment agreement dated May 5, 2000, between Zygo Corporation and Patrick Tan (Exhibit 10.01(e)(2) to the Company's Current Reports on Form 8-K dated May 8, 2000 and on Form 8-KA dated June 30, 2000)*
 - 10.20—Promissory Note to the amended and restated credit agreement dated May 14, 2001, between Zygo Corporation and Fleet National Bank (Exhibit 10.26 to the Company's Annual Report on Form 10K405 for its year ended June 30, 2001)*
 - 10.21—Amended and restated credit agreement dated May 14, 2001, between Zygo Corporation and Fleet National Bank (Exhibit 10.21 to the Company's Annual Report on Form 10K for its year ended June 30, 2002)*
 - 10.22—Amended and restated credit agreement dated November 22, 2001 between Zygo Corporation and Fleet National Bank (Exhibit 10.22 to the Company's Annual Report on Form 10K for its year ended June 30, 2002)*
 - 10.23—Amended and restated credit agreement dated June 26, 2002 between Zygo Corporation and Fleet National Bank (Exhibit 10.23 to the Company's Annual Report on Form 10K for its year ended June 30, 2002)*
 - 10.24—Subcontract B514527 between The Regents of The University of California Lawrence Livermore National Laboratory and Zygo Corporation dated April 14, 2001 (Exhibit 10.24 to the Company's Annual Report on Form 10K for its year ended June 30, 2002)*
 - 10.25—Subcontract B519044 between The Regents of The University of California Lawrence Livermore National Laboratory and Zygo Corporation dated January 14, 2002 (Exhibit 10.25 to the Company's Annual Report on Form 10K for its year ended June 30, 2002)*
 - 10.26—Development Agreement dated September 11, 2002, between Zygo Corporation and Canon, Inc. (Exhibit 99.2 to the Company's Current Reports on Form 8-K dated September 17, 2002)*
 - 10.27—Development and Manufacturing Support Services Agreement effective December 1, 2001, between Zygo Corporation and Philips Electronics North America Corporation. (Exhibit 99.1 to the Company's Current Reports on Form 8-K dated October 22, 2002)*
 - 10.28—Master Reaffirmation and Amendment No. 3 to Loan Documents dated November 21, 2002, between Fleet National Bank and Zygo Corporation. (Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for its quarterly period ended December 27, 2002)*
 - 10.29—Master Reaffirmation and Amendment No. 4 to Loan Documents dated December 18, 2003, between Fleet National Bank and Zygo Corporation. (Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for its quarterly period ended December 26, 2003)*
 - 10.30—Offer Letter dated February 10, 2004 between Zygo Corporation and Walter Shephard.
 - 14.1 —Zygo Corporation Code of Ethics (Exhibit 14.1 to the Company's Quarterly Report on Form 10-Q for its quarterly period ended March 26, 2004)*
 - 21. —Subsidiaries of Registrant
 - 23. —Consent of Independent Registered Public Accounting Firm
 - 24. —Power of Attorney (included in the signature page)
 - 31.1 —Certification of Chief Executive Officer under Rule 13a-14(a)
 - 31.2 —Certification of Chief Financial Officer under Rule 13a-14(a)
 - 32.1 —Certification of Chief Executive Officer and Chief Financial Officer
- Exhibit numbers 10.9, 10.11, 10.14, 10.15, 10.16, 10.18, 10.19, and 10.30, are management contracts, compensatory plans or arrangements.

* Incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

ZYGO CORPORATION
(Registrant)

Date September 13, 2004

By /s/ WALTER A. SHEPHARD
Walter A. Shephard
Vice President, Finance, Chief Financial Officer,
and Treasurer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints J. Bruce Robinson and Walter A. Shephard, jointly and severally, his attorneys-in-fact, each with the power of substitution, for each of them in any and all capacities, to sign any amendments to this Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorney's-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u> /s/ J. BRUCE ROBINSON </u> J. Bruce Robinson	Chairman, President, and Chief Executive Officer	September 13, 2004
<u> /s/ WALTER A. SHEPHARD </u> Walter A. Shephard	Vice President, Finance, Chief Financial Officer, and Treasurer	September 13, 2004
<u> /s/ CARL A. ZANONI </u> Carl A. Zanoni	Senior Vice President, Technology and Director	September 13, 2004
<u> /s/ EUGENE G. BANUCCI </u> (Eugene G. Banucci)	Director	September 13, 2004
<u> /s/ YOUSSEF A. EL-MANSY </u> (Youssef A. El-Mansy)	Director	September 13, 2004
<u> /s/ PAUL F. FORMAN </u> (Paul F. Forman)	Director	September 13, 2004
<u> /s/ SAMUEL H. FULLER </u> (Samuel H. Fuller)	Director	September 13, 2004
<u> /s/ SEYMOUR E. LIEBMAN </u> (Seymour E. Liebman)	Director	September 13, 2004

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ ROBERT G. MCKELVEY</u> (Robert G. McKelvey)	Director	September 13, 2004
<u>/s/ ROBERT B. TAYLOR</u> (Robert B. Taylor)	Director	September 13, 2004
<u>/s/ BRUCE W. WORSTER</u> (Bruce W. Worster)	Director	September 13, 2004

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ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES
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All other schedules have been omitted since the required information is not present or not present in amounts sufficient to require submission of the schedules or the information required is included in the consolidated financial statements or notes thereto.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
ZYGO CORPORATION:

We have audited the accompanying consolidated balance sheets of Zygo Corporation and subsidiaries as of June 30, 2004 and 2003, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended June 30, 2004. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Zygo Corporation and subsidiaries as of June 30, 2004 and 2003, and the results of their operations and their cash flows for each of the years in the three-year period ended June 30, 2004, in conformity with U.S. generally accepted accounting principles.

As discussed in Notes 1 and 2 to the consolidated financial statements, the Company changed its method of accounting for impairment and disposal of long-lived assets effective July 1, 2002 in accordance with Statement of Financial Accounting Standards No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets."

KPMG LLP

Hartford, Connecticut
August 25, 2004

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>
(Thousands of dollars, except share amounts)		
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 17,462	\$ 31,209
Marketable securities (note 3)	8,428	14,929
Receivables (notes 4 and 18)	26,338	12,868
Inventories (note 5).....	21,547	18,444
Prepaid expenses	1,915	1,791
Deferred income taxes (note 16).....	3,999	5,179
Assets from discontinued unit held for sale (notes 2 and 10)	2,012	11,899
Total current assets	<u>81,701</u>	<u>96,319</u>
Marketable securities (note 3).....	8,503	6,712
Property, plant, and equipment, net (note 6)	27,433	26,648
Deferred income taxes (note 16)	31,738	26,364
Intangible assets, net (notes 7)	4,999	4,464
Other assets.....	1,078	561
Total assets	<u>\$155,452</u>	<u>\$161,068</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt (note 10).....	\$ —	\$ 11,374
Accounts payable	10,384	5,254
Accrued progress payments (note 18).....	615	2,319
Accrued salaries and wages	5,794	3,612
Interest rate swap liability (note 10)	—	1,435
Other accrued expenses (note 9).....	4,389	3,694
Income taxes payable	2,038	1,750
Total current liabilities	<u>23,220</u>	<u>29,438</u>
Long-term debt (note 10)	—	—
Other long-term liabilities (note 2)	350	609
Minority interest	1,238	1,161
Total liabilities	<u>24,808</u>	<u>31,208</u>
Commitments (notes 9 and 11)		
Stockholders' equity (notes 13, 14, and 15):		
Common stock, \$.10 par value per share:		
40,000,000 shares authorized (40,000,000 in 2003); 18,332,933 shares		
issued (18,042,917 in 2003); 17,885,728 shares outstanding		
(17,595,712 in 2003)	1,833	1,804
Additional paid-in capital	141,151	138,333
Retained earnings (deficit)	(5,996)	(2,589)
Accumulated other comprehensive income (loss):		
Currency translation effects.....	(1,119)	(1,623)
Net unrealized loss on swap agreement (note 10)	—	(914)
Net unrealized gain on marketable securities (note 3)	62	136
Total stockholders' equity	<u>135,931</u>	<u>135,147</u>
Less treasury stock, at cost; 447,205 common shares (447,205 shares in		
2003)	5,287	5,287
Total stockholders' equity	<u>130,644</u>	<u>129,860</u>
Total liabilities and stockholders' equity.....	<u>\$155,452</u>	<u>\$161,068</u>

See accompanying notes to consolidated financial statements.

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended June 30,		
	2004	2003	2002
(Thousands except per share amounts)			
Net sales (notes 18 and 19)			
Products.....	\$100,585	\$ 83,798	\$ 78,877
Development services	16,057	18,779	1,391
	116,642	102,577	80,268
Cost of goods sold			
Products.....	61,044	52,202	51,666
Development services	12,533	14,930	1,139
	73,577	67,132	52,805
Gross profit.....	43,065	35,445	27,463
Selling, general, and administrative expenses.....	24,280	20,424	22,685
Research and development	13,011	12,659	17,696
Automation Systems Group exit costs (note 2)	315	352	1,856
Operating profit (loss)	5,459	2,010	(14,774)
Gain on sale of Automation Systems Group (note 2).....	—	—	6,142
Other income (expense):			
Interest income.....	795	943	1,605
Miscellaneous income (expense), net	169	(293)	(428)
Total other income	964	650	1,177
Earnings (loss) before income taxes and minority interest	6,423	2,660	(7,455)
Income tax benefit (expense) (note 16)	(1,863)	(626)	3,652
Minority interest	(312)	(459)	(476)
Earnings (loss) from continuing operations	4,248	1,575	(4,279)
Discontinued TeraOptix operations, net of tax (note 2).....	(1,263)	(2,493)	(7,454)
Charges related to the disposal of TeraOptix, net of tax (note 2)...	(6,392)	(9,652)	—
Loss from discontinued operations	(7,655)	(12,145)	(7,454)
Net earnings (loss).....	\$ (3,407)	\$(10,570)	\$(11,733)
Basic—Earnings (loss) per share:			
Continuing operations	\$ 0.24	\$ 0.09	\$ (0.24)
Discontinued operations	\$ (0.43)	\$ (0.69)	\$ (0.43)
Net earnings (loss)	\$ (0.19)	\$ (0.60)	\$ (0.67)
Diluted—Earnings (loss) per share:			
Continuing operations	\$ 0.23	\$ 0.09	\$ (0.24)
Discontinued operations	\$ (0.42)	\$ (0.69)	\$ (0.43)
Net earnings (loss)	\$ (0.19)	\$ (0.60)	\$ (0.67)
Weighted average number of shares:			
Basic	17,802	17,539	17,414
Diluted.....	18,221	17,696	17,414

See accompanying notes to consolidated financial statements.

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	<u>Total</u>	<u>Comp. Income (Loss)</u>	<u>Retained Earnings (Deficit)</u>	<u>Accum. Other Comp. Income (Loss)</u>	<u>Common Stock</u>	<u>Treasury Stock</u>	<u>Paid-In Capital</u>
(Thousands of dollars)							
Balance at June 30, 2001.....	\$149,139		\$ 19,714	\$(1,718)	\$1,780	\$(5,017)	\$134,380
Comprehensive income (loss)							
Net loss	(11,733)	<u>(11,733)</u>	(11,733)				
Other comprehensive income (loss), net of tax							
Unrealized loss on marketable securities	(21)	(21)					
Unrealized loss on swap agreement	(546)	(546)					
Foreign currency translation effect	417	<u>417</u>					
Other comprehensive loss		<u>(150)</u>		(150)			
Comprehensive loss.....		<u>(11,883)</u>					
Repurchased common stock adjustment.....	(270)					(270)	
Non-cash compensation charges related to stock options.....	83						83
Employee stock purchase	1,098				8		1,090
Exercise of employee stock options and related tax effect	<u>1,838</u>				<u>1</u>		<u>1,837</u>
Balance at June 30, 2002.....	\$140,005		\$ 7,981	\$(1,868)	\$1,789	\$(5,287)	\$137,390
Comprehensive income (loss)							
Net loss	(10,570)	<u>(10,570)</u>	(10,570)				
Other comprehensive income (loss), net of tax							
Unrealized gain on marketable securities	120	120					
Unrealized loss on swap agreement	(399)	(399)					
Foreign currency translation effect	(254)	<u>(254)</u>					
Other comprehensive loss		<u>(533)</u>		(533)			
Comprehensive loss.....		<u>(11,103)</u>					
Non-cash compensation charges related to stock options.....	70						70
Employee stock purchase	731				12		719
Exercise of employee stock options and related tax effect	<u>157</u>				<u>3</u>		<u>154</u>
Balance at June 30, 2003.....	\$129,860		\$ (2,589)	\$(2,401)	\$1,804	\$(5,287)	\$138,333
Comprehensive income (loss)							
Net loss	(3,407)	<u>(3,407)</u>	(3,407)				
Other comprehensive income (loss), net of tax							
Unrealized loss on marketable securities	(74)	(74)					
Reclassification adjustment for loss on swap agreement included in net loss.....	914	914					
Foreign currency translation effect	504	<u>504</u>					
Other comprehensive income		<u>1,344</u>		1,344			
Comprehensive loss.....		<u>(2,063)</u>					
Non-cash compensation charges related to stock options.....	269						269
Tax benefit for deductible expenses charged to equity	474						474
Employee stock purchase	578				9		569
Exercise of employee stock options and related tax effect	<u>1,526</u>				<u>20</u>		<u>1,506</u>
Balance at June 30, 2004.....	<u>\$130,644</u>		<u>\$ (5,996)</u>	<u>\$(1,057)</u>	<u>\$1,833</u>	<u>\$(5,287)</u>	<u>\$141,151</u>

See accompanying notes to consolidated financial statements.

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended June 30,		
	2004	2003	2002
(Thousands of dollars)			
Cash provided by (used for) operating activities:			
Net loss	\$ (3,407)	\$(10,570)	\$(11,733)
Adjustments to reconcile net loss to cash provided by (used for) operating activities:			
Loss from discontinued operations	7,655	12,145	7,454
Depreciation and amortization	5,717	5,623	6,098
Gain on sale of Automation Systems Group	—	—	(6,142)
Loss on disposal and impairment of assets	525	489	2,320
Deferred income taxes	(233)	(236)	(1,336)
Other non-cash items	192	70	83
Changes in operating accounts:			
Receivables	(13,401)	7,528	2,681
Costs in excess of billings	—	—	(690)
Inventories	(2,796)	4,353	(568)
Prepaid expenses	(122)	(367)	(131)
Accounts payable, accrued expenses and taxes payable	7,310	2,721	(7,801)
Minority interest	312	459	476
Net cash provided by (used for) continuing operations	1,752	22,215	(9,289)
Net cash used for discontinued operations	(1,944)	(4,607)	(8,470)
Net cash provided by (used for) operating activities	(192)	17,608	(17,759)
Cash used for investing activities:			
Additions to property, plant, and equipment	(7,585)	(5,037)	(11,381)
Purchase of marketable securities	(8,533)	(15,842)	(8,001)
Additions to intangibles and other assets	(1,138)	(957)	(493)
Proceeds from the sale of assets	—	—	673
Proceeds from sale of Automation Systems Group, net of cash sold (\$88)	—	—	12,077
Restricted cash with interest from sale of Automation Systems Group	—	1,225	(1,225)
Proceeds from the sale of marketable securities	1,001	—	4,248
Proceeds from maturity of marketable securities	12,125	3,075	2,155
Net cash used for continuing operations	(4,130)	(17,536)	(1,947)
Net cash provided by (used for) discontinued operations	80	2,841	(6,259)
Net cash used for investing activities	(4,050)	(14,695)	(8,206)
Cash provided by (used for) financing activities:			
Dividend payments to minority interest	(235)	(268)	(469)
Employee stock purchase	578	731	1,098
Exercise of employee stock options	1,526	157	1,838
Repurchase of common stock	—	—	(270)
Net cash provided by continuing operations	1,869	620	2,197
Net cash used for discontinued operations	(11,374)	(837)	(349)
Net cash provided by (used for) financing activities	(9,505)	(217)	1,848
Net increase (decrease) in cash and cash equivalents	(13,747)	2,696	(24,117)
Cash and cash equivalents, beginning of year	31,209	28,513	52,630
Cash and cash equivalents, end of year	\$ 17,462	\$ 31,209	\$ 28,513

See accompanying notes to consolidated financial statements.

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

Note 1: Summary of Significant Accounting Policies

Description of Operations and Principles of Consolidation

Zygo Corporation is a worldwide developer and supplier of high performance metrology instruments, high precision optics, optical assemblies, and automation for the semiconductor and industrial markets. The accompanying consolidated financial statements include the accounts of Zygo Corporation and its subsidiaries (“ZYGO,” “we,” “us,” “our” or “Company”). All material transactions and accounts with the subsidiaries have been eliminated from the consolidated financial statements.

Cash and Cash Equivalents

We consider cash and investments in securities with maturities at the date of purchase of three months or less to be cash and cash equivalents.

Marketable Securities

We consider investments in securities with maturities at the date of purchase in excess of three months as marketable securities. Marketable securities primarily consist of corporate bonds, government agency securities, and tax-exempt bonds. All securities held by us at June 30, 2004 and 2003, were classified as held to maturity and recorded at cost. Unrealized holding gains and losses, net of the related tax effect, on available-for-sale securities are excluded from earnings and are reported as a separate component of stockholders’ equity until realized.

Inventories

Inventories are stated at the lower of cost (determined on a first-in, first-out basis) or market.

Property, Plant, and Equipment

Property, plant, and equipment are stated at cost. Maintenance and repairs are charged to expense as incurred. Management evaluates, on an ongoing basis, the carrying value of our property, plant, and equipment and makes adjustments when impairments are identified. Depreciation is based on the estimated useful lives of the various classes of assets and is computed using the straight-line method.

Intangible Assets

Intangible assets include patents, trademarks, and license agreements. The cost of intangible assets is amortized on a straight-line basis, which ranges from 4-20 years.

Valuation of Long-Lived Assets

In accordance with Statement of Financial Accounting Standards (“SFAS”) No. 144, “Accounting for the Impairment or Disposal of Long-Lived Assets,” the carrying value of intangible assets and other long-lived assets is reviewed on a regular basis for the existence of facts or circumstances, both internally and externally, that may suggest impairment. Some factors considered important, which could trigger an impairment review, include a significant decrease in the market value of an asset, a significant change in the extent or manner in which an asset is used, a significant adverse change in the business climate that could affect the value of an asset,

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

an accumulation of costs for an asset in excess of the amount originally expected, a current period operating or cash flow loss combined with a history of operating or cash flow losses or a projection that demonstrates continuing losses, and a current expectation that, more likely than not, a long-lived asset will be disposed of significantly before the end of its estimated useful life.

If such circumstances exist, the carrying value of long-lived assets are evaluated to determine if impairment exists based upon estimated undiscounted future cash flows over the remaining useful life of the assets and comparing that value to the carrying value of the assets. If the carrying value of the assets is greater than the estimated future cash flows, the assets are written down to the estimated fair value. The estimated fair value of the assets is based on a current market value of the assets. If a current market value is not readily available, a projected discounted cash flow method is applied using a discount rate determined by management to be commensurate with the risk inherent in the current business model. Our cash flow estimates contain management's best estimates, using appropriate and customary assumptions and projections at the time.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

Revenue Recognition

We recognize revenue based on guidance provided in Securities and Exchange Commission ("SEC") Staff Accounting Bulletin ("SAB") No. 104, "Revenue Recognition". We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, our price is fixed or determinable, and collectibility is reasonably assured.

Research and Development

Research and development costs are expensed as incurred.

Earnings Per Share

Basic and diluted earnings per share are calculated in accordance with Statement of Financial Accounting Standards No. 128, "Earnings Per Share."

The following table sets forth the reconciliation of weighted average shares outstanding and diluted weighted average shares outstanding:

	June 30, 2004	June 30, 2003	June 30, 2002
Weighted average shares outstanding	17,802,000	17,539,000	17,414,000
Dilutive effect of stock options	419,000	157,000	—
Diluted weighted average shares outstanding	<u>18,221,000</u>	<u>17,696,000</u>	<u>17,414,000</u>

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

For the fiscal year ended June 30, 2002, the Company recorded a net loss from continuing operations. Due to the net loss from continuing operations, stock options of 319,000 for the fiscal year ended 2002 were excluded from the computation because of the anti-dilutive effect on earnings per share.

Stock Based Compensation

We have three stock-based compensation plans, which are described in note 14. We apply Accounting Principles Board (“APB”) Opinion No. 25, “Accounting for Stock Issued to Employees,” and related interpretations in accounting for our plans. Since all options were granted with an exercise price equal to the fair market value on the date of grant, no compensation cost has been recognized for our fixed option plans. Pro forma information regarding net earnings (loss) and earnings (loss) per share is required by SFAS No. 123, “Accounting for Stock-Based Compensation,” which requires that the information be determined as if we have accounted for our stock options granted in fiscal years beginning after December 15, 1994 under the fair value method of the statement.

The fair value of options at date of grant was estimated using the Black-Scholes model. Our pro forma information is as follows:

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>	<u>June 30,</u> <u>2002</u>
Net earnings (loss), as reported	\$(3,407)	\$(10,570)	\$(11,733)
Deduct: Total stock-based employee compensation expense determined under fair value based method for all awards, net of related tax effects	<u>(5,786)</u>	<u>(5,209)</u>	<u>(8,896)</u>
Pro forma net earnings (loss)	<u>\$(9,193)</u>	<u>\$(15,779)</u>	<u>\$(20,629)</u>
Net earnings (loss) per share			
Basic—as reported	<u>\$ (0.19)</u>	<u>\$ (0.60)</u>	<u>\$ (0.67)</u>
Basic—pro forma	<u>\$ (0.52)</u>	<u>\$ (0.90)</u>	<u>\$ (1.18)</u>
Diluted—as reported.....	<u>\$ (0.19)</u>	<u>\$ (0.60)</u>	<u>\$ (0.67)</u>
Diluted—pro forma.....	<u>\$ (0.50)</u>	<u>\$ (0.90)</u>	<u>\$ (1.18)</u>

The above pro forma information is based on historical activity and may not represent future trends.

Fair Value of Financial Instruments

SFAS No. 107, “Disclosures about Fair Value of Financial Instruments,” requires that reporting entities provide, to the extent practicable, the fair value of financial instruments, both assets and liabilities. The carrying amounts of cash, accounts receivable, accounts payable, and accrued expenses approximate fair value because they are short-term in nature.

Use of Estimates

Management has made a number of estimates and assumptions relating to the reporting of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities to prepare these consolidated financial statements in conformity with accounting principles generally accepted in the United States of America. On an ongoing basis, management evaluates its

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

estimates and judgments, including those related to bad debts, inventories, long-lived assets, income taxes, and warranty obligations. Actual results could differ from those estimates.

Reclassifications

Certain amounts included in the consolidated financial statements for the prior years have been reclassified to conform with the current year presentation.

Recently Issued Accounting Pronouncements

In January and December 2003, the FASB Issued Financial Interpretation No (“FIN”) 46, “Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51.” FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the equity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective for all new variable interest entities created or acquired after January 31, 2003. FIN 46 is effective for all variable interest entities created or acquired prior to February 1, 2003 for the first reporting period ended after March 15, 2004. The adoption of FIN 46 did not have an impact on our consolidated results of operations or financial position.

In April 2003, the FASB issued SFAS No. 149, “Amendment of Statement 133 on Derivative Instruments and Hedging Activities,” which amends and clarifies financial accounting and reporting for derivative instruments. SFAS No. 149 became effective for us in July 2003. The adoption of SFAS No. 149 did not have an affect on our consolidated results of operations or financial position.

In May 2003, the FASB issued SFAS No. 150, “Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity,” which establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity. Generally, the statement is effective for financial instruments entered into or modified after November 5, 2003 and is otherwise effective for the beginning of the first interim period beginning after June 15, 2003. The adoption of SFAS No. 150 did not have an affect on our consolidated results of operations or financial position.

The FASB’s Emerging Issues Task Force (“EITF”) reached a consensus on Issue No. 00-21, “Revenue Arrangements with Multiple Deliverables.” EITF Issue No. 00-21 provides guidance on how to account for arrangements that involve the delivery or performance of multiple products, services, and/or rights to use assets. The provisions of EITF Issue No. 00-21 apply to revenue arrangements entered into in fiscal periods beginning after June 15, 2003. The adoption of EITF Issue No. 00-21 did not have a material effect on our consolidated results of operations or financial position.

In December 2003, the FASB issued SFAS No. 132 (revised 2003), “Employers’ Disclosures about Pensions and Other Postretirement Benefits,” which expands financial statement disclosures for defined benefit plans. The change replaces existing FASB disclosure requirements for pensions. The adoption of SFAS No. 132 (revised) did not have an affect on our results of operations or financial position.

Note 2: Divestitures and Discontinued Operations

On December 12, 2001, we sold our Automation Systems Group in Longmont, Colorado, to Brooks Automation, Inc. of Chelmsford, Massachusetts, in a cash transaction, for \$12,165. Substantially all of the assets were sold to Brooks and substantially all of the liabilities were assumed by Brooks. The gain on the sale was \$6,142 before related exit costs of \$1,856 to be paid

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

from the proceeds, inventory write-downs of \$808, and tax expense of \$1,322. In fiscal 2004 and 2003, we recorded an additional \$315 and \$352, respectively, of charges related to the remaining term on the lease of space formerly occupied by the Automation Systems Group.

In September 2002, we committed to a planned disposition of our TeraOptix business unit (“TeraOptix”). During fiscal 2003, we recorded an after-tax loss of \$9,652, net of a tax benefit of \$5,101 for charges related to the disposal of TeraOptix. During fiscal 2004, we recorded additional charges related to the disposal of TeraOptix of \$6,392, net of tax of \$3,425, primarily related to impairment charges on the vacant facility previously used by the TeraOptix unit. In December 2003, we paid off the remaining mortgage debt of \$10,955 on the facility. The mortgage debt had carried interest at 7.5% per annum at the time of repayment, and required monthly principal payments of \$70, plus interest, until April 2007 and a balloon payment of \$8,200 in May 2007. In connection with the debt repayment, the Company also paid the balance of a related interest rate swap agreement of \$1,109. This payment resulted in an additional charge to discontinued TeraOptix operations, recorded net of tax. Prior to the payment, in accordance with SFAS No. 133, as amended, the swap liability was recorded with a corresponding debit, net of tax, to stockholders’ equity. The aggregate payment of \$12,064 on the mortgage debt (\$10,955) and swap agreement (\$1,109) was funded from the Company’s available cash and marketable securities.

Subsequent to the balance sheet date, we announced in August 2004 that we have entered into an agreement to sell our vacant Westborough, Massachusetts, facility. The sales transaction, anticipated to be completed in the fall of 2004, is expected to generate approximately \$2,000 in cash, net of selling expenses.

The results and loss on disposal of the TeraOptix business unit have been presented as separate line items in the accompanying consolidated statements of operations as discontinued operations, net of tax, for all periods presented. The components of cash flow from discontinued operations are as follows:

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>	<u>June 30,</u> <u>2002</u>
Cash flow from operating activities from discontinued operations:			
Loss from discontinued operations	\$ (7,655)	\$ (12,145)	\$ (7,454)
Depreciation and amortization	—	—	1,153
Loss on sale and impairment of assets	9,817	13,070	—
Deferred income taxes	(4,104)	(6,506)	(3,685)
Receivables	—	845	1,294
Inventories	—	815	(159)
Prepaid expenses	(2)	20	59
Accounts payable and accrued expenses	—	(706)	322
Net cash used for operating activities from discontinued operations	<u>\$ (1,944)</u>	<u>\$ (4,607)</u>	<u>\$ (8,470)</u>
Cash flow from investing activities from discontinued operations:			
Additions to property, plant, and equipment ..	\$ —	\$ —	\$ (6,259)
Proceeds from sale of assets	<u>80</u>	<u>2,841</u>	<u>—</u>
Net cash provided by (used for) investing activities from discontinued operations	<u>\$ 80</u>	<u>\$ 2,841</u>	<u>\$ (6,259)</u>
Cash flow from financing activities from discontinued operations:			
Payments of long-term debt	<u>\$(11,374)</u>	<u>\$ (837)</u>	<u>\$ (349)</u>
Net cash used for financing activities from discontinued operations	<u>\$(11,374)</u>	<u>\$ (837)</u>	<u>\$ (349)</u>

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

Note 3: Marketable Securities

Marketable securities consisted primarily of corporate bonds, government agency securities and tax-exempt bonds issued by various federal, state and municipal agencies for both 2004 and 2003. Marketable securities at June 30, 2004 and 2003 are reported at cost. The gross unrealized gains on marketable securities of \$90 and \$213 at June 30, 2004 and 2003, respectively, are shown net of their related tax effects, resulting in balances of \$62 and \$136, respectively, as a separate component of stockholders' equity. As of June 30, 2003, we transferred our marketable securities from available-for-sale to held-to-maturity. Accordingly, the gross unrealized gains, net of tax, of \$62 in stockholders' equity remaining as of June 30, 2004 will continue to be amortized over the remaining life of the securities. Amortization expense related to marketable securities was \$43 and \$49 in fiscal 2004 and 2003, respectively. During fiscal 2004, we sold four securities totaling \$1,001 that were classified as held to maturity. We sold these securities in order to comply with changes in our investment policy. The gain realized on the sale of these securities was \$13.

Dividend and interest income is recognized when earned. Realized gains and losses are included in earnings and are derived using the specific identification method for determining the cost of securities sold.

The amortized cost, gross unrealized holding gains (losses), and fair value of held-to-maturity securities at June 30, 2004 and 2003 were as follows:

	<u>Amortized Cost</u>	<u>Gross Unrealized Holding Gains</u>	<u>Gross Unrealized Holding Losses</u>	<u>Fair Value</u>
At June 30, 2004				
Corporate, federal, state and local municipal bonds	\$16,931	\$ 3	\$172	\$16,762
At June 30, 2003				
Corporate, federal, state and local municipal bonds	\$21,641	\$—	\$—	\$21,641

Maturities of investment securities classified as held-to-maturity were as follows at June 30, 2004 and 2003:

	<u>June 30, 2004</u>		<u>June 30, 2003</u>	
	<u>Amortized Cost</u>	<u>Fair Value</u>	<u>Amortized Cost</u>	<u>Fair Value</u>
Due within one year	\$ 8,428	\$ 8,419	\$14,929	\$14,929
Due after one year through five years ...	8,503	8,343	6,712	6,712
	<u>\$16,931</u>	<u>\$16,762</u>	<u>\$21,641</u>	<u>\$21,641</u>

Note 4: Accounts Receivable

At June 30, 2004 and 2003, accounts receivable were as follows:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>
Trade (note 18)	\$26,383	\$12,284
Other	662	921
	<u>27,045</u>	<u>13,205</u>
Allowance for doubtful accounts	(707)	(337)
	<u>\$26,338</u>	<u>\$12,868</u>

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

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Note 5: Inventories

At June 30, 2004 and 2003, inventories were as follows:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>
Raw materials and manufactured parts	\$11,155	\$10,103
Work in process	9,794	7,816
Finished goods.....	598	525
	<u>\$21,547</u>	<u>\$18,444</u>

Note 6: Property, Plant, and Equipment

At June 30, 2004 and 2003, property, plant, and equipment, at cost, were as follows:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>	<u>Estimated Useful Life (Years)</u>
Land	\$ 615	\$ 615	—
Building and Improvements	11,941	11,355	15–40
Machinery, Equipment, and office furniture	40,602	39,545	3–8
Leasehold improvements	657	166	1–5
Construction in progress	3,917	2,222	—
	<u>57,732</u>	<u>53,903</u>	
Less accumulated depreciation	<u>(30,299)</u>	<u>(27,255)</u>	
	<u>\$ 27,433</u>	<u>\$ 26,648</u>	

Depreciation expense for the fiscal years ended June 30, 2004, 2003, and 2002 was \$5,225, \$5,325, and \$5,335, respectively.

Note 7: Intangible Assets

Intangible assets, at cost, at June 30, 2004 and 2003 were as follows:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>
Intangible assets.....	\$ 6,759	\$ 5,775
Accumulated amortization.....	<u>(1,760)</u>	<u>(1,311)</u>
	<u>\$ 4,999</u>	<u>\$ 4,464</u>

Intangible amortization expense was \$449 for the fiscal year ended June 30, 2004 and is estimated to be approximately \$450 in fiscal years 2005-2009. Intangible amortization expense for the fiscal years ended June 30, 2003 and 2002 was \$249 and \$763, respectively, which included goodwill amortization of \$263 in fiscal 2002. As of June 30, 2002, the Company's goodwill was fully amortized. Amortization expense related to certain intangible assets is included in cost of goods sold in the consolidated statements of operations.

Note 8: Bank Line of Credit

We have a \$3,000 unsecured bank line of credit bearing interest at our choice of either the prime rate (4.00% at June 30, 2004) or the one month LIBOR rate plus a variable interest rate of 1.0% to 2.5%, based on a pricing grid related to a certain debt ratio, adjusted quarterly. The line

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

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of credit is available through November 18, 2004. At June 30, 2004 and 2003, no amounts were outstanding under the bank line of credit.

Note 9: Warranty

A limited warranty is provided on our products for periods typically ranging from 3 to 12 months and allowances for estimated warranty costs are recorded during the period of sale. The determination of such allowances requires management to make estimates of product return rates and expected costs to repair or replace products under warranty. If actual return rates or repair and replacement costs, or both, differ significantly from management's estimates, adjustments to recognize additional expense may be required.

The following is a reconciliation of the beginning and ending balances of our accrued warranty liability, which is included in the "Other accrued expenses" line item in the consolidated balance sheets:

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>
Beginning balance	\$ 1,215	\$ 830
Reductions for payments made	(2,305)	(1,153)
Changes in accruals related to warranties issued in the current period	1,949	1,346
Changes in accrual related to pre-existing warranties	<u>627</u>	<u>192</u>
Ending balance	<u>\$ 1,486</u>	<u>\$ 1,215</u>

Note 10: Long-Term Debt

In December 2003, we paid off the remaining mortgage debt of \$10,955 on the facility and the interest rate swap agreement of \$1,109. The mortgage debt had carried interest at 7.5% per annum at the time of repayment and required monthly principal payments of \$70, plus interest, until April 2007 with a balloon payment of \$8,200 in May 2007.

Interest payments on debt were \$480, \$1,021, and \$1,158 in fiscal 2004, 2003, and 2002, respectively.

Note 11: Leases

We lease certain manufacturing equipment and facilities under operating leases, some of which include cost escalation clauses, expiring on various dates through 2008. Total lease expense, net, charged to operations was \$1,720 in 2004, \$1,453 in 2003, and \$1,603 in 2002. At June 30, 2004, the minimum future lease commitments, including vacant facilities, under noncancellable leases payable over the remaining lives of the leases, net of sublease rentals, are as follows:

<u>Year Ending</u> <u>June 30,</u>	<u>Minimum</u> <u>Future Lease</u> <u>Commitments</u>
2005	\$1,627
2006	840
2007	66
2008	<u>18</u>
Total minimum lease payments	<u>\$2,551</u>

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

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Note 12: Profit-Sharing Plan

We maintain a deferred profit-sharing plan under which substantially all full-time employees are eligible to participate. The profit-sharing plan consists of a cash distribution and a contribution to our 401(k) program. Profit-sharing contributions are determined annually at the discretion of the Board of Directors. We also maintain a 401(k) tax deferred payroll deduction program and an Employee Stock Ownership Program. Under the 401(k) program, employees may contribute a tax-deferred amount of up to 15% of their compensation, as defined. We may contribute to the 401(k) program an amount determined annually at the discretion of the Board of Directors. Under the Employee Stock Ownership Program, we may, at the discretion of the Board of Directors, contribute our own stock or contribute cash to purchase our own stock. The purchased stock's fair market value can not exceed the maximum amount of employee stock ownership credit as determined under Section 416 of the Internal Revenue Code. Our contribution expenses related to the plans for the years ended June 30, 2004, 2003, and 2002, amounted to \$1,186, \$359, and \$476, respectively.

Note 13: Stock Compensation Plans

As of June 30, 2004, we have three stock-based compensation plans, which are described below (see note 14). In accordance with SFAS No. 123, a table illustrating the effect on net earnings (loss) per share as if the Black-Scholes fair value method had been applied to all stock options is presented in note 1.

The fair value of these options at the date of grant was estimated with the following weighted-average assumptions for 2004, 2003 and 2002:

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>	<u>June 30,</u> <u>2002</u>
Risk free rate of interest	3.9%	2.9%	4.3%
Dividend yield	0%	0%	0%
Volatility factor	80%	74%	76%
Expected life of option	4.5 years	4.5 years	4.5 years

Weighted average fair values at date of grant for options granted during fiscal 2004, 2003, and 2002 were \$6.55, \$3.86, and \$7.91, respectively.

On June 26, 2001, the Board of Directors granted a warrant to purchase 25,000 shares of our common stock to the Zetetic Institute, a non-profit organization that provides assistance to us in connection with certain research and development activities. The warrant has an exercise price of \$18.64 per share, the closing price of the common stock on the date of the grant, and will vest, in equal annual increments, over the four-year period following the date of grant.

Note 14: Stock Option Plans

Employee Stock Option Plan

The Zygo Corporation Amended and Restated Non-Qualified Stock Option Plan permitted the granting of non-qualified options to purchase a total of 4,850,000 shares (adjusted for splits) of common stock at prices not less than the fair market value on the date of grant. There are no shares available for future grant under this plan, as the Plan expired on September 3, 2002.

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Options generally become exercisable at the rate of 25% of the shares each year commencing one year after the date of grant.

	June 30, 2004	
	Shares	Weighted Average Exercise Price
Outstanding at beginning of year	1,486,426	\$36.338
Granted	—	\$ —
Exercised	(89,101)	\$ 7.607
Expired or canceled	(46,653)	\$56.853
Outstanding at end of year	1,350,672	\$37.525
	June 30, 2003	
	Shares	Weighted Average Exercise Price
Outstanding at beginning of year	1,950,719	\$44.527
Granted	247,875	\$ 6.538
Exercised	(34,124)	\$ 1.993
Expired or canceled	(678,044)	\$50.730
Outstanding at end of year	1,486,426	\$36.338
	June 30, 2002	
	Shares	Weighted Average Exercise Price
Outstanding at beginning of year	1,778,308	\$50.223
Granted	325,075	\$12.870
Exercised	(2,125)	\$10.425
Expired or canceled	(150,539)	\$44.774
Outstanding at end of year	1,950,719	\$44.527

Non-Employee Director Stock Option Plan

The Zygo Corporation Amended and Restated Non-Employee Director Stock Option Plan permits the granting of non-qualified options to purchase a total of 620,000 shares (adjusted for splits) of common stock at prices not less than the fair market value on the date of grant. Under the terms of the Plan, as amended on September 24, 1999, each new non-employee director (other than a person who was previously an employee of the Company or any of its subsidiaries) was granted options to purchase 8,000 shares of common stock, generally, on his or her first day of service as a non-employee director; and each other non-employee director was granted options to purchase 3,000 shares of common stock on an annual basis. All options are fully exercisable on the date of grant and have a 10-year term. The Plan, as amended, will expire on November 17, 2009. There are 99,000 shares available for future grant under the plan as of June 30, 2004. The Company does not intend to grant further options under the Non-Employee Director Stock Option

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June 30, 2004, 2003, and 2002

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Plan. The Company granted stock options in fiscal 2004 to non-employee directors from the 2002 Equity Incentive Plan.

	<u>June 30, 2004</u>	
	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at beginning of year	226,000	\$13.744
Granted	—	—
Exercised	(107,000)	\$ 2.000
Expired or canceled	<u>(44,000)</u>	<u>\$37.332</u>
Outstanding at end of year	<u>75,000</u>	<u>\$16.662</u>
	<u>June 30, 2003</u>	
	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at beginning of year	195,000	\$14.880
Granted	34,000	\$ 6.559
Exercised	(3,000)	\$ 6.150
Expired or canceled	—	\$ —
Outstanding at end of year	<u>226,000</u>	<u>\$13.744</u>
	<u>June 30, 2002</u>	
	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at beginning of year	182,000	\$13.996
Granted	23,000	\$16.276
Exercised	(10,000)	\$ 2.000
Expired or canceled	—	\$ —
Outstanding at end of year	<u>195,000</u>	<u>\$14.880</u>

2002 Equity Incentive Plan

The Zygo Corporation 2002 Equity Incentive Plan permits the granting of incentive stock options, non-qualified stock options, or restricted stock to purchase a total of 1,500,000 shares of common stock. The exercise price per share of common stock covered by an option may not be less than the par value per share on the date of grant, and in case of an incentive stock option, the exercise price may not be less than the fair market value per share on the date of grant. The Plan will expire on August 27, 2012. The Board of Directors may also amend the Plan to authorize the grant of other types of equity based awards, without further action by our stockholders. Non-employee directors are now granted options to purchase 6,000 shares of common stock on an annual basis and each new non-employee director is granted options to purchase

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12,000 shares of common stock, generally, on their first day of service. These options generally vest over a four year period in quarterly increments.

	<u>June 30, 2004</u>	
	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at beginning of year	72,063	\$ 6.044
Granted	435,350	\$10.992
Exercised	(3,975)	\$ 6.518
Expired or canceled	<u>(26,125)</u>	<u>\$ 9.516</u>
Outstanding at end of year	<u>477,313</u>	<u>\$10.363</u>
	<u>June 30, 2003</u>	
	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at beginning of year	—	\$ —
Granted	72,163	\$6.044
Exercised	—	\$ —
Expired or canceled	<u>(100)</u>	<u>\$6.051</u>
Outstanding at end of year	<u>72,063</u>	<u>\$6.044</u>

The following table summarizes information about all fixed stock options outstanding at June 30, 2004:

<u>Range of Exercise Prices</u>	<u>Options Outstanding</u>			<u>Options Exercisable</u>	
	<u>Number Outstanding as of June 30, 2004</u>	<u>Weighted Average Remaining Contractual Life</u>	<u>Weighted Average Exercise Price</u>	<u>Number Exercisable as of June 30, 2004</u>	<u>Weighted Average Exercise Price</u>
\$ 2.00–\$ 2.00	4,000	0.2	\$ 2.00	4,000	\$ 2.00
\$ 5.20–\$ 7.67	326,395	7.8	\$ 6.50	119,063	\$ 6.63
\$ 7.90–\$11.75	521,125	7.4	\$10.20	190,075	\$10.55
\$12.23–\$18.00	318,425	7.3	\$14.02	190,283	\$14.15
\$18.37–\$27.00	226,547	6.2	\$19.02	176,080	\$19.10
\$28.22–\$40.38	8,125	4.6	\$33.28	6,975	\$32.83
\$42.44–\$63.44	55,300	4.2	\$45.63	54,000	\$45.61
\$64.63–\$90.81	<u>443,068</u>	<u>6.0</u>	<u>\$85.42</u>	<u>337,491</u>	<u>\$85.43</u>
<u>\$ 2.00–\$90.81</u>	<u>1,902,985</u>	<u>6.9</u>	<u>\$29.88</u>	<u>1,077,967</u>	<u>\$37.46</u>

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The following table summarizes information about all fixed stock options outstanding at June 30, 2003:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding as of June 30, 2003	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable as of June 30, 2003	Weighted Average Exercise Price
\$ 2.00–\$ 2.00	141,000	1.2	\$ 2.00	141,000	\$ 2.00
\$ 5.20–\$ 7.67	361,038	9.1	\$ 6.48	46,000	\$ 6.87
\$ 7.90–\$11.75	214,000	5.5	\$10.51	189,513	\$10.56
\$12.23–\$18.00	255,418	7.7	\$13.63	103,706	\$14.68
\$18.64–\$27.38	267,883	6.8	\$19.97	166,040	\$20.62
\$28.22–\$40.38	8,475	7.4	\$32.10	4,625	\$32.09
\$42.44–\$63.44	54,750	6.6	\$45.50	39,950	\$45.29
\$64.63–\$90.81	481,925	7.0	\$85.23	252,968	\$85.17
<u>\$ 2.00–\$90.81</u>	<u>1,784,489</u>	<u>6.8</u>	<u>\$32.24</u>	<u>943,802</u>	<u>\$32.90</u>

Note 15: Employee Stock Purchase Plan

In November 2000, we adopted a non-compensatory Employee Stock Purchase Plan (“ESPP”). Under the ESPP, employees who elect to participate have the ability to purchase common stock at a 15% discount from the market value of such stock. The ESPP permits an enrolled employee to make contributions to purchase shares of common stock by having withheld from his or her salary an amount between 1% and 10% of compensation. The total number of shares of common stock that may be issued under the ESPP is 500,000. At June 30, 2004 and 2003, we had withheld \$467 and \$382, respectively, for the purchases of shares under this plan; and in July 2004 and 2003, issued shares of common stock of approximately 35,000 and 43,000, respectively.

Note 16: Income Taxes

Total income tax expense (benefit) for each year is as follows:

	Fiscal Year Ended June 30,		
	2004	2003	2003
Earnings (loss) from continuing operations	\$ 1,863	\$ 626	\$(3,652)
Discontinued TeraOptix operations	(679)	(1,614)	(3,248)
Disposal of TeraOptix	(3,425)	(5,101)	—
Amounts charged to stockholders’ equity	(578)	(282)	(389)
	<u>\$(2,819)</u>	<u>\$(6,371)</u>	<u>\$(7,289)</u>

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Income tax expense (benefit) attributable to earnings (loss) from continuing operations consists of:

	Fiscal Year Ended June 30,		
	2004	2003	2003
Currently payable:			
Federal	\$ 797	\$—	\$(3,118)
State	160	138	4
Foreign	539	724	798
	1,496	862	(2,316)
Deferred:			
Federal	1,135	(238)	(1,336)
State	(603)	2	—
Foreign	(165)	—	—
	367	(236)	(1,336)
Income tax (benefit) from continuing operations	\$ 1,863	\$ 626	\$(3,652)

Income tax refunds, net of payments, amounted to \$377, \$2,449, and \$149 in fiscal 2004, 2003, and 2002, respectively.

The total income tax expense (benefit) differs from the amount computed by applying the applicable U.S. federal income tax rate of 35% in each of the fiscal years 2004, 2003, and 2002 to earnings before income taxes for the following reasons:

	Fiscal Year Ended June 30,		
	2004	2003	2003
Computed “expected” tax expense (benefit)	\$ 2,248	\$ 931	\$(2,609)
Increases (reductions) in taxes resulting from:			
State taxes, net of federal income tax benefit	(288)	384	—
Tax exempt interest income	(4)	(5)	(29)
Export tax incentives	(111)	(81)	—
Research credit	(307)	(822)	(1,126)
Change in estimate of prior year taxes	229	—	—
Other, net	96	219	112
	\$ 1,863	\$ 626	\$(3,652)

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The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities as of June 30, 2004 and 2003 are presented below:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>
Deferred tax assets:		
Accounts receivable	\$ 240	\$ 122
Accrued liabilities	1,868	1,999
Inventory valuation	2,232	2,046
Plant and equipment	4,703	942
Intangibles	132	242
Federal, foreign and state NOLs and credits	30,405	28,325
Contributions	56	52
	39,636	33,728
Less valuation allowance	3,606	1,820
Deferred tax asset	36,030	31,908
Deferred tax liabilities:		
Prepaid expenses	(265)	(288)
Unrealized gain on marketable securities	(28)	(77)
Deferred tax liability	(293)	(365)
Net deferred tax asset	<u>\$35,737</u>	<u>\$31,543</u>

The net current deferred tax assets and net non-current deferred tax assets as recorded on the balance sheet as of June 30, 2004 and 2003 are as follows:

	<u>June 30, 2004</u>	<u>June 30, 2003</u>
Net current deferrred tax asset	\$ 3,999	\$ 5,179
Net noncurrent deferred tax asset	31,738	26,364
Net deferred tax asset	<u>\$35,737</u>	<u>\$31,543</u>

The deferred tax provisions for 2004 and 2003 do not reflect the tax benefit of \$578 and \$282, respectively, resulting from amounts charged to other comprehensive income and paid in capital, which includes \$600 from the exercise of employee stock options in 2004.

During 2003, we wrote off certain fully reserved state NOLs and credits. The write off of these deferred tax assets, along with the change in valuation allowance have been included in state income tax expense.

Management believes it is more likely than not that the remaining net deferred tax assets of \$35,737 will be realized as the results of future operations are expected to generate sufficient taxable income to do so.

At June 30, 2004, our share of the cumulative undistributed earnings of foreign subsidiaries was \$1,913. No provision has been made for U.S. or additional foreign taxes on the undistributed earnings of foreign subsidiaries because we intend to continue to reinvest these earnings. Determination of the amount of unrecognized deferred tax liability associated with these earnings is not practicable.

At June 30, 2004, we have federal, foreign, and state net operating loss carryforwards of approximately \$55,641, \$1,759, and \$51,105, respectively, and various state credit carryforwards of \$3,761, which are available to reduce income taxes in various jurisdictions through 2024. We also

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have a federal general business credit carryforward of approximately \$5,498, which is available to reduce federal income taxes, if any, through 2024. In addition, the Company also has alternative minimum tax credit carryforwards of approximately \$95, which are Available to reduce future federal regular income taxes, if any, over an indefinite period.

Note 17: Segment Reporting

We operate in two principal business segments globally: Semiconductor and Industrial. The segment data is presented below in a manner consistent with management's internal measurement of the business. Segment data for fiscal 2002 was restated to reflect our exit from the telecommunications segment.

	<u>June 30,</u> <u>2004</u>	<u>June 30,</u> <u>2003</u>	<u>June 30,</u> <u>2002</u>
Semiconductor			
Sales	\$ 67,117	\$ 59,247	\$ 37,483
Gross profit	23,805	19,601	9,909
Gross profit as a % of sales	35%	33%	26%
Industrial			
Sales	\$ 49,525	\$ 43,330	\$ 42,785
Gross profit	19,260	15,844	17,554
Gross profit as a % of sales	39%	37%	41%
Total			
Sales	\$116,642	\$102,577	\$ 80,268
Gross profit	43,065	35,445	27,463
Gross profit as a % of sales	37%	35%	34%

Separate financial information by segment for total assets, capital expenditures, and depreciation and amortization is not available and is not evaluated by the chief operating decision-maker.

Substantially all of our operating results, assets, depreciation, and amortization are U.S. based. Sales by geographic area were as follows:

	<u>Fiscal Year Ended June 30,</u>		
	<u>2004</u>	<u>2003</u>	<u>2002</u>
Americas (primarily United States)	\$ 33,937	\$ 31,093	\$37,932
Far East:			
Japan	61,067	54,690	21,200
Pacific Rim	<u>13,172</u>	<u>6,490</u>	<u>8,054</u>
Total Far East	74,239	61,180	29,254
Europe and Other (primarily Europe)	8,466	10,304	13,082
Total	<u>\$116,642</u>	<u>\$102,577</u>	<u>\$80,268</u>

Note 18: Related Party Transactions

Sales to Canon, Inc., a stockholder representing approximately 7% ownership at June 30, 2004, and Canon Sales Co., Inc., a distributor of certain of our products in Japan and a subsidiary of Canon Inc., amounted to \$57,306 (49% of net sales), \$52,773 (51% of net sales), and \$17,636 (22% of net sales), for the years ended June 30, 2004, 2003, and 2002, respectively. Selling prices of products sold to Canon, Inc. and Canon Sales Co., Inc. are based, generally, on the normal terms

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

June 30, 2004, 2003, and 2002

(Dollars in thousands, except for per share amounts)

given to distributors. Revenues generated from a development contract are recorded on a cost-plus basis. At June 30, 2004 and 2003, there was approximately, in the aggregate, \$10,913 and \$3,972, respectively, of trade accounts receivable from Canon, Inc. and Canon Sales Co., Inc.

In September 2002, we entered into a contract with Canon Inc. related to the development of certain interferometers. In March 2004 we signed a preliminary agreement to begin further add-on work, with a definitive agreement to be signed later in the fall. During fiscal 2004 and 2003, we recognized revenue in the semiconductor segment of \$16,057 and \$18,779, respectively, for the original contract and subsequent add-on work.

Note 19: Material Contracts

In May 1997, we entered into a contract with the University of California's Lawrence Livermore National Laboratory ("LLNL"), whereby we are a primary supplier of large plano optical components for the National Ignition Facility ("NIF"). In April 2001 and January 2002, we entered into related contracts with LLNL to supply additional optical components to NIF. Revenues under the NIF contract, which is presently a fixed price contract, are recorded as deliveries are made. Revenues recognized in fiscal 2004, 2003, and 2002 amounted to \$6,447, \$4,711, and \$3,834, respectively.

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARIES
SELECTED CONSOLIDATED QUARTERLY FINANCIAL DATA (UNAUDITED)

	For the Fiscal Year Ended June 30, 2004			
	September 26,	December 26,	March 26,	June 30,
(Thousands, except per share amounts)				
Net sales.....	<u>\$ 24,247</u>	<u>\$27,654</u>	<u>\$28,433</u>	<u>\$36,308</u>
Gross profit.....	<u>\$ 7,777</u>	<u>\$10,387</u>	<u>\$ 9,402</u>	<u>\$15,499</u>
Earnings (loss) from continuing operations.....	\$ (663)	\$ 928	\$ 968	\$ 3,015
Loss from discontinued operations	<u>(162)</u>	<u>(1,912)</u>	<u>(667)</u>	<u>(4,914)</u>
Net earnings (loss).....	<u>\$ (825)</u>	<u>\$ (984)</u>	<u>\$ 301</u>	<u>\$ (1,899)</u>
Basic—earnings (loss) per share:				
Continuing operations	<u>\$ (0.04)</u>	<u>\$ 0.05</u>	<u>\$ 0.05</u>	<u>\$ 0.17</u>
Discontinued operations	<u>\$ (0.01)</u>	<u>\$ (0.10)</u>	<u>\$ (0.03)</u>	<u>\$ (0.28)</u>
Net earnings (loss)	<u>\$ (0.05)</u>	<u>\$ (0.05)</u>	<u>\$ 0.02</u>	<u>\$ (0.11)</u>
Diluted—earnings (loss) per share:				
Continuing operations	<u>\$ (0.04)</u>	<u>\$ 0.05</u>	<u>\$ 0.05</u>	<u>\$ 0.17</u>
Discontinued operations	<u>\$ (0.01)</u>	<u>\$ (0.10)</u>	<u>\$ (0.03)</u>	<u>\$ (0.27)</u>
Net earnings (loss)	<u>\$ (0.05)</u>	<u>\$ (0.05)</u>	<u>\$ 0.02</u>	<u>\$ (0.10)</u>

	For the Fiscal Year Ended June 30, 2003			
	September 27,	December 27,	March 28,	June 30,
(Thousands, except per share amounts)				
Net sales.....	<u>\$ 20,409</u>	<u>\$26,310</u>	<u>\$29,010</u>	<u>\$26,848</u>
Gross profit.....	<u>\$ 7,366</u>	<u>\$ 8,995</u>	<u>\$ 9,502</u>	<u>\$ 9,582</u>
Earnings (loss) from continuing operations.....	\$ (848)	\$ 390	\$ 780	\$ 1,253
Loss from discontinued operations	<u>(11,034)</u>	<u>(228)</u>	<u>(299)</u>	<u>(584)</u>
Net earnings (loss).....	<u>\$(11,882)</u>	<u>\$ 162</u>	<u>\$ 481</u>	<u>\$ 669</u>
Basic—earnings (loss) per share:				
Continuing operations	<u>\$ (0.05)</u>	<u>\$ 0.02</u>	<u>\$ 0.04</u>	<u>\$ 0.07</u>
Discontinued operations	<u>\$ (0.63)</u>	<u>\$ (0.01)</u>	<u>\$ (0.01)</u>	<u>\$ (0.03)</u>
Net earnings (loss)	<u>\$ (0.68)</u>	<u>\$ 0.01</u>	<u>\$ 0.03</u>	<u>\$ 0.04</u>
Diluted—earnings (loss) per share:				
Continuing operations	<u>\$ (0.05)</u>	<u>\$ 0.02</u>	<u>\$ 0.04</u>	<u>\$ 0.07</u>
Discontinued operations	<u>\$ (0.63)</u>	<u>\$ (0.01)</u>	<u>\$ (0.01)</u>	<u>\$ (0.03)</u>
Net earnings (loss)	<u>\$ (0.68)</u>	<u>\$ 0.01</u>	<u>\$ 0.03</u>	<u>\$ 0.04</u>

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON
SCHEDULE II**

The Board of Directors
ZYGO CORPORATION

Under date of August 25, 2004, we reported on the consolidated balance sheets of Zygo Corporation and subsidiaries as of June 30, 2004 and 2003, and the related consolidated statements of operations, stockholders' equity and cash flows for each of the years in the three-year period ended June 30, 2004 as contained in the 2004 Annual Report to stockholders on Form 10-K. In connection with our audits of the aforementioned consolidated financial statements, we also audited the related consolidated financial statement schedule listed in the accompanying index on page F-1. This financial statement schedule is the responsibility of the Company's management. Our responsibility is to express an opinion on this financial statement schedule based on our audits.

In our opinion, this financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

KPMG LLP

Hartford, Connecticut
August 25, 2004

ZYGO CORPORATION AND CONSOLIDATED SUBSIDIARY

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

Years ended June 30, 2004, 2003, and 2002

<u>Description</u>	<u>Balance at Beginning of Period</u>	<u>Provision</u>	<u>Write-Offs</u>	<u>Balance at End of Period</u>
(Thousands of dollars)				
Year Ended June 30, 2004:				
Allowance for doubtful accounts.....	\$ 337	\$ 374	\$ 4	\$ 707
Valuation allowance on net deferred tax assets	\$1,820	\$1,786	\$ —	\$3,606
Year Ended June 30, 2003:				
Allowance for doubtful accounts.....	\$ 949	\$ 270	\$ 882	\$ 337
Valuation allowance on net deferred tax assets	\$3,803	\$ —	\$1,983	\$1,820
Year Ended June 30, 2002:				
Allowance for doubtful accounts.....	\$ 381	\$ 599	\$ 31	\$ 949
Valuation allowance on net deferred tax assets	\$1,653	\$2,150	\$ —	\$3,803

EXHIBIT INDEX

**Exhibit
Table
Number**

10.30	—Offer Letter dated February 10, 2004 between Zygo Corporation and Walter Shephard ..
21.	—Subsidiaries of Registrant
23.	—Consent of Independent Registered Public Accounting Firm
31.1	—Certification of Chief Executive Officer under Rule 13a-14(a)
31.2	—Certification of Chief Financial Officer under Rule 13a-14(a)
32.1	—Certification of Chief Executive Officer and Chief Financial Officer

February 10, 2004

Mr. Walter A. Shephard
One Quarry Run
Rockport, Massachusetts 01966

Dear Walter:

I am pleased to confirm our offer for the position of Vice President, Finance, Chief Financial Officer and Treasurer, based at our corporate headquarters in Middlefield, Connecticut. In this role you will report to Bruce Robinson, President and CEO, at a starting salary of \$195,000 per year. We consider this position to be a highly visible, challenging opportunity and are confident that you will contribute significantly to the success of Zygo Corporation.

Bonus Program:

In your role as Officer and CFO, you are eligible to participate in the Management Incentive Plan bonus (MIP), annually, worth up to 35% of your base pay. This bonus will be based on the achievement of corporate and functional goals, which will be established prior to the start of each fiscal year. Details regarding the structure and payout of the bonus will be described under separate cover.

Options:

Zygo will also grant you a Stock Option for fifteen thousand (15,000) shares of Zygo stock. This ten (10) year Stock Option will be priced at the fair market price on the date these shares are granted; this date will be as close to your start date in this position as is practicable. These Stock Options will vest over a four-year period at the rate of twenty-five (25) percent per year.

Car Allowance:

Zygo will provide a monthly automobile allowance in the amount of \$900 and a mileage reimbursement of \$.10 per mile for company use of an automobile. This car allowance is considered taxable income and therefore will have regular payroll taxes deducted.

Benefits:

As a Zygo employee, you will be eligible to participate in a number of financial benefits programs designed to enhance your earning and savings potential. These programs include Profit Sharing/401(k) Plan, Zygo Shares Plan, and our Section 125 pretax insurance premium healthcare/dependent care reimbursement program, which represent significant financial opportunities to our employees. We also offer comprehensive medical and dental plans, life and disability insurance, travel accident insurance, a tuition reimbursement program and several other significant benefit programs, as outlined in the enclosed Benefit Summary.

Relocation Benefits:

Upon acceptance of our offer, we invite you to visit Connecticut for the purpose of viewing area housing. We will provide you with expense reimbursement for two trips (15 days total in duration) to Connecticut for this purpose. We will contact our relocation specialist, Susan Redfield with Prudential Relocation and have her begin the relocation process by contacting you directly, as early as possible. Your family meal allowance of \$150 per day plus travel expenses will be reimbursed to you upon submission of appropriate receipts. Such reimbursement is subject to federal and FICA tax withholdings. These taxes will be withheld from your reimbursement check and therefore, the amount you actually receive will be less than the gross amount paid for these items.

Zygo Corporation will also assist you in your physical relocation to the Middlefield, Connecticut area. We will provide a professional mover to pack, move, and unpack your regular household goods, and move up to two automobiles. If necessary, Zygo will provide you with up to three (3) months of storage for your household items and the move out of storage. These moving/transportation costs will be billed directly to Zygo.

We will also assist in your transfer to the area by providing you with a temporary living allowance of up to \$25,000 to cover accommodations, food, car rental (if necessary), etc., that are necessary for temporary living purposes only; please contact Diana Midolo at 860-704-5108 in

Human Resources to review what is covered under this allowance if you wish to utilize these monies. These temporary living expense benefits may be obtained by submitting appropriate documentation or receipts of expense. Such reimbursements are subject to federal, state and FICA tax withholdings. These taxes will be withheld from your reimbursement check and therefore; the amounts you actually receive will be less than the gross amount paid for these items.

Additionally, you will be reimbursed for closing costs expenses up to \$10,000 (including mortgage points) and reimbursed for realtor commission fees on your IRS former residence up to 6% of the sale price.

Relocation benefits, as outlined above, are available to you for up to one year following your date of hire. Reimbursements for appropriate taxable relocation expenses will be grossed up. Zygo considers these relocation expenses to be significant and as such requires that you repay them in the event that you leave our company voluntarily within 12 months from the date of hire.

Should you come on board, please submit all relocation expense forms to Diana Midolo in Human Resources.

Change in Control

- (a) **Definition.** A "Change in Control" shall mean the occurrence of any of the following events:
- (i) Zygo Corporation is merged with or consolidated with another corporation in a transaction in which (x) Zygo is not the surviving corporation, and (y) Zygo's stockholders immediately prior to such transaction do not own at least 70% of the outstanding voting securities of the surviving corporation immediately following the transaction; or
 - (ii) Any person or entity or affiliated group of persons or entities becomes the holder of more than 51% of Zygo's outstanding shares of Common Stock.
- (b) **Payment.** If a Change in Control occurs during your employment, then your salary will continue for a six-month period.

We are excited about the prospect of your joining us as a key member of our dynamic team, and believe that you will be able to make significant contributions toward our continued success.

If you have any questions regarding the content of this offer, please feel free to give me a call at 860-704-5109. If you have any questions regarding company benefits, please contact Diana Midolo at 860-704-5108. Upon acceptance of our offer, we ask that you sign the attached, indicating your acceptance, and return it to our Human Resources Department (fax 860-347-8136). We look forward to your joining us and wish you much success and career growth at Zygo.

Sincerely,

/s/ BRUCE ROBINSON

Bruce Robinson
President & CEO
Zygo Corporation

By signing below, I hereby acknowledge acceptance of the position of Vice President, Finance, Chief Financial Officer and Treasurer, and accept the terms of this offer, as outlined in the offer letter dated February 10, 2004. I further acknowledge and understand that this document shall not be construed as a contract of employment between myself and Zygo Corporation.

Signed:

/s/ WALTER A. SHEPHARD
Walter A. Shephard

February 11, 2004
Date

Start Date: February 27, 2004

SUBSIDIARIES OF ZYGO CORPORATION (DELAWARE)

Technical Instrument Company (California)
100% owned by Registrant (effective as of August 8, 1996)

Syncotec Neue Technologien und Instrumente GmbH
100% owned by Technical Instrument Company (effective as of September 1, 1997)

NexStar Corporation (Colorado)
100% owned by Registrant (effective as of September 12, 1996)

TechniStar Corporation (Delaware)
25% owned by NexStar Corporation

Sight Systems, Inc. (California)
100% owned by Registrant (effective as of August 19, 1997)

Zygo TeraOptix, Inc. (Delaware)
100% owned by Registrant (effective as of May 5, 2000)

Zygo KK
100% owned by Registrant (effective as of October 1, 1999)

Zygo PTE
100% owned by Registrant (effective as of January 1, 1998)

ZygoLOT GmbH
60% owned by Registrant (effective as of October 2, 1999)

Six Brookside Drive (Connecticut)
100% owned by Registrant (effective as of January 9, 1998)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
ZYGO CORPORATION:

We consent to incorporation by reference in Registration Statements No. 333-44333, No. 33-62087, No. 33-57060, No. 33-20880, and No. 33-34619 on Forms S-8 of Zygo Corporation of our reports dated August 25, 2004, with respect to the consolidated balance sheets of Zygo Corporation and subsidiaries as of June 30, 2004 and 2003 and the related consolidated statements of operations, stockholders' equity, and cash flows and related schedule for each of the years in the three-year period ended June 30, 2004, which reports appear in or are incorporated by reference into the June 30, 2004 Annual Report on Form 10-K of Zygo Corporation. Our reports refer to a change in the method of accounting for the impairment and disposal of long-lived assets effective July 1, 2002 in accordance with Statement of Financial Accounting Standards No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets."

KPMG LLP

Hartford, Connecticut
September 9, 2004

**CERTIFICATION OF DISCLOSURE
IN THE REGISTRANT'S ANNUAL REPORT**

I, J. Bruce Robinson, certify that:

1) I have reviewed this annual report on Form 10-K of Zygo Corporation;

2) Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3) Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

b) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and c) disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 13, 2004

/s/ J. Bruce Robinson

J. Bruce Robinson
Chairman, President, and Chief Executive Officer

**CERTIFICATION OF DISCLOSURE
IN THE REGISTRANT'S ANNUAL REPORT**

I, Walter A. Shephard, certify that:

- 1) I have reviewed this annual report on Form 10-K of Zygo Corporation;
- 2) Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
- 4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and
 - c) disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 13, 2004

/s/ WALTER A. SHEPHARD
Walter A. Shephard
Vice President, Finance, Chief Financial Officer

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, J. Bruce Robinson, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Zygo Corporation on Form 10-K for the fiscal year ended June 30, 2004 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Zygo Corporation.

A signed original of this written statement required by Section 906 has been provided to Zygo Corporation and will be retained by Zygo Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

By: /s/ J. BRUCE ROBINSON
Name: J. Bruce Robinson
Title: Chairman, President and Chief Executive
Officer

I, Walter A. Shephard, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Zygo Corporation on Form 10-K for the fiscal year ended June 30, 2004 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Zygo Corporation.

A signed original of this written statement required by Section 906 has been provided to Zygo Corporation and will be retained by Zygo Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

By: /s/ Walter A. Shephard
Name: Walter A. Shephard
Title: Vice President, Finance and Chief
Financial Officer

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