

ADE CORP  
Form 10-K  
July 29, 2002

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## 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 April 30, 2002

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 0-26714

## ADE CORPORATION

(Exact name of registrant as specified in its charter)

Massachusetts

(State of incorporation)

04-2441829

(I.R.S. Employer Identification No.)

80 Wilson Way  
Westwood, Massachusetts

(Address of principal executive offices)

02090

(Zip Code)

(781) 467-3500

(Registrant's telephone number, including area code)

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

Common Stock, \$0.01 par value

(Title of class)

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 the 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.

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As of July 25, 2002, there were outstanding 13,687,400 shares of common stock, \$.01 par value per share. The aggregate market value of shares of common stock held by non-affiliates of the registrant, based upon the last sale price for such stock on that date as reported by Nasdaq, was approximately \$66,930,000.

### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for the 2002 Annual Meeting of Stockholders are incorporated by reference into Part III.

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## PART I

### ITEM 1. BUSINESS

*Except for historical information, the following description of ADE's business contains forward looking statements which involve risks and uncertainties. The outcome of the events described in these forward looking statements is subject to risks and actual results could differ materially. The sections entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business" as well as those discussed elsewhere in this annual report contain a discussion of some of the factors that could contribute to these differences. Any forward-looking statements are made as of the date of this report and we assume no obligation to update any such forward-looking statements or to update the reasons why actual results could differ materially from those anticipated in such forward-looking statements.*

ADE Corporation, incorporated in 1967, is engaged in the design, manufacture, marketing and service of production metrology and inspection systems for the semiconductor wafer, semiconductor device, data storage and optics manufacturing industries. Our systems analyze and report product quality at critical manufacturing process steps, sort wafers and disks, and provide manufacturers with quality certification data upon which they rely to manage processes and accept incoming material. Semiconductor wafer, device and data storage manufacturers use our systems to improve yield and capital productivity.

ADE operates three major business segments, the Semiconductor Systems Group ("SSG"), ADE Phase Shift ("PST") and ADE Technologies ("ATI"). The Semiconductor Systems Group manufactures multifunctional semiconductor metrology and automation systems and optical wafer defect inspection equipment used to detect particles and other defects on silicon wafer surfaces. ADE Phase Shift manufactures high performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics industries. ADE Technologies manufactures high precision magnetic characterization and non-contact dimensional metrology gaging systems primarily for the data storage industry.

ADE's strategy is to provide our customers with complete metrology solutions for optimization of their processes, workflow, and engineering. We accomplish these goals by offering a broad range of advanced metrology and inspection systems, a variety of factory automation and control options and software analysis packages. ADE designs focus on a modular approach, which targets the lowest cost of ownership for a system at any given process step. Over the past fiscal year, ADE has adhered to its strategy and has introduced a number of new products, which are included in the discussion that follows.

#### Products

Our products have evolved from single instruments used in off-line engineering analysis to full, 100% online automated metrology solutions throughout the wafer, semiconductor device and hard disk drive manufacturing processes. Our systems are targeted to deliver the high throughput, reliability, information and analysis necessary to meet the demands of increasingly complex and time-sensitive manufacturing processes.

Our principal products in the semiconductor wafer, semiconductor device and data storage device industries are described below. All of our metrology and inspection systems have the capability to record, print and store measurement data locally, as well as distribute the data via a network for yield and process management and offline analysis.

*Semiconductor Industry Products*

*Wafer Dimensional Measurements*

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**WaferSight System.** A new wafer flatness and shape metrology tool for 300mm and advanced 200mm production, the WaferSight measurement precision allows wafer and device manufacturers to meet ITRS

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metrology requirements down to the 35nm generation. Utilizing optical technologies, the WaferSight system extends ADE's market presence in wafer dimensional metrology, leveraging 30 years of industry leadership and our knowledge of process and market requirements.

**Advanced Flatness System (AFS).** The AFS system advances ADE's established capacitance technology to 130nm and 100nm semiconductor wafer production. Customers involved with 300mm and 400mm wafers are using this measurement platform to characterize wafer dimensional properties. The wafer is handled only by the edges, thereby minimizing the possibility of any surface contamination or damage due to contact with the polished surfaces of the wafer. AFS measurement systems are the dominant solution for qualification of 300mm silicon, epi and SOI wafer flatness and shape.

**UltraGage® Series.** The UltraGage series of products are automated benchtop metrology systems containing a single measurement module which is capable of making any one of several measurements, including wafer shape, flatness, thickness and stress on silicon, epi, SOI, or patterned wafers. The UltraGage series includes systems optimized to handle the ultra-thin processed wafers used in the manufacture of devices for smart cards and advanced electronic packages.

**UltraScan® Series.** The UltraScan series of products are high throughput, 150mm to 200mm inline production systems that perform measurement and sorting at various stages of the wafer manufacturing and device fabrication processes. UltraScan systems measure wafer thickness, flatness, shape, and other mission-critical dimensional properties and can be integrated with factory automation systems.

**WaferCheck® Series.** The WaferCheck series of products are flexible, modular systems capable of automatically characterizing, inspecting and sorting semiconductor wafers. These systems measure thickness, flatness, shape, conductivity type, and resistivity on raw and processed wafers and provide high speed sorting. These systems typically operate in a Class 1000 cleanroom environment and provide nondestructive inline sorting and classification capability on all wafer diameters up through 200mm.

**NanoMapper .** The NanoMapper system is a 200mm and 300mm bridge tool that measures and analyzes nanotopography, front surface non-planar topographic wafer features, on semiconductor wafers using proprietary noncontact optical interference techniques. Nanotopography detects a variety of process-induced defects and process control failures in silicon wafer and device manufacturing processes. Improved control of these defects can increase yields and reduce costs for 130nm and 100nm devices by improving CD control, shallow trench isolation (STI), and chemical mechanical planarization (CMP) results. The NanoMapper system was the winner of the prestigious R&D 100 award, presented by R&D Magazine, in the year 2000 and is the standard for 300mm nanotopography characterization.

### *Wafer Surface Inspection Systems*

**Advanced Wafer Inspection System (AWIS).** The AWIS system is a fully automated inspection tool designed to handle the advanced surface inspecting requirements of 200mm and 300mm polished, epi and SOI wafers for high volume wafer production. This system reduces the need for manual inspection of the wafers. The AWIS system is available with an edge-gripping wafer handling system and operates in a Class 10 or better clean room. The system meets the requirements for the 100nm design rules for high speed sorting applications.

**CR8X Series.** The CR8X series products are high throughput, 200mm inline production systems that are used to detect, measure and characterize particles and other defects on wafer surfaces and provide process analysis and control information for the wafer manufacturer.

**Surface Quality Monitor (SQM).** The SQM feature on our CR8X wafer inspection systems adds the characterization of the variations in nanotopography on the wafer surface to the surface defect characterization family. Nanotopography has become a leading technology requirement for yield

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optimization for design rules at 180nm and below. The integration of this inspection for nanotopography is a cornerstone in ADE's productivity enhancement program for our customers.

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**AcuDep System.** ADE has signed an exclusive worldwide distribution agreement for the AcuDep Advanced Particle Deposition Systems manufactured by The Scatter Works, Inc. The AcuDep 300 system complements ADE's full line of wafer surface inspection and topology measurement systems by improving process control while reducing manufacturing costs for semiconductor device, wafer and disk manufacturers.

### *Film Mapping and Inspection Systems*

**Films Inspection Tool (FIT).** The FIT is a new tool for the reliable inspection of unpatterned films, ranging from dielectrics through metals. The introduction of the films inspection tool marks ADE's strategic entry into the front-end device metrology market. The film system's superior performance is the result of successfully deploying our intellectual property onto existing hardware and software platforms to meet new metrology requirements and achieve total customer satisfaction.

**EpiScan Series.** The EpiScan series of products are high-speed tools used to measure and map the thickness of certain film layers, sometimes referred to as epi layers that are applied to wafers. The EpiScan system is based on advanced FTIR optical technology, which is licensed from MKS Instruments Inc., On-Line Products.

**AcuMap Series.** AcuMap systems are full-wafer film thickness monitoring tools for SOI, CMP and photolithography applications. AcuMap systems provide high-speed full wafer mapping with high data density on various thin films for production process development and control. The industry standard for high-speed SOI film mapping, AcuMap systems have shown excellent results in measuring leading edge ultra-thin SOI layers for fully depleted CMOS applications.

### *Software Products*

**WaferAnalyzer .** This offline software package increases productivity in a wafer production polishing area by automating the advanced analytical capability for wafer inspection data. In beta tests this software has proven to significantly reduce the process engineering man-hours required for process management and characterization and to add increased flexibility in analysis. The software is modularly priced based on the number of users and equipment connections.

**InfoTools Software Suite.** InfoTools products are offline productivity enhancing applications for ADE's dimensional measurement systems. The InfoTools suite includes ReportTools for wafer data reprocessing and RecipeTools for centralized process recipe management.

### *Disk Industry Products*

#### *Proprietary ADE Magnetic Technology*

**Vibrating Sample Magnetometers (VSMs).** The VSM is used to measure the magnetic properties of the broad-spectrum of magnetic materials. Although we supply the magnetics community with high performance VSMs, our flag-ship product is the fully-automated X9 designed for the HDD industry, with applications in both the development and production of TMR and GMR recording heads. The VSM product line is comprised of several models, varying in maximum field strength and sensitivity. Most of the systems can be configured to characterize anisotropy in magnetic materials, the understanding of which is rapidly becoming critical in the development of magnetic disks, recording heads, and MRAM. Specifically developed for this purpose is the Model 10, an advanced Vector VSM for research on directional properties of magnetic materials.

**S150/200 Wafer Mapping System (WMS).** The WMS rapidly and automatically creates 3-dimensional maps of the magnetic properties of entire wafers or coupons used to fabricate advanced GMR and TMR heads for disk drives, as well as the tunnel junctions of MRAM wafers. The WMS provides feedback to the design and fabrication process of GMR and TMR heads and TMR-based MRAM wafers. The system, which can be configured as a fully automated metrology system with a wafer handler and pre-aligner, and an MR measurement option, allows customers to manage process uniformity in order to improve overall yield.

**V300 Wafer Mapping System.** The V300 is the latest generation of Wafer Mapping Systems and is designed specifically to address the emerging MRAM market. The V300 features a proprietary Quadrupole magnet design with active field control that allows MRAM developers to simulate the action of the MRAM device early in the process control of the magnetic films. Using a patent pending Vector Kerr capability, the V300 is suitable for the most advanced MRAM development as well as in-depth studies of the uniformity of the TMR stacks at the sheet film level.

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**M2 DiskMapper** . The M2 DiskMapper system is an inline fully automated noncontact measurement system that maps the variation of the most critical magnetic parameters over the surface of recording disks. The data provided by the tool is used to directly control the sputtering process. The M2 DiskMapper can be configured to handle multiple form factors.

**X9 Magnetic Properties Analysis System (X9 MPAS)**. The X9 MPAS is a fully automated system designed to make an in depth analysis of GMR style head coupons. Based upon the Model 10 VSM, the X9 automatically loads, measures and returns wafer coupons, repeatably measuring layer thicknesses to less than 0.2 NiFe equivalent Angstroms. In addition to layer thickness the X9 measures all Hysteresis and transport properties in a single step and has replaced several pieces of equipment in the process control of advanced head production.

### *Proprietary ADE Capacitance Technology*

**MicroSense® II**. As the disk drive industry moves to ever-quieter fluid bearing motors there is an increasing requirement to measure non-repetitive run-out to achieve higher track densities. The MicroSense II product line has been widely adopted by disk drive motor manufacturers. It has also achieved success in specialized applications such as fast tool servo control outside of the disk drive market.

**Passive Gaging**. ADE's passive capacitive gaging systems make use of a design that is fundamentally different from the MicroSense II products. These passive capacitance gages are incorporated in a number of ADE products that serve the hard disk, compact disk and semiconductor markets. ADE Passive Gages are increasingly being used by other semiconductor capital equipment makers on an OEM basis to solve difficult servo control problems where high precision and high stability are required.

**Motor Test Systems**. Utilizing the recently introduced Spincheck HR motor test system with ADE's noncontact dimensional gaging provides disk motor manufacturers with motor shaft runout measurements in both time and frequency domains. This software allows users to define sophisticated pass/fail criteria for production testing.

### *Proprietary ADE Interferometer Based Tools*

**MiniFIZ Series of Interferometers**. MiniFIZ series is a family of laser-based Fizeau interferometers that test the surface flatness, curvature and other shape characteristics of polished precision components such as optical mirrors, lenses and computer disks. The MiniFIZ interferometers provide interactive 3D modeling, statistical reporting, and user-selectable production and research modes. The product can be combined with full robotic automation to meet the needs of disk media and substrate process control.

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**MicroXAM Optical Profilers**. These 3D optical profilers are interference microscopes which produce measurements of the shape, density and distribution of laser bumps in the laser-textured area of hard disks. The MicroXAM optical profiler is the industry standard for measuring the laser-textured area of hard disk media. Other configurations of MicroXAM products measure disk dub-off. Dub-off is the transition between the top (usable) surface of the disk, and the rough edge of the disk. MicroXAM systems, consequently, are used widely by disk media manufacturers and by hard drive manufacturers.

## **Products in Development**

In order to maintain our technology leadership, we continue to introduce new products.

**Series 4800, 5800 and Spincheck HR**. Our entire line of gaging products undergo continuous product improvement to keep pace with the rapid developments in the HDD and semiconductor equipment markets. The performance of the 5800 series products is being enhanced to meet the ever-increasing demands of disk drive motor manufacturers as they develop the next generation fluid dynamic bearing motors. The 4800 series gage capabilities are being expanded to perform critical positioning of optics or targets in high vacuum applications to serve the needs of semiconductor capital equipment manufacturers. New data processing capabilities are being added to the Spincheck HR as customers require additional insight into FDB motor performance and qualification.

**Polar Kerr Mapping System**. With the advances in areal density of HDD media continuing at a rapid pace, the time when the current technology yields to the next generation of media is fast approaching. Leading edge media developers are now working on replacing longitudinal media with perpendicular in which the magnetic bits are orthogonal to the plane of the disk. The Polar Kerr Mapping System is designed to characterize this new media segment in development and move seamlessly into production as perpendicular media volumes increase. It handles the new media directly from cassette and leverages ADE's years of Kerr experience.

## **Technology**

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Our metrology and inspection products use our proprietary non-contact capacitive, optical, eddy-current, interferometric and magnetic technologies to measure the dimensional, electrical magnetic and surface characteristics of semiconductor wafers and devices and computer hard disks and disk drives.

### *Dimensional Technology*

Our non-contact capacitive gaging technology, which is the subject of a series of patents, is used to measure the dimensional parameters (thickness, flatness, shape) of semiconductor wafers, computer hard disks and other objects. This technology is based on the measurement of the capacitance between a measurement probe and the surface of the object. The capacitance varies as a precise function of the distance between the probe and the object being measured. For example, in the measurement of a semiconductor wafer, two probes, one on each side of the wafer, map both wafer surfaces simultaneously. Electronic circuitry converts the probe capacitance signal into distance signals, which are translated by our software to produce information concerning the wafer's thickness, flatness and shape.

### *Surface Inspection Technology*

We use patented optical technology to detect microscopic surface defects and non-uniformity. A finely focused laser beam is scanned over the surface of the wafer. Surface non-uniformities, particles or defects cause some of the beam's energy to deflect or scatter. Sensitive detectors quantify the scattering signals, which are translated by our software to produce information about particles, micro scratches, haze, nanopopography and other process-induced defects on the wafer surface. Although the principles of our optical technology are similar to those used by other manufacturers, we believe our theoretical modeling

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and patented optical engineering and proprietary software result in products having a superior combination of high sensitivity and throughput.

### *Interferometric Technology*

Optical interference is a technique used to produce surface images of alternating bright and dark images, called fringes, which correspond to variations in surface height. Using multiple reflection, optical interference can precisely measure variations in the height of a surface as small as a few atomic layers. Our software provides the ability to create and analyze these three-dimensional surface maps, comprised of millions of data points, which are used by our customers in advanced process development and in production control.

### *Fourier Transform Infrared Spectroscopy Technology*

Fourier Transform InfraRed (FTIR) Spectroscopy Technology has classically been used in a broad range of laboratory applications for examining various technical properties of materials and chemicals. MKS Instruments Inc., On-Line Products, has licensed its Fourier Transform Infrared Spectroscopy Technology to us for incorporation into metrology tools for the wafer market. We integrate this technology to provide the increasing precision and accuracy needed to support ever-tightening epi specifications.

### *Magnetics Characterization Technology*

Our products for characterizing magnetic materials use a variety of non-contact measurement technologies including lasers (the Kerr effect), vibrating sample and torque-effect inductive sensing techniques. We believe our world-class theoretical modeling and magnetics engineering enable us to offer automated products with superior sensitivity, speed, accuracy and reproducibility.

### *Proprietary Software*

Our proprietary software analyzes and transforms the large amounts of data generated by our metrology and inspection systems to produce information about process-induced defects that supports real-time process management. The flexible design of this software permits recipe-driven reconfiguration of these products to serve new applications with a minimum of hardware or software redesign or development. Our software is designed to integrate our various metrology functions with one another while implementing industry standards for integrating our products with the manufacturing facility's information systems. We currently have applied for patent protection on unique features of our software.

## **Marketing, Sales and Customer Support**

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We market and sell our semiconductor metrology and inspection products through our direct sales force, distributors and independent sales representatives. We market and sell our metrology and inspection products in the United States, Europe and Malaysia through full-time salespersons located throughout the United States in Milpitas, Dallas, Portland and Boston as well as in the United Kingdom, Germany and Malaysia. During the past fiscal year, approximately 49% of our revenue was derived through our direct sales organization. Our direct sales force is supported by applications engineers in selected field offices and in each of our manufacturing locations.

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Sales of wafer dimensional systems, capacitive probes, and disk industry products in Japan are supported by Japan ADE Limited, a joint venture between ADE and Kanematsu Electronics, Ltd. Sales of surface inspection products are provided in Japan by a separate distributor. We also sell our semiconductor metrology and inspection products in Israel, South Korea, Singapore, Taiwan, and the People's Republic of China through independent sales representatives. We market and sell our non-contact capacitive, dimensional metrology and magnetic characterization data storage products in the United States through three full-time salespersons and internationally through distributors and sales representatives. We market and sell our interferometric based surface metrology products through two full-time salespersons and internationally through distributors and sales representatives.

The selling process for our products frequently involves participation by sales, marketing and customer support personnel. Customers and potential customers often evaluate our products by sending semiconductor and device wafers to us for measurement or by installing demonstration equipment at their facilities. We maintain demonstration equipment at our manufacturing sites and at some of our sales offices for this purpose. We plan to continue our investment in demonstration equipment to accelerate the introduction of products. Our marketing activities also include participation in international standards organizations, trade shows, the publication of articles in trade journals, industry forums and the distribution of sales literature.

We believe that our strong commitment to service is essential, based on the growing complexity of the equipment used in the semiconductor manufacturing process. This complexity makes it difficult for semiconductor wafer and device manufacturers to maintain an internal workforce sufficiently skilled and specialized to support the disparate equipment and technologies used in their processes. We have customer support centers in Boston, Dallas, Milpitas, Vancouver and Tucson in the United States; Milton Keynes, England; Munich, Germany; and Kuala Lumpur, Malaysia. In addition, our distributors and sales representatives provide customer support. We also offer training programs and maintenance contracts for our customers. We typically offer warranties of twelve months covering the performance and reliability of our products.

### Customers

Our customers include the leading semiconductor wafer manufacturers and many of the leading semiconductor device, data storage and disk drive manufacturers throughout the world. Historically, a relatively limited number of customers, comprising a large share of the market, have accounted for a substantial portion of our revenue. In fiscal years 2002, 2001 and 2000, sales to our top five customers accounted for approximately 54.2%, 46.1% and 45.8% of our revenue, respectively. During fiscal year 2002, one of our customers, Japan ADE Ltd., accounted for 28.3% of our revenue. During the past fiscal year, approximately 68.9% of our revenue was derived from sales made to wafer manufacturers, with the remainder derived from sales to manufacturers of semiconductor devices, data storage and disk drives and semiconductor equipment. Our principal customers are as follows:

#### Semiconductor Wafer Manufacturers

MEMC Electronic Materials  
Shin-Etsu Handotai  
Siltron  
SUMCO  
Wacker Siltronic  
Okmetic  
SOITEC  
Kinik

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#### Semiconductor Device Manufacturers

Intel  
TSMC

UMC  
SMIC  
Samsung  
PROMOS

#### **Data Storage and Disk Drive Manufacturers**

IBM  
Seagate Technology

#### **Research and Development**

The market for semiconductor wafer and device, data storage and disk drive equipment is characterized by rapid technological advances and product innovations. Our research and development efforts are designed to enhance our current products and develop new products to keep pace with technological developments and constantly evolving customer requirements. We devote significant resources to programs directed towards developing new and enhanced products, as well as developing new applications for existing products.

In fiscal years 2002, 2001 and 2000, our research and development expenditures were \$22.8 million, \$22.6 million and \$21.9 million, respectively, representing 27.9%, 22.5% and 35.0% of revenue. Research and development expenditures consist primarily of salaries, project materials, consulting fees and other costs associated with our ongoing research and development efforts.

Industry standards organizations, such as Semiconductor Equipment and Materials International and American Standards for Testing and Materials are pivotal in defining the test methods, measurement parameters and specifications governing commercial transactions within the semiconductor industry. We maintain a significant presence on standards committees of these two organizations and other international standards organizations. We believe that our involvement with these organizations has helped to ensure that our new products conform to industry standards.

#### **Backlog**

Backlog decreased to approximately \$21.2 million at April 30, 2002 from approximately \$53.6 million at April 30, 2001. This decrease in backlog is primarily attributable to a decrease in demand for capital equipment in the semiconductor industry since the beginning of the current industry downturn, which began to impact the Company near the end of fiscal year 2001. We schedule production based on firm customer commitments and anticipated orders during the planning cycle. Backlog is comprised of written purchase orders accepted from customers to whom we expect to ship the related product or provide service within the following twelve months. Customers may cancel or delay orders with limited or no penalty. We do not believe that the level of backlog is an accurate indicator of our performance in future periods.

#### **Manufacturing**

Our principal manufacturing activities take place at our ISO 9001-registered facility in Westwood, Massachusetts, where semiconductor dimensional metrology systems and semiconductor optical surface inspection equipment are manufactured. Our dimensional metrology gaging products and magnetic characterization products for the data storage industry are manufactured in Newton, Massachusetts. Our interferometric based surface metrology products are manufactured in Tucson, Arizona. Our optical and infrared based thin film thickness metrology products are manufactured in Bethel, Connecticut.

Manufacturing activities consist primarily of assembling and testing components and subassemblies, which are supplied by third party vendors and then integrated into our finished products. Many of the components and subassemblies are standard products, although certain items are made to our specification. We manufacture many of our semiconductor metrology and inspection systems in a cleanroom environment.

#### **Patents and Other Intellectual Property Rights**

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. We believe that our success depends to a large extent upon innovation, technological expertise and distribution strength. We enter into standard confidentiality agreements with our employees and consultants and seek to control access to and distribution of our proprietary information. Despite these precautions, it may be possible for a third party to copy or otherwise obtain and use our



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products or technology without authorization or to develop similar technology independently. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries.

As of July 25, 2002, we hold 35 United States patents and 18 foreign patents covering existing and potential products and have applied for 17 additional patents in the United States and 43 additional foreign patents. We have licensed certain patents and other intellectual property to a number of companies.

### Employees

As of April 30, 2002, we employed a total of 494 persons. Management believes that our ongoing success depends on our continued ability to attract and retain highly skilled employees. There can be no assurance that we will be successful in attracting or retaining such personnel. None of our employees are represented by a labor union, and we have experienced no work stoppages. We consider our employee relations to be good.

### EXECUTIVE OFFICERS OF THE REGISTRANT

The names, ages and positions held by our executive officers are as follows:

Chris L. Koliopoulos	49	President and Chief Executive Officer
Brian C. James	51	Executive Vice President, Treasurer and Chief Financial Officer

All executive officers are elected by the Board of Directors to serve in their respective capacities until their successors are elected and qualified or until their earlier resignations or removal.

Chris L. Koliopoulos has served as President and Chief Executive Officer of ADE Corporation and President of ADE Phase Shift, Inc. since June 2002. From 1998 to 2002, Dr. Koliopoulos served as Vice President of ADE and President of ADE Phase Shift. Dr. Koliopoulos joined ADE in June 1998 through the merger with Phase Shift Technology, Inc., where he was President and co-founder. Dr. Koliopoulos has been a Director of ADE since September 1998. Dr. Koliopoulos received a BS from the University of Rochester and an MS and PhD from the University of Arizona.

Brian C. James joined ADE in August 2000 and serves as Executive Vice President, Treasurer and Chief Financial Officer. Mr. James served as Executive Vice President and Chief Financial Officer of CCT, Inc. and as Corporate Vice President and Chief Financial Officer of The Aerostructures Corporation, both privately held investor-backed companies, prior to joining ADE. Mr. James had previously served as Group Controller for Textron Inc.'s Aerospace-Technology sector and has held various operations and financial positions with Allied-Signal and Ford Motor Company. Mr. James received a BA from the University of Vermont and an MS in finance from the University of Massachusetts.

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Robert C. Abbe, age 64, founded ADE in 1967. From that time, he served as a director of ADE and until June 20, 2002, as President and Chief Executive Officer.

In addition, during the Company's 2002 fiscal year, AK Lum, age 53, served as Vice President and General Manager of ADE Semiconductor Systems Group until November 2001. In November 2001, Mr. Lum became the Company's Vice President of Marketing and Managing Director of Asia Pacific Operations and ceased to be an executive officer. Also during the Company's fiscal year 2002, John Blaha, age 47, served as Vice President and General Manager of ADE Technologies until November 2001. In November 2001, Mr. Blaha became the Company's Corporate Director of Finance and ceased to be an executive officer. As of May 2002, Mr. Blaha is no longer employed by ADE.

### Cyclicality of Our Business

Our business depends in large part upon the capital expenditures of semiconductor wafer and device and data storage manufacturers, which in turn depend on the current and anticipated market demand for integrated circuits, products utilizing integrated circuits and systems requiring data storage, respectively. The semiconductor and data storage industries are cyclical and have historically experienced periodic downturns, which have had a severe effect on the demand for capital equipment. Prior semiconductor and data storage industry downturns and construction of excess capacity by the industries have adversely affected our revenue, gross margin and net income and have also adversely affected the market price of our common stock. In addition, the need for continued investment in research and development and extensive customer service and support capability worldwide will continue to limit our ability to reduce expenses during industry downturns.

## Competition

The semiconductor and data storage equipment industries are highly competitive. Companies with complementary technologies and greater financial resources may enter these industries and develop products that are superior to our products or achieve market acceptance. In the market for optical defect inspection equipment, we compete directly with Hitachi Electronics Engineering Co., Ltd., Topcon and KLA-Tencor Corporation, all of which have significantly greater total assets and annual revenue than we do. In the metrology area of the device industry, we have encountered, and expect to encounter in the future, competition from companies offering similar and competing technologies, some of which have significantly greater total assets and annual revenue than we do or have an existing market presence in the device industry, or both. We also expect to encounter intense competition in the areas of metrology and inspection for the data storage industry. 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 can necessitate price reductions or non-revenue generating shipments of new products to certain strategic customers for evaluation purposes, which can adversely affect our operating results. In order to remain competitive, we must maintain a high level of investment in research and development, sales, marketing and customer service. There can be no assurance that we will have sufficient resources to continue to make such investment or that we will be able to make the technological advances necessary to remain competitive.

We expect acquisitions and business combinations by our competitors and potential competitors in the metrology as well as in the defect inspection markets. The impact of this activity could:

Allow them to offer new products without the lengthy time delays typically associated with internal product development

Limit our access to commercially significant technologies and/or new or complementary products

Permit them to accelerate the development and commercialization of new competitive products and the marketing of existing competitive products to their larger installed bases.

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Accordingly, such business combinations and acquisitions by these companies could have an adverse impact on both our market share and the pricing of our products, which could have a material adverse effect on our business.

## Customer and Industry Concentration

A relatively limited number of customers have historically accounted for a substantial portion of our revenue in each year. In fiscal years 2002, 2001 and 2000, sales to our top five customers in each period accounted for approximately 54.2%, 46.1% and 45.8% of our revenue, respectively. The loss of or any reduction in orders by any of these customers, including reductions due to market, economic or competitive conditions in the semiconductor industry or in other industries that manufacture products utilizing semiconductors, could adversely affect our business, financial condition and results of operations. In fiscal 2002, 2001 and 2000, we derived 68.9%, 69.1% and 58.3% of our revenue, respectively, from customers in the semiconductor wafer industry. While we are increasing our emphasis on expanding the level of our business in the device and data storage industries, there can be no assurance that our efforts will be successful. Our ability to maintain or increase our sales levels in the future will depend in part upon our ability to obtain orders from new customers as well as the financial condition and success of our existing customers and the general economy. There can be no assurance that we will be able to increase the level of our revenue in the future or that we will be able to retain existing customers or to attract new customers. In addition, given the limited number of customers, any delay in collecting, or inability to collect, accounts receivable could have a material adverse effect on our financial results. See Notes 2 and 11 of Notes to Consolidated Financial Statements for information regarding our accounting policies and our revenues by segment.

## Dependence on Suppliers

Certain of the components and subassemblies, including certain systems controllers and robotics components, incorporated in our current systems and those under development are obtained from a single source or a limited group of suppliers. In some instances, we have not qualified a second source for these products and the partial or complete loss of certain of these sources could have an adverse effect on our results of operations and damage customer relationships. Further, a significant increase in the price of one or more of these components or failure to perform up to specification could adversely affect our results of operations.

## Risks Associated with International Operations

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International sales accounted for 77.4%, 63.5% and 64.2% of our revenue for fiscal years 2002, 2001 and 2000, respectively. See Note 11 of Notes to Consolidated Financial Statements for information regarding our revenues and long-lived assets outside the United States. We expect that international sales will continue to represent a significant percentage of revenue. Our international business may be affected by changes in demand resulting from:

Fluctuations in interest and currency exchange rates

The investment policies of foreign countries

Changes in trade policies and/or tariff regulations

Difficulties in obtaining U.S. export licenses.

Given that approximately 50% - 60% of our revenue has historically come from Asia, financial instability in certain Asian countries could materially affect our competitive position and consequently, financial results.

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### ITEM 2. PROPERTIES

Information regarding our principal properties at April 30, 2002 is set forth below:

<u>Location</u>	<u>Principal Use</u>	<u>Business Segment</u>	<u>Sq. Footage</u>	<u>Ownership</u>
Westwood, MA	Corporate Headquarters, Manufacturing, Engineering, Service, Sales and Marketing	Semiconductor Systems Group	118,000	Owned
Tucson, AZ	Manufacturing, Engineering, Service, Sales and Marketing	ADE Phase Shift	60,000	Owned
Newton, MA	Manufacturing, Engineering, Service, Sales and Marketing	ADE Technologies	46,000	Owned
Vancouver, WA	Sales, Service and Engineering	Semiconductor Systems Group	12,800	Leased
Milpitas, CA	Sales and Service	Semiconductor Systems Group and ADE Technologies	9,300	Leased
Bethel, CT	Manufacturing and Engineering	Semiconductor Systems Group	5,000	Leased

We also lease space for sales and service support offices in various other domestic and overseas locations.

### ITEM 3. LEGAL PROCEEDINGS

On October 12, 2000, the Company filed a patent infringement lawsuit against KLA-Tencor ("KLA"), a competitor, in the U.S. District Court in Delaware. The Company seeks damages and a permanent injunction against further infringement upon United States Patent Number 6,118,525, entitled "Wafer Inspection System for Distinguishing Pits and Particles." On November 22, 2000, KLA filed a counterclaim in the United States District Court in Delaware that ADE has infringed upon three patents owned by KLA. KLA is seeking damages for patent

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infringement and a permanent injunction against any future infringement activity. In addition, KLA has asked the District Court for a declaration that United States Patent Number 6,118,525, owned by ADE, is invalid and not infringed upon by KLA. At this time, the Company cannot predict the outcome or the amount of gain or loss, if any.

In addition to the matter noted above, from time to time the Company is subject to legal proceedings and claims in the ordinary course of business. In the opinion of management, the amount of ultimate expense with respect to any other current legal proceedings and claims will not have a material adverse effect on the Company's financial position or results of operations.

### ITEM 4. SUBMISSION OF MATTERS TO SECURITY HOLDERS

There were no matters submitted to a vote of security holders during the fourth quarter of the fiscal year ended April 30, 2002.

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## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

#### Market Price of Common Stock

Our common stock trades on the Nasdaq National Market System under the symbol "ADEX." The following table presents the high and low sale prices for each quarter for the common stock as reported for the periods indicated.

<b>Fiscal year ended April 30, 2002</b>	<b>High</b>	<b>Low</b>
First quarter	\$ 20.00	\$ 13.45
Second quarter	17.65	8.40
Third quarter	12.10	9.05
Fourth quarter	15.50	9.44
<b>Fiscal year ended April 30, 2001</b>	<b>High</b>	<b>Low</b>
First quarter	\$ 24.00	\$ 13.25
Second quarter	23.13	15.00
Third quarter	22.88	10.44
Fourth quarter	16.65	11.33

The last sale price of the common stock on July 25, 2002, as reported by Nasdaq, was \$7.09 per share. As of July 25, 2002, there were 107 holders of record of the common stock (approximately 2,044 beneficial holders).

We have never declared or paid any cash dividends on our common stock and currently expect to retain future earnings for use in our business.

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### ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following table summarizes the financial data for our business and is derived from the Company's historical consolidated financial statements. You should read the selected financial data in conjunction with our historical consolidated financial statements and related notes and the section of this annual report entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

<b>Year ended April 30,</b>				
<b>2002</b>	<b>2001</b>	<b>2000</b>	<b>1999</b>	<b>1998</b>

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Year ended April 30,

(in thousands, except per share data)

<b>Statement of Operations Data:</b>					
Revenue	\$ 81,806	\$ 100,183	\$ 62,506	\$ 60,885	\$ 135,700
Cost of revenue	48,132	50,236	35,475	46,489	61,755
Gross profit	33,674	49,947	27,031	14,396	73,945
<b>Operating expenses:</b>					
Research and development	22,783	22,583	21,884	24,026	27,580
Purchased in-process research and development					6,100
Marketing and sales	13,064	16,218	13,002	12,280	15,638
General and administrative	11,290	9,948	12,281	11,153	13,701
Restructuring charges				2,318	
Total operating expenses	47,137	48,749	47,167	49,777	63,019
Income (loss) from operations	(13,463)	1,198	(20,136)	(35,381)	10,926
Interest and other income, net	256	1,130	1,280	2,600	2,347
Income (loss) before provision for (benefit from) income taxes, equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(13,207)	2,328	(18,856)	(32,781)	13,273
Provision for (benefit from) income taxes	10,416	37	102	(9,335)	3,301
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(23,623)	2,291	(18,958)	(23,446)	9,972
Equity in net earnings (loss) of affiliated companies	498	2	(1,489)	(1,082)	(1,005)
Income (loss) before cumulative effect of change in accounting principle	(23,125)	2,293	(20,447)	(24,528)	8,967
Cumulative effect of change in accounting principle, net of \$0 tax		(1,785)			
Net income (loss)	\$ (23,125)	\$ 508	\$ (20,447)	\$ (24,528)	\$ 8,967
<b>Net earnings (loss) per share:</b>					
<b>Basic</b>					
Earnings (loss) before cumulative effect of change in accounting principle	\$ (1.70)	\$ 0.17	\$ (1.53)	\$ (1.89)	\$ 0.73
Cumulative effect of change in accounting principle	\$	\$ (0.13)	\$	\$	\$
Basic earnings (loss) per share	\$ (1.70)	\$ 0.04	\$ (1.53)	\$ (1.89)	\$ 0.73
<b>Diluted</b>					
Earnings (loss) before cumulative effect of change in accounting principle	\$ (1.70)	\$ 0.17	\$ (1.53)	\$ (1.89)	\$ 0.70
Cumulative effect of change in accounting principle	\$	\$ (0.13)	\$	\$	\$
Diluted earnings (loss) per share	\$ (1.70)	\$ 0.04	\$ (1.53)	\$ (1.89)	\$ 0.70

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Year ended April 30,

Weighted average common shares outstanding							
Basic	13,615	13,507	13,353	12,989	12,215		
Diluted	13,615	13,754	13,353	12,989	12,822		
Pro forma amounts assuming retroactive effect of change in accounting principle related to revenue recognition:(1)							
Net revenues	\$	100,183	\$	61,966	\$	63,194	*
Net income (loss)	\$	2,293	\$	(20,700)	\$	(22,511)	*
Basic earnings (loss) per share	\$	0.17	\$	(1.55)	\$	(1.73)	*
Diluted earnings (loss) per share	\$	0.17	\$	(1.55)	\$	(1.73)	*

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April 30,

	2002	2001	2000	1999	1998					
(in thousands)										
<b>Balance Sheet Data:</b>										
Cash and cash equivalents	\$	26,108	\$	29,220	\$	35,001	\$	61,278	\$	72,711
Working capital		53,669		71,958		65,710		90,654		111,840
Total assets		114,751		146,707		132,870		153,430		173,643
Long-term debt, less current portion		10,715		11,339		11,950		12,537		8,613
Total stockholders' equity	\$	83,322	\$	104,664	\$	101,872	\$	120,822	\$	144,186

\*

Data is not available to provide pro forma information for this year.

(1)

In fiscal year 2001, the Company recorded a non-cash charge of \$1.8 million, net of \$0 taxes, or \$0.13 per diluted share to reflect the cumulative effect of the accounting change as of May 1, 2000 related to the adoption of Staff Accounting Bulletin No. 101, "Revenue Recognition in Financial Statements." See Note 3 of the consolidated financial statements. The pro forma results for the periods presented prior to fiscal 2001 above were calculated assuming the accounting change was made retroactively to those periods.

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**ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

*The following discussion of our financial condition and results of operations should be read together with the description of business, financial statements and the related notes of ADE which appear elsewhere in this annual report. The following discussion contains forward-looking statements that reflect ADE's plans, estimates and beliefs. Our actual results could differ materially from those discussed below and in the forward-looking statements appearing elsewhere in this annual report.*

**Overview**

ADE was founded in 1967 to develop and market certain advanced concepts and designs in capacitance and other measurement technologies suitable for industrial applications requiring precise, reliable, damage-free and repeatable measurements. Our products have evolved from single instruments used in off-line engineering analysis to multi-function systems for automated in-line monitoring of process-induced defects throughout the semiconductor wafer, device and data storage manufacturing processes. We operate three major business segments, the Semiconductor Systems Group ("SSG"), ADE Phase Shift ("PST") and ADE Technologies ("ATI"). The Semiconductor Systems Group manufactures multifunctional semiconductor metrology and automation systems and optical wafer defect inspection equipment used to detect particles and other defects on silicon wafer surfaces. ADE Phase Shift manufactures high performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics

industries. ADE Technologies manufactures high precision magnetic characterization and non-contact dimensional metrology gaging systems primarily for the data storage industry. The Company's markets are cyclical. During fiscal year 2002, the Company experienced decreased demand for its products in all business segments as a result of the downturn in the semiconductor wafer and device manufacturing industries as well as the data storage industry. Consequently, the Company experienced reduced order levels and revenues. In response to the industry downturn, we have undertaken cost reduction measures, including headcount reductions, while maintaining our investment in research and development to position the Company for the next wave of capital spending in the semiconductor wafer and device manufacturing industries as well as the data storage industry.

### **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. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure at the date of our financial statements. On an on-going basis, management evaluates its estimates and judgments, including those related to bad debts, inventories, intangible assets, income taxes, and warranty obligations. Management bases its estimates and judgments on historical experience 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. The Company considers certain accounting policies related to revenue recognition and allowance for doubtful accounts, inventory valuation, 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*

The Company changed its revenue recognition policy effective May 1, 2000, based on guidance provided in SEC Staff Accounting Bulletin No. 101 ("SAB 101"), "Revenue Recognition in Financial Statements." The Company recognizes 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. Our standard customer arrangement includes a signed purchase order, in which we offer payment terms of 30 to 90 days, no right of return of delivered products and a twelve month warranty. We assess whether the fee associated with our revenue transactions is fixed or determinable based on the payment terms associated with the transaction. If a significant portion of the fee is due after our normal payment terms, 30 to 90 days, we determine that the fee is not fixed or determinable. In these cases, we recognize revenue as the fees become due. We assess collectibility based on the credit worthiness of the customer and past transaction history. 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 the purchase order is accepted. If we determine that collection of a fee is not reasonably assured, we defer the fee and recognize the revenue at the time that collection becomes reasonably assured, which is generally upon the receipt of cash.

For some of the Company's sales transactions, a portion, usually 10%, of the fee is not due until installation occurs and the customer accepts the product. The other 90% of the fee is normally due 30 to 90 days after shipment. If the Company has met defined customer acceptance experience levels with a specific type of product, these transactions are accounted for as multiple-element arrangements with the deferral of the portion of the fee not due until installation is complete and customer acceptance has occurred. Management of the Company must make a determination of what constitutes an appropriate experience level with a product. This determination is based on, but not limited to, the extent to which a product contains significantly new technology, the number of similarly configured products previously delivered and our experience with a particular customer. The portion of the fee related to the installation of the product and customer training is classified as service revenue. All other sales with customer acceptance provisions are recognized as revenue upon customer acceptance.

The Company's transactions frequently involve the sales of systems and services under multiple element arrangements. Revenue under multiple element arrangements is allocated to all elements except systems based upon the fair value of those elements. The amounts allocated to training are based upon the price charged when this element is sold separately and unaccompanied by the other elements. The amount allocated to installation revenue is based upon hourly rates and the estimated time to complete the service. The amount allocated to system and parts is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered elements, based on their fair values, with the remainder being allocated to system revenue. Installation and training are not essential to the functionality of systems as these services do not alter the equipment's capabilities, are available from other vendors and the systems are standard products.

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We accrue for anticipated warranty costs upon shipment. Service revenue is recognized as the services are performed provided collection of the related receivable is probable. Service contract revenue is recognized ratably over the contractual periods in which the services are provided. We do not provide the right to return products. Revenue from software licenses is recognized when an agreement has been executed, software has been delivered, fees are fixed or determinable and collection of the related receivable is probable. Revenue from software consulting services provided on a time and reimbursable expense basis is recognized as the services are provided.

Revenue from sales to Japan ADE Ltd, our 50% owned affiliate and a distributor of our products, by the SSG, ATI and PST segments are reflected in segment revenue during the period they are shipped by the respective segment, which can differ from the period the revenue is recognized for consolidated financial reporting purposes. Consolidated revenue on sales to Japan ADE Ltd is recognized when the related product or software is shipped to and accepted by the end user of the product or software.

The Company maintains an allowance for doubtful accounts based on a continuous review of customer accounts, payment patterns and specific collection issues. Where specific collection issues are identified, the Company records a specific allowance based on the amount that the Company believes will

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be collected. For accounts where specific collection issues are not identified, the Company will record a reserve based on the age of the receivable and historical collection patterns.

### *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. The Company's policy is to assess the valuation of all inventories, including raw materials, work-in-process, finished goods and spare parts. Obsolete inventory or inventory in excess of management's estimated usage is written-down to its estimated market value, if less than its cost. Inherent in the estimates of market value are management's estimates related to current economic trends, future demand for the Company's products, and technological obsolescence. Significant management judgments must be made when establishing the reserve for obsolete and excess inventory. If our judgments and estimates relating to obsolete and excess inventory prove to be inadequate, our financial results could be materially adversely affected in future periods. If the inventory value is written down to its net realizable value, and subsequently there is an increased demand for the inventory at a higher value, the increased value of the inventory is not realized until the inventory is sold.

### *Accounting for Income Taxes*

We record income taxes using the asset and liability method. 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. Our financial statements contain certain deferred tax assets, which have arisen primarily as a result of operating losses incurred in prior years, as well as other temporary differences between book and tax accounting. Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes," requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. Significant management judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We evaluate the weight of all available evidence to determine whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. During the second quarter of fiscal 2002, as a result of current year operating losses to date, anticipated additional operating losses for the third quarter of 2002, an expected operating loss for fiscal 2002, and uncertainty as to the extent and timing of profitability in future periods, the Company recorded an additional valuation allowance to reserve the remaining deferred tax assets, resulting in income tax expense of \$10.6 million. The Company currently has a full valuation allowance. The decision to record the valuation allowance required significant judgment. Had we not recorded this allowance, we would have reported materially different results. If the realization of deferred tax assets in the future is considered more likely than not, an adjustment to the deferred tax assets would increase net income in the period such determination was made. The amount of the deferred tax asset considered realizable is based on significant estimates, and it is at least reasonably possible that changes in these estimates in the near term could materially affect our financial condition and results of operations. 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*

Intangible assets consist of capitalized license fees for software included in the Company's products as well as goodwill obtained through the acquisition of the Semiconductor Solutions Division of LPA Software, Inc. ("SSD") in September 1997. Goodwill of \$2,407,000 related to



the acquisition of SSD is amortized on a straight-line basis over ten years. Accumulated amortization on the goodwill at April 30,

2002 and 2001 was \$1,089,000 and \$854,000, respectively. Capitalized license fees of \$2,900,000 for software included in the Company's products is amortized at the greater of 1) the ratio that current gross revenue for the related products bear to the total current and anticipated future gross revenue for those products or 2) on a straight-line basis over its estimated useful life. Accumulated amortization on the license fees at April 30, 2002 and 2001 was \$1,618,000 and \$1,168,000, respectively.

In accordance with Financial Accounting Standards Board Statement No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of" ("SFAS No. 121"), 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. Factors we consider important which could trigger the impairment review include:

significant underperformance relative to historical or projected future operating results

significant negative industry or economic trends

significant decline in our stock price for a sustained period

significant decline in our technological value as compared to the market

our market capitalization relative to net book value.

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 asset is greater than the estimated future cash flows, the asset is written down to the estimated fair value. We determine the estimated fair value of the assets on a projected discounted cash flow method using a discount rate determined by management to be commensurate with the risk inherent in the current business model. In determining expected future cash flows, assets are grouped at the lowest level for which cash flows are identifiable and independent of cash flows from other asset groups. To date, no such impairment has been indicated. Our cash flow estimates contain management's best estimates, using appropriate and customary assumptions and projections at the time.

#### *Off-Balance Sheet Arrangements*

We have not created, and are not party to, any special-purpose or off-balance sheet entities for the purpose of raising capital, incurring debt or operating parts of our business that are not consolidated into our financial statements. We do not have any arrangements or relationships with entities that are not consolidated into our financial statements that are reasonably likely to materially affect our liquidity or the availability of our capital resources.

## Results of Operations

The following table presents the percentage of total revenue for the respective line items in ADE's consolidated statements of operations.

	Year ended April 30,		
	2002	2001	2000
Revenue	100.0%	100.0%	100.0%

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	Year ended April 30,		
	2002	2001	2000
Cost of revenue	58.8%	50.1%	56.8%
Gross profit	41.2%	49.9%	43.2%
Operating expenses:			
Research and development	27.9%	22.5%	35.0%
Marketing and sales	16.0%	16.2%	20.8%
General and administrative	13.8%	9.9%	19.6%
Income (loss) from operations	(16.5)%	1.2%	(32.2)%
Interest and other income, net	0.3%	1.1%	2.0%
Net income (loss)	(28.3)%	0.1%	(32.7)%

**Fiscal Year Ended April 30, 2002 Compared to Fiscal Year Ended April 30, 2001**

*Revenue.* Total revenue decreased 18% to \$81.8 million in fiscal 2002 from \$100.2 million in fiscal 2001. Decreased sales of the Company's products in the SSG segment reflected a decrease in demand for capital equipment in the semiconductor wafer and device industries as a result of the current severe down cycle. Revenue in the PST segment also decreased in fiscal 2002 compared with fiscal 2001 as a result of the current down cycle. Wafer and device manufacturers' capital equipment purchases have been focused on advanced industry requirements rather than on capacity expansion, which resulted in technology purchases of the Company's next generation of products in both the SSG and the PST segments.

The data storage industry has continued to experience extreme pricing pressure, consolidation and excess supply in many data storage market segments, which has resulted in reduced production and capital equipment purchases. Consequently, revenues from the products that are marketed to the data storage industry by the Company's ATI segment decreased in fiscal 2002 compared to fiscal 2001.

Consolidated revenue in fiscal 2002 was \$3.3 million higher than aggregate segment revenue for this period and reflects the impact of revenue from sales to Japan ADE Ltd. that were recognized in fiscal 2002 for consolidated reporting purposes but were recognized during fiscal 2001 on a segment basis.

The decrease in service revenues is consistent with the decrease in system and parts revenue and is reflective of the current down cycle in the wafer and device manufacturing industries.

*Gross profit.* Gross profit decreased to 41% in fiscal 2002 from 50% in fiscal 2001. The decrease in gross profit was due primarily to the higher percentage of shipments of 300mm products in the SSG segment, which carry lower margins in their initial stages than the Company's legacy products. The Company expects these lower margins to continue in the short term due to expected shipments of newer technologies. Also contributing to the decrease in gross profit was a decline in factory utilization in all segments in fiscal 2002 compared to fiscal 2001 due to the decrease in demand for the Company's products. Gross profit from sales of services increased by 4% in fiscal 2002 compared to fiscal 2001 as a result of overhead expense reductions during fiscal 2002.

*Research and Development.* Research and development expense in fiscal 2002 increased 1% to \$22.8 million from \$22.6 million in fiscal 2001 and increased as a percentage of revenue to 28% from 23%. The sustained level of expense resulted primarily from continued investment by the SSG segment to develop its AFS and AWIS products to capitalize on the next wave of worldwide capital spending, which is expected to be focused on 300mm wafer production. Also contributing to the overall level of expense was

continued investment in research and development by the PST segment. The Company also continues to develop new products for the data storage industry, including those that measure the magnetic properties of materials used in manufacturing disk drives. The Company is committed to continuing its investment in research and development to maintain its position as a technological leader, which may necessitate continued research and development spending at or above current levels. The increase in expense as a percentage of revenues resulted primarily from the decrease in revenues during fiscal 2002 compared to fiscal 2001.

*Marketing and Sales.* Marketing and sales expense decreased 19% to \$13.1 million in fiscal 2002 from \$16.2 million in fiscal 2001, and remained consistent as a percentage of revenue at 16% in both fiscal 2002 and fiscal 2001. The decreased expense in the all business segments resulted primarily from decreased commissions expense on sales made through both internal and external sales representatives. The mix of sales channels through which the Company's products are sold may have a significant impact on the Company's marketing and sales expense and the results in any period may not be indicative of marketing and sales expense for future periods. Also contributing to the decrease in expense was a decrease in payroll expense and discretionary spending such as travel and advertising.

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*General and Administrative.* General and administrative expenses increased 13% to \$11.3 million in fiscal 2002 from \$9.9 million in fiscal 2001 and increased as a percentage of revenue to 14% in fiscal 2002 from 10% in fiscal 2001. Expenses increased primarily due to an increase in legal and patent expenses in fiscal 2002 compared with fiscal 2001. The increase in legal and patent expenses was partially offset by a decrease in bad debt expense and lower discretionary spending during fiscal 2002 compared with fiscal 2001.

*Interest and Other Income.* Interest and other income, net of interest expense, was \$0.3 million in fiscal 2002 versus \$1.1 million in fiscal 2001. Fiscal 2002 interest and other income of \$1.1 million was mostly offset by interest expense of \$0.8 million associated with the Industrial Development Bonds used to finance the acquisition and renovation of our corporate headquarters and SSG manufacturing facility in Westwood, Massachusetts, the headquarters and manufacturing facility of ATI in Newton, Massachusetts and the construction of the PST headquarters and manufacturing facility in Tucson, Arizona. The interest rates on these bonds are fixed. The decrease in interest and other income was due to both a decrease in interest rates and a decrease in invested cash balances in fiscal 2002 compared to fiscal 2001.

*Provision for Income Taxes.* The provision for income taxes was \$10.4 million in fiscal 2002 compared to \$37,000 in fiscal 2001. The provision for income taxes in fiscal 2002 consists of an increase of \$10.6 million in the valuation allowance against the Company's deferred tax assets that was recorded in the second quarter of fiscal 2002. The Company has deferred tax assets, which have arisen primarily as a result of operating losses incurred in prior years, as well as other temporary differences between book and tax accounting. Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes," requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. During the second quarter of fiscal 2002, as a result of current year operating losses to date, anticipated additional operating losses for the third quarter of 2002, an expected operating loss for fiscal 2002, and uncertainty as to the extent and timing of profitability in future periods, the Company recorded an additional valuation allowance to reserve the remaining deferred tax assets, resulting in income tax expense of \$10.6 million. The Company currently has a full valuation allowance. As of April 30, 2002, the Company has available unused operating loss carryforwards, which may be applied against future taxable income. Net operating loss carryforwards generated in fiscal 2000 and 2002 begin to expire in fiscal 2005 for state purposes and 2020 for federal purposes. The fiscal 2002 provision for income taxes was partially offset by a \$200,000 refund due to recent tax law changes. The fiscal 2001 provision for income taxes consisted of state and foreign income taxes and federal income taxes, all of which represented alternative minimum taxes.

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### **Fiscal Year Ended April 30, 2001 Compared to Fiscal Year Ended April 30, 2000**

*Revenue.* Revenue increased 60.3% to \$100.2 million in fiscal 2001 from \$62.5 million in fiscal 2000. The increase was primarily due to increased unit sales of our products in all segments of our business. Increased sales of the Company's products were primarily due to an increase in demand for capital equipment in the semiconductor wafer and device industries while demand in the computer hard disk industry remained consistent compared with the prior year. Capital equipment utilization at wafer and device manufacturers has improved, resulting in some capital equipment purchases to adjust capacity on existing lines. Advanced industry requirements driven by shrinking device dimensions and larger silicon wafers have resulted in increased purchases of the Company's next generation of products.

Consolidated revenue in fiscal 2001 was \$2.9 million less than aggregate segment revenue for this period and reflects the impact of revenue from sales to Japan ADE Ltd. that was not recognized in fiscal 2001 for consolidated reporting purposes but was recognized during fiscal 2001 on a segment basis.

*Gross Profit.* Gross profit increased to 49.9% in fiscal 2001 from 43.2% in fiscal 2000. The increase in the gross profit resulted primarily from the effect of increased sales volume of shipments of legacy products and increased absorption of overhead expenses due to significantly increased manufacturing activity in the SSG segment. In addition, our capacity utilization for the SSG segment improved during fiscal 2001 compared to fiscal 2000 as a result of efficiencies realized since the completion of the consolidation of the SSG manufacturing operations from Charlotte, North Carolina into the Westwood, Massachusetts facility in the latter half of fiscal 2000. Gross profit at PST increased in fiscal 2001 compared to fiscal 2000 primarily as a result of increased sales volume, while gross profit at ATI decreased during fiscal 2001 compared to fiscal 2000 due to product mix.

*Research and Development.* Research and development expense in fiscal 2001 increased 3.2% to \$22.6 million from \$21.9 million in fiscal 2000 and decreased as a percentage of revenue to 22.5% from 35.0%. The increase in expense resulted primarily from continued investment by the SSG segment to develop its AFS and AWIS advanced wafer inspection systems to capitalize on the next wave of worldwide capital spending, which is expected to be focused on 300mm production. Also contributing to the increase in expense was continued investment by PST on its NanoMapper wafer nanotopography system. The overall increase in research and development expense was offset somewhat by a decrease in project materials expenses at ATI. The decrease in expense as a percentage of revenues resulted primarily from the increase in revenues during fiscal 2001 compared to fiscal 2000. The Company has continued its development efforts to enhance its existing 200mm and advanced 200mm wafer systems as its semiconductor industry customers seek to improve their yields on 200mm wafers as well as efforts to develop and enhance bridge tools, which can be used with either 200mm or 300mm wafers. The Company also continues to develop new

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products for the computer disk industry, including those, which measure the magnetic properties of materials used in manufacturing disk drives. The Company is committed to continuing its investment in research and development to maintain its position as a technological leader, which may necessitate continued research and development spending at or above current levels.

*Marketing and Sales.* Marketing and sales expense increased 24.7% to \$16.2 million in fiscal 2001 from \$13.0 million in fiscal 2000, and decreased as a percentage of revenue to 16.2% from 20.8%. The increased expense resulted primarily from increased commissions expense on sales made through external sales representatives, primarily in Asia, for the SSG segment due to increased sales volume during fiscal 2001 compared to fiscal 2000. Also contributing to the increase in expense was an increase in payroll and benefits expenses in SSG in fiscal 2001 compared to fiscal 2000. Expenses for PST and ATI remained consistent with the prior year. The mix of sales channels through which the Company's products are sold may have a significant impact on the Company's marketing and sales expense and the results in any period may not be indicative of marketing and sales expense for future periods.

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*General and Administrative.* General and administrative expenses decreased 19.0% to \$9.9 million in fiscal 2001 from \$12.3 million in fiscal 2000 and decreased as a percentage of revenue to 9.9% from 19.6% in fiscal 2000. Expenses decreased primarily as a result of decreased payroll and travel expenses savings related to the final consolidation of SSG's Charlotte, North Carolina operations into the Westwood, Massachusetts facility which was completed during the latter half of fiscal 2000. Expenses at PST decreased due to a reallocation of benefits and expenses at ATI were consistent with the prior year.

*Interest and Other Income.* Interest and other income, net of interest expense, was \$1.1 million in fiscal 2001 versus \$1.3 million in fiscal 2000. Fiscal 2001 interest and other income of \$2.0 million was partially offset by interest expense of \$0.8 million associated with the Industrial Development Bonds used to finance the acquisition and renovation of our corporate headquarters and SSG manufacturing facility in Westwood, Massachusetts, the headquarters and manufacturing facility of ATI in Newton, Massachusetts and the construction of the PST headquarters and manufacturing facility in Tucson, Arizona.

*Provision for Income Taxes.* The provision for income taxes was \$37,000 in 2001 compared to \$102,000 in fiscal 2000. The fiscal 2001 provision for income taxes consisted of state and foreign income taxes and federal income taxes, all of which represent alternative minimum taxes. There was no change in net deferred tax assets during fiscal 2001.

### **Selected Consolidated Quarterly Operating Results**

The following table presents consolidated statement of operations data for each of the eight quarters in the period beginning May 1, 2000 and ending April 30, 2002. This information has been derived from ADE's unaudited consolidated financial statements. The unaudited financial statements have been prepared on the same basis as the audited financial statements and include all normal recurring adjustments considered necessary to present fairly this information when read in conjunction with ADE's annual audited financial statements and related notes appearing elsewhere in this annual report. Our quarterly operating results have varied and may continue to vary significantly. Our quarterly revenue typically is derived from a relatively small number of customer orders. These customer orders may consist of multiple systems, each of which are priced between approximately \$100,000 and \$750,000. As a result, the timing of significant orders or a reduction in the number of systems shipped in a quarter could have a material effect on our revenue and results of operations for that quarter. The results for a particular quarter may also vary due to a number of other factors, including:

Economic conditions in the semiconductor and data storage industries

Product mix of our sales for the period

The sales distribution channel of our sales for the period

Competitive pricing pressures

Our ability to design, introduce and manufacture new products on a cost effective and timely basis

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Customer cancellations or rescheduled shipments

Production difficulties or the inability to obtain critical components resulting in delayed shipments

Seasonal factors such as customers' capital budget approval cycles.

These factors could have a material adverse effect on our results of operations. Significant levels of our expenses are fixed in advance and based in part on our expectations as to future revenue. As a consequence, any material shortfall in revenue in a given quarter could have a material adverse effect on our earnings.

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	Quarter ended							
	July 31, 2000(1)	Oct. 31, 2000(1)	Jan. 31, 2001(1)	April 30, 2001	July 31, 2001	Oct. 31, 2001	Jan. 31, 2002	April 30, 2002
(in thousands, except per share data, unaudited)								
<b>Statement of Operations Data:</b>								
Revenue	\$ 21,387	\$ 23,671	\$ 28,223	\$ 26,902	\$ 25,371	\$ 21,910	\$ 17,945	\$ 16,580
Cost of revenue	11,111	11,966	14,243	12,917	14,919	13,729	10,407	9,076
Gross profit	10,276	11,705	13,980	13,985	10,452	8,181	7,538	7,504
Operating expenses:								
Research and development	5,154	5,176	5,731	6,521	6,115	5,961	5,190	5,517
Marketing and sales	4,262	4,284	3,508	4,165	3,588	3,551	2,973	2,953
General and administrative	2,228	2,624	3,203	1,893	2,312	2,796	2,995	3,186
Total operating expenses	11,644	12,084	12,442	12,579	12,015	12,308	11,158	11,656
Income (loss) from operations	(1,368)	(379)	1,538	1,406	(1,563)	(4,127)	(3,620)	(4,152)
Interest and other income (expense), net	340	326	281	183	311	48		(105)
Income (loss) before provision for (benefit from) income taxes, equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(1,028)	(53)	1,819	1,589	(1,252)	(4,079)	(3,620)	(4,257)
Provision for (benefit from) income taxes		64	47	(74)	7	10,598	9	(198)
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(1,028)	(117)	1,772	1,663	(1,259)	(14,677)	(3,629)	(4,059)
Equity in net earnings (loss) of affiliated companies	(722)	304	(61)	482	68	109	384	(62)
Income (loss) before cumulative effect of change in accounting principle	(1,750)	187	1,711	2,145	(1,191)	(14,568)	(3,245)	(4,121)
Cumulative effect of change in accounting principle, net of \$0 tax	(1,785)							

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Quarter ended

	Quarter ended							
	July 31, 2000	Oct. 31, 2000	Jan. 31, 2001	April 30, 2001	July 31, 2001	Oct. 31, 2001	Jan. 31, 2002	April 30, 2002
Net Income (loss)	\$ (3,535)	\$ 187	\$ 1,711	\$ 2,145	\$ (1,191)	\$ (14,568)	\$ (3,245)	\$ (4,121)
Net earnings (loss) per share:								
Basic								
Earnings (loss) before cumulative effect of change in accounting principle	\$ (0.13)	\$ 0.01	\$ 0.13	\$ 0.16	\$ (0.09)	\$ (1.07)	\$ (0.24)	\$ (0.30)
Cumulative effect of change in accounting principle	\$ (0.13)	\$	\$	\$	\$	\$	\$	\$
Basic earnings (loss) per share	\$ (0.26)	\$ 0.01	\$ 0.13	\$ 0.16	\$ (0.09)	\$ (1.07)	\$ (0.24)	\$ (0.30)
Diluted								
Earnings (loss) before cumulative effect of change in accounting principle	\$ (0.13)	\$ 0.01	\$ 0.12	\$ 0.16	\$ (0.09)	\$ (1.07)	\$ (0.24)	\$ (0.30)
Cumulative effect of change in accounting principle	\$ (0.13)	\$	\$	\$	\$	\$	\$	\$
Diluted earnings (loss) per share	\$ (0.26)	\$ 0.01	\$ 0.12	\$ 0.16	\$ (0.09)	\$ (1.07)	\$ (0.24)	\$ (0.30)
Weighted average shares outstanding basic	13,483	13,497	13,511	13,537	13,567	13,607	13,627	13,659
Weighted average shares outstanding diluted	13,483	13,781	13,748	13,705	13,567	13,607	13,627	13,659

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Quarter ended

	Quarter ended							
	July 31, 2000	Oct. 31, 2000	Jan. 31, 2001	April 30, 2001	July 31, 2001	Oct. 31, 2001	Jan. 31, 2002	April 30, 2002
<b>Percentage of Revenue:</b>								
Revenue	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Cost of revenue	52.0 %	50.6 %	50.5 %	48.0 %	58.8 %	62.7 %	58.0 %	54.7 %
Gross profit	48.0 %	49.4 %	49.5 %	52.0 %	41.2 %	37.3 %	42.0 %	45.3 %
Operating expenses:								
Research and development	24.1 %	21.9 %	20.3 %	24.2 %	24.1 %	27.2 %	28.9 %	33.3 %
Marketing and sales	19.9 %	18.1 %	12.4 %	15.5 %	14.1 %	16.2 %	16.6 %	17.8 %
General and administrative	10.4 %	11.1 %	11.3 %	7.0 %	9.1 %	12.8 %	16.7 %	19.2 %
Income (loss) from operations	(6.4)%	(1.6)%	5.4 %	5.2 %	(6.2)%	(18.8)%	(20.2)%	(25.0)%
Interest and other income, net	1.6 %	1.4 %	1.0 %	0.7 %	1.2 %	0.2 %	0.0 %	(0.6)%
Net income (loss)	(16.5)%	0.8 %	6.1 %	8.0 %	(4.7)%	(66.5)%	(18.1)%	(24.9)%

(1)

Effective May 1, 2000, the Company changed its method of accounting for revenue recognition in accordance with Staff Accounting Bulletin No. 101 (SAB 101). As a result, the quarterly information presented above for the first three quarters of fiscal 2001 has been restated from that previously filed on the Quarterly Reports on Form 10-Q. The adoption of SAB 101 had the effect of decreasing net revenue by \$430,000, increasing net loss by \$2.3 million and decreasing basic and diluted loss by \$0.17 per share for the first quarter of fiscal 2001. The adoption of SAB 101 had the effect of decreasing net revenue and net income by \$373,000 and \$249,000, respectively, and decreasing basic and diluted earnings per share by \$0.02 per share for the second quarter of fiscal 2001. The adoption of SAB 101 had the effect of increasing net revenue by \$93,000, decreasing net income by \$17,000, decreasing diluted earnings per share by \$0.01 and no effect on basic earnings per share for the third quarter of fiscal 2001.

Our quarterly operating results have varied and may continue to vary significantly due to a number of factors, including economic conditions in the semiconductor and data storage industries, the timing of shipments of orders to major customers, the mix of products sold and competitive pricing. Customers may cancel or reschedule shipments. Product shipments could be delayed by production difficulties or critical component inventory shortages. These factors could have a material adverse effect on our results of operations. As cost of revenue includes

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manufacturing overhead, which is relatively constant from quarter to quarter, gross margin can vary significantly from quarter to quarter due to varying levels of production and revenue. Marketing and sales expenses can vary from quarter to quarter based on a number of factors, including mix of sales channels, geographic mix and the timing of marketing events. There can be no assurance that we will be profitable in any future period.

### Liquidity and Capital Resources

At April 30, 2002, we had \$26.1 million in cash and cash equivalents and \$53.7 million in working capital. In addition, we had \$3.4 million in restricted cash used as security for a tax-exempt Industrial Development Bond issued through the Massachusetts Industrial Finance Agency in December 1997. We may substitute a letter of credit in an amount equal to approximately 105% of the outstanding principal balance as collateral for our obligations under this bond, assuming we have the ability to borrow under a credit facility. This substitution would allow the restricted cash balance to be used for general corporate purposes.

Cash provided by operating activities for the year ended April 30, 2002 was \$1.7 million. This amount resulted from a net loss of \$23.1 million, adjusted for net non-cash charges of \$15.5 million and a \$9.3 million net decrease in working capital accounts. Non-cash items primarily consisted of \$5.3 million of depreciation and amortization and \$10.6 million from an increase in the deferred income tax asset valuation allowance.

The net decrease in working capital of \$9.3 million was comprised of a decrease in accounts receivable, inventories, prepaid expenses of \$12.7 million, \$6.3 million and \$0.3 million, respectively, as well as decreases in accounts payable, accrued expenses and other current liabilities and deferred income on sales to Japan ADE Ltd. of \$0.2 million, \$9.1 million and \$0.6 million, respectively.

The decrease in accounts receivable resulted from the decreased billings and improved collections during fiscal 2002. The decrease in inventory resulted primarily from shipments of backlog from the end of

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the last fiscal year and from decreased inventory purchases related to the decrease in customer orders. The decrease in prepaid expenses results primarily from the timing of payments and a decrease in prepaid commissions due to decreased sales levels. The decrease in accounts payable resulted primarily from decreased purchases of inventory and the timing of payments to vendors. The decrease in accrued expenses and other current liabilities resulted from decreases in deferred revenue and accrued warranty, which is related to decreased sales levels. The decrease in deferred income on sales to Japan ADE Ltd. is due to the timing of shipments to JAL and the acceptance of those shipments by JAL's customers.

Cash used in investing activities was \$5.3 million, and consisted of \$5.7 million for purchases of fixed assets, which was offset by a decrease in other assets of \$0.2 million and a decrease in restricted cash of \$0.2 million.

Cash provided by financing activities was \$511,000 and consisted of proceeds from the issuance of common stock from the exercise of stock options and the purchase of stock under the employee stock purchase plan of \$1.1 million. This amount was partially offset by \$599,000 in principal payments of long-term debt.

We expect to meet our near-term working capital needs and capital expenditures primarily through our available cash and cash equivalents, which will primarily be generated from sales to our customer base, both existing and new. However, we can provide no assurance that we will be able to maintain our current customer base or acquire new customers.

The following table reflects future cash payments, including interest, due under current contractual obligations as of April 30, 2002:

	<b>Non-cancelable Operating Lease Commitments</b>	<b>Long Term Debt</b>	<b>Total</b>
	(in thousands)		
2003	\$ 855	\$ 1,270	\$ 2,125
2004	758	1,258	2,016
2005	550	1,246	1,796
2006	466	1,235	1,701
2007	207	3,508	3,715
Thereafter		5,781	5,781

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	Non-cancelable Operating Lease Commitments	Long Term Debt	Total
Total	\$ 2,836	\$ 14,298	\$ 17,134

The Company's long-term debt consists of Industrial Development Bonds issued in April 1999, December 1997 and June 1996, respectively. The face values of the April 1999 bond (the "1999 bond"), the December 1997 bond (the "1997 bond") and the June 1996 bond (the "1996 bond") were \$4,500,000, \$4,000,000 and \$5,500,000, respectively. The 1999 bond, 1997 bond and the 1996 bond bear interest at a rate of 5.52%, 5.79% and 5.74%, respectively, and provide for 50% of the principal to be paid over ten years from the dates of issuance with the remaining 50% due in March 2009, December 2007 and June 2006, respectively. Monthly payments of principal and accrued interest for the 1999 bond are approximately \$31,000. Monthly payments of principal and accrued interest for the 1997 bond commenced at approximately \$36,000 and decrease to approximately \$27,000 over the ten-year payment period. Monthly payments of principal and accrued interest for the 1996 bond are approximately \$43,000. The proceeds of the 1999 bond were used to fund the construction of a new manufacturing facility in Tucson, Arizona. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of credit, bearing a fee of 1.5% of the outstanding bond balance, is collateralized by a mortgage on the building and land. Under the terms of the letter of credit, the Company is required to comply with certain financial covenants. As of April 30, 2002, the Company is in compliance with these covenants. The Company cannot provide assurance that it will continue to be in compliance with such covenants or, if it were to not be in compliance, what the results would be. For example, should cash and cash equivalents fall below a requisite level at any fiscal quarter end, a covenant would be violated. The proceeds of the 1997 bond were used to fund the acquisition and renovation of the Company's Newton, Massachusetts manufacturing facility. The Company collateralized the issuance of this bond with

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cash, which is classified as restricted cash on the April 30, 2002 and 2001 balance sheet. The proceeds of the June 1996 bond were used to fund the acquisition and renovation of the manufacturing facility in the Company's headquarters site in Westwood, Massachusetts. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of credit, bearing a fee of 1.25% of the outstanding bond balance, is collateralized by a mortgage on the building and land.

#### New Accounting Pronouncements

In July 2001, the FASB issued SFAS No. 141, "Business Combinations" and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 141 requires that all business combinations be accounted for under the purchase method only and that certain acquired intangible assets in a business combination be recognized as assets apart from goodwill. SFAS No. 142 requires that ratable amortization of goodwill be replaced with periodic tests of the goodwill's impairment and that intangible assets other than goodwill be amortized over their useful lives. SFAS No. 141 is effective for all business combinations initiated after June 30, 2001 and for all business combinations accounted for by the purchase method for which the date of acquisition is after June 30, 2001. The provisions of SFAS No. 142 are effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required, in fiscal year 2003. We believe the adoption of SFAS No. 141 and SFAS No. 142 will not have a material impact on our current financial position and results of operations. As of May 1, 2002 the Company will cease amortizing goodwill. Quarterly amortization for the year ended April 30, 2002 was approximately \$60,000.

In October 2001, the Financial Accounting Standards Board issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets," which is effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required in fiscal year 2003. SFAS No. 144 supersedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of" and provides a single accounting model for long-lived assets to be disposed of. We believe the adoption of SFAS No. 144 will not have a material impact on our current financial position and results of operations.

#### Inflation

To date, inflation has not had a significant impact on our operations.

#### ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

At April 30, 2002, the Company's exposure to market risk relates primarily to changes in interest rates on its investment portfolio. The Company's cash equivalents consist primarily of fixed income securities. The Company invests only with high credit quality issuers and does not use derivative financial instruments in its investment portfolio. We do not believe that a sharp increase or decrease in interest rates would have a material adverse impact on the fair value of our investment portfolio. The Company's long-term borrowings are at fixed interest rates.



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In addition, a portion of the Company's business is conducted outside the United States through its foreign subsidiaries and an affiliate. The Company generally transacts business in international markets in United States currency, but pays its employees in local currencies. Accordingly, the Company is subject to exposure from adverse movements in foreign currency exchange rates.

### ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by Item 8 is contained on pages F-1 through F-22 of this report.

### ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

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## PART III

### ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information regarding directors required by this Item is included in the definitive Proxy Statement for the Company's 2002 Annual Meeting of Stockholders (the "2002 Proxy Statement"), to be filed with the Commission on or about August 15, 2002 under "Election of Directors" and is incorporated herein by reference. The information regarding executive officers required by this Item is included in Part I of this Form 10-K.

### ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is included in the 2002 Proxy Statement under "Executive Compensation" and is incorporated herein by reference (excluding, however, the "Report on Executive Compensation" and the Performance Graph contained in the 2002 Proxy Statement, which shall not be deemed incorporated herein).

### ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Information regarding the security ownership of certain beneficial owners and management is included in the 2002 Proxy Statement under "Security Ownership of Certain Beneficial Owners and Management" and is incorporated herein by reference.

The following table sets forth certain information as of April 30, 2002 with respect to compensation plans under which our equity securities are authorized for issuance:

	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)		Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders(1):	1,165,741	\$	13.81	1,286,816(2)
Equity compensation plans not approved by security holders	None		None	None
<b>Total</b>	<b>1,165,741</b>	<b>\$</b>	<b>13.81</b>	<b>1,286,816</b>

(1)

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Please see Note 9 of our Notes to Consolidated Financial Statements for description of the Company's equity compensation plans.

- (2) Includes 777,382 shares that remain available for purchase under the ADE Corporation Employee Stock Purchase Plan.

### ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Not applicable.

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## PART IV

### ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a)(1) Financial Statements. The Financial Statements required to be filed by Item 8 of Form 10-K, and filed herewith, are as follows:

	<b>Page Number in this Form 10-K</b>
Report of Independent Accountants	F-1
Consolidated Balance Sheets as of April 30, 2002 and 2001	F-2
Consolidated Statements of Operations for the three years ended April 30, 2002	F-3
Consolidated Statements of Stockholders' Equity for the three years ended April 30, 2002	F-4
Consolidated Statements of Cash Flows for the three years ended April 30, 2002	F-5
Notes to Consolidated Financial Statements	F-6
<b>(a)(2) Financial Statement Schedule:</b>	
II Valuation and Qualifying Accounts and Reserves for the three years ended April 30, 2002	S-1
All other schedules are omitted because they are either not applicable or the required information is included in the financial statements or related notes.	

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(a)(3) Exhibits.

<b>Exhibit Number</b>	<b>Description</b>
3.1	Restated Articles of Organization (filed as Exhibit 3.1 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).
3.2	By-laws (as amended) (filed herewith).
4.1	Registration Rights Agreement dated as of May 31, 1998 by and among ADE Corporation, Chris Koliopoulos and David Basila (filed as Exhibit 4.6 to the Company's Form 8-K dated June 25, 1998 and incorporated herein by reference).

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Exhibit Number	Description
10.1	Form of Employee Confidentiality Agreement (filed as Exhibit 10.1 to the Company's Registration Statement on Form S-1 (333-96408) or amendments thereto and incorporated herein by reference).
10.2	2000 Stock Option Plan (filed as Exhibit A to the Company's Proxy Statement with respect to its Annual Meeting of Shareholders for the fiscal year ended April 30, 2000 and incorporated herein by reference).*
10.3	1997 Stock Option Plan (filed as Exhibit 4.3 to the Company's Registration Statement on Form S-8 (333-46505) or amendments thereto and incorporated herein by reference).*
10.4	Amendment to 1997 Stock Option Plan dated April 7, 1999 (filed as Exhibit 10.3 to the Company's Form 10-K for the fiscal year ended April 30, 1999 and incorporated herein by reference).*
10.5	1995 Stock Option Plan (filed as Exhibit 10.4 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).*
10.6	1992 Stock Option Plan (filed as Exhibit 10.5 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).*
10.7	Amendment to 1992 Stock Option Plan dated April 7, 1999 (filed as Exhibit 10.6 to the Company's Form 10-K for the fiscal year ended April 30, 1999 and incorporated herein by reference).*
10.8	Employee Stock Purchase Plan (as amended) (filed herewith).*
10.9	Loan Agreement dated as of June 7, 1996, among GE Capital Public Finance, Inc., Massachusetts Industrial Finance Agency and the Company (filed as Exhibit 10.9 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.10	Certificate as to Nonarbitrage and Tax Compliance, dated as of June 7, 1996, from the Company to Massachusetts Industrial Finance Agency (filed as Exhibit 10.10 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.11	Letter of Credit Agreement, dated June 7, 1996, between Citizens Bank of Massachusetts and the Company (filed as Exhibit 10.11 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.12	Mortgage, Security Agreement, and Assignment, dated June 7, 1996, from the Company to Citizens Bank of Massachusetts (filed as Exhibit 10.13 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
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10.13	Pledge Agreement, dated June 7, 1996, from the Company to Citizens Bank of Massachusetts (filed as Exhibit 10.14 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.14	Oil and Hazardous Materials Indemnification Agreement, dated June 7, 1996, between the Company and Citizens Bank of Massachusetts (filed as Exhibit 10.15 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.15	Indemnification Agreement, dated as of February 28, 1996, among MetPath of New England, Inc., Corning Life Sciences, Inc. and the Company (filed as Exhibit 10.16 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.16	Letter Agreement regarding collateral assignment of Indemnification from the Company to Citizens Bank of Massachusetts, with attachment (filed as Exhibit 10.17 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).

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- 10.17 Noncompetition Agreement dated as of May 31, 1998 by and between ADE Corporation and Chris Koliopoulos (filed as Exhibit 10.21 to the Company's Form 10-K for the fiscal year ended April 30, 1998, and incorporated herein by reference).\*
- 10.18 Employment and Non-Competition Agreement dated as of May 1, 2002 by and between ADE Corporation and Brian James (filed herewith).\*
- 21.1 Subsidiaries of the Company (filed as Exhibit 21.1 to the Company's Form 10-Q for the fiscal quarter ended October 31, 2000 and incorporated herein by reference).
- 23.1 Consent of PricewaterhouseCoopers LLP (filed herewith).
- 24.1 Power of Attorney (filed herewith as part of the signature page hereto).

\*  
Compensatory plan or agreement applicable to management and/or employees.

(b)  
Reports on Form 8-K

There were no reports on Form 8-K filed by the Company during the fourth quarter of fiscal year 2002.

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Company has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

ADE CORPORATION

July 17, 2002

By: /s/ CHRIS L. KOLIOPOULOS

Chris L. Koliopoulos  
President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints Chris L. Koliopoulos, Brian C. James, William A. Levine, and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them, for him and in his name, place, and stead, and in any and all capacities, to sign this annual report on Form 10-K of ADE Corporation and any amendments thereto, and to file the same, with all exhibits thereto and any other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully and to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully 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 Company in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ CHRIS L. KOLIOPOULOS</u> Chris L. Koliopoulos	President, Chief Executive Officer of ADE Corporation, President of ADE Phase Shift and Director (Principal Executive Officer)	July 17, 2002

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Signature	Title	Date
<u>/s/ BRIAN C. JAMES</u> Brian C. James	Executive Vice President, Treasurer and Chief Financial Officer (Principal Financial Officer)	July 17, 2002
<u>/s/ JOSEPH E. ROVATTI</u> Joseph E. Rovatti	Controller (Principal Accounting Officer)	July 29, 2002
<u>/s/ LANDON T. CLAY</u> Landon T. Clay	Chairman of the Board	July 17, 2002

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<u>/s/ ROBERT C. ABBE</u> Robert C. Abbe	Director	July 26, 2002
<u>Francis B. Lothrop, Jr.</u>	Director	
<u>/s/ H. KIMBALL FAULKNER</u> H. Kimball Faulkner	Director	July 25, 2002
<u>/s/ KENDALL WRIGHT</u> Kendall Wright	Director	July 17, 2002
<u>/s/ HARRIS CLAY</u> Harris Clay	Director	July 17, 2002

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**REPORT OF INDEPENDENT ACCOUNTANTS**

To the Board of Directors and Stockholders  
of ADE Corporation:

In our opinion, the consolidated financial statements listed in the index appearing under Item 14 (a)(1) on page 29 present fairly, in all material respects, the financial position of ADE Corporation and its subsidiaries at April 30, 2002 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended April 30, 2002 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 14 (a)(2) on page 29 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, which require that we plan and perform the

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audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 3 to the consolidated financial statements, during the year ended April 30, 2001, the Company changed its method of recognizing revenue.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts  
June 12, 2002

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**ADE CORPORATION**  
**CONSOLIDATED BALANCE SHEETS**

(In thousands, except share data)

	<u>April 30,</u> <u>2002</u>	<u>April 30,</u> <u>2001</u>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 26,108	\$ 29,220
Marketable securities	2,571	1,913
Accounts receivable:		
Trade, less allowance for doubtful accounts of \$699 and \$917, respectively	9,880	20,898
Affiliate	1,845	3,526
Inventories	32,701	39,025
Prepaid expenses and other current assets	1,278	1,566
Deferred income taxes		6,514
	<u>74,383</u>	<u>102,662</u>
Total current assets	74,383	102,662
Fixed assets, net	30,658	29,569
Deferred income taxes		4,076
Investments	3,610	3,221
Intangible assets, net	2,601	3,286
Restricted cash	3,352	3,525
Other assets	147	368
	<u>114,751</u>	<u>146,707</u>
Total assets	\$ 114,751	\$ 146,707
<b>Liabilities and Stockholders' Equity</b>		
Current liabilities:		
Current portion of long-term debt	\$ 646	\$ 621
Accounts payable	6,594	6,833
Accrued expenses and other current liabilities	12,004	21,134
Deferred income on sales to affiliate	1,470	2,116
	<u>20,714</u>	<u>30,704</u>

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	April 30, 2002	April 30, 2001
Total current liabilities	20,714	30,704
Long-term debt	10,715	11,339
Commitments and contingencies (Note 14)		
<b>Stockholders' equity:</b>		
Preferred stock, \$1.00 par value; 1,000,000 shares authorized; none issued or outstanding		
Common stock, \$.01 par value; 25,000,000 shares authorized; 13,676,678 and 13,552,966 issued and outstanding at April 30, 2002 and 2001, respectively	137	136
Capital in excess of par value	103,553	102,429
(Accumulated deficit) retained earnings	(22,439)	686
Accumulated other comprehensive income	2,071	1,413
Total stockholders' equity	83,322	104,664
Total liabilities and stockholders' equity	\$ 114,751	\$ 146,707

The accompanying notes are an integral part of the consolidated financial statements.

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**ADE CORPORATION**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

(In thousands, except per share data)

	Year ended April 30,		
	2002	2001	2000
<b>Net Revenue:</b>			
System and parts	\$ 50,185	\$ 74,390	\$ 46,120
System and parts affiliate	23,113	15,452	8,787
Service	8,508	10,341	7,599
Total revenue	81,806	100,183	62,506
<b>Cost of revenue:</b>			
System and parts	27,191	31,704	21,893
System and parts affiliate	11,282	6,343	3,285
Service	9,659	12,189	10,297
Total cost of revenue	48,132	50,236	35,475
Gross profit	33,674	49,947	27,031

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	Year ended April 30,		
	2019	2018	2017
Operating expenses:			
Research and development	22,783	22,583	21,884
Marketing and sales	13,064	16,218	13,002
General and administrative	11,290	9,948	12,281
Total operating expenses	47,137	48,749	47,167
Income (loss) from operations	(13,463)	1,198	(20,136)
Other income (expense):			
Interest and other income	1,066	1,971	2,199
Interest expense	(810)	(841)	(919)
Income (loss) before provision for income taxes, equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(13,207)	2,328	(18,856)
Provision for income taxes	10,416	37	102
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	(23,623)	2,291	(18,958)
Equity in net earnings (loss) of affiliated companies	498	2	(1,489)
Income (loss) before cumulative effect of change in accounting principle	(23,125)	2,293	(20,447)
Cumulative effect of change in accounting principle, net of \$0 tax		(1,785)	
Net income (loss)	\$ (23,125)	\$ 508	\$ (20,447)
Net earnings (loss) per share:			
Basic			
Earnings (loss) before cumulative effect of change in accounting principle	\$ (1.70)	\$ 0.17	\$ (1.53)
Cumulative effect of change in accounting principle	\$	\$ (0.13)	\$
Basic earnings (loss) per share	\$ (1.70)	\$ 0.04	\$ (1.53)
Diluted			
Earnings (loss) before cumulative effect of change in accounting principle	\$ (1.70)	\$ 0.17	\$ (1.53)
Cumulative effect of change in accounting principle	\$	\$ (0.13)	\$
Diluted earnings (loss) per share	\$ (1.70)	\$ 0.04	\$ (1.53)
Pro forma amounts assuming retroactive effect of change in accounting principle related to revenue recognition:			
Net revenues	\$	100,183	\$ 61,966
Net income (loss)	\$	2,293	\$ (20,700)
Basic earnings (loss) per share	\$	0.17	\$ (1.55)
Diluted earnings (loss) per share	\$	0.17	\$ (1.55)
Weighted average shares outstanding basic	13,615	13,507	13,353
Weighted average shares outstanding diluted	13,615	13,754	13,353



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The accompanying notes are an integral part of the consolidated financial statements.

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**ADE CORPORATION**  
**CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**

(In thousands, except share data)

	Common Stock		Capital in excess of par	Retained earnings (accumulated deficit)	Accumulated other comprehensive income	Deferred compensation	Total stockholders' equity
	Number of shares	Par value					
Balance at April 30, 1999	13,276,402	\$ 133	\$ 100,146	\$ 20,625		\$ (82)	\$ 120,822
Exercise of common stock options	157,250	2	957				959
Sale of common stock pursuant to the Employee Stock Purchase Plan	45,414		477				477
Amortization of deferred compensation						61	61
Net loss				(20,447)			(20,447)
Balance at April 30, 2000	13,479,066	135	101,580	178		(21)	101,872
Exercise of common stock options	32,636		236				236
Sale of common stock pursuant to the Employee Stock Purchase Plan	37,761	1	562				563
Common stock issued in lieu of Board of Directors' fees	3,503		51				51
Amortization of deferred compensation						21	21
Net income				508			508
Unrealized gain on marketable securities					1,413		1,413
Comprehensive income							1,921
Balance at April 30, 2001	13,552,966	136	102,429	686	1,413		104,664
Exercise of common stock options	74,172	1	681				682
Sale of common stock pursuant to the Employee Stock Purchase Plan	48,590		428				428
Common stock issued in lieu of Board of Directors' fees	950		15				15
Net loss				(23,125)			(23,125)
Unrealized gain on marketable securities					658		658

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	<u>Common Stock</u>				
Comprehensive loss					(22,467)
Balance at April 30, 2002	13,676,678	\$ 137	\$ 103,553	\$ (22,439)	\$ 2,071
					\$ 83,322

The accompanying notes are an integral part of the consolidated financial statements.

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**ADE CORPORATION**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

(In thousands)

	<u>Year ended April 30,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
<b>Cash flows from operating activities:</b>			
Net income (loss)	\$ (23,125)	\$ 508	\$ (20,447)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	5,280	5,793	5,881
Equity in net (earnings) loss of affiliated companies, net of dividends received	(389)	62	1,544
Deferred income taxes	10,590		(207)
Shares issued in lieu of directors' fees	15	51	
Amortization of deferred compensation		21	61
Cumulative effect of change in accounting principle		1,785	
Changes in assets and liabilities, net of acquisition:			
Accounts receivable, trade	11,018	(6,963)	(3,743)
Accounts receivable, affiliate	1,681	(2,912)	1,037
Inventories	6,324	(8,856)	(7,790)
Income tax refund receivable			7,425
Prepaid expenses and other current assets	288	(810)	(174)
Accounts payable	(239)	2,816	1,761
Accrued expenses and other current liabilities	(9,130)	5,052	(1,353)
Deferred income on sales to affiliate	(646)	1,779	(1,454)
Net cash provided by (used in) operating activities	<u>1,667</u>	<u>(1,674)</u>	<u>(17,459)</u>
<b>Cash flows from investing activities:</b>			
Purchases of fixed assets	(5,684)	(3,682)	(7,510)
Change in restricted cash	173	180	(172)
Equity investments and advances		(449)	(1,006)
Decrease (increase) in other assets	221	(367)	(1,002)
Net cash used in investing activities	<u>(5,290)</u>	<u>(4,318)</u>	<u>(9,690)</u>
<b>Cash flows from financing activities:</b>			

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	Year ended April 30,		
Repayment of long-term debt	(599)	(588)	(564)
Proceeds from issuance of common stock, net of issuance costs	1,110	799	1,436
<b>Net cash provided by financing activities</b>	<b>511</b>	<b>211</b>	<b>872</b>
Net decrease in cash and cash equivalents	(3,112)	(5,781)	(26,277)
Cash and cash equivalents, beginning of year	29,220	35,001	61,278
Cash and cash equivalents, end of year	\$ 26,108	\$ 29,220	\$ 35,001

See supplemental disclosures of cash flow information (Note 15)

The accompanying notes are an integral part of the consolidated financial statements.

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**ADE CORPORATION**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

**1. Nature of Business**

ADE Corporation (the "Company") designs, manufactures, markets and services highly precise, automated measurement, defect detection and handling equipment with current applications in the production of semiconductor wafers, integrated circuits, data storage and optics industries. The predominant markets for the Company consist of semiconductor wafer and device manufacturing concerns as well as data storage device and disk drive manufacturers located in the United States, Japan, Europe and the Far East.

**2. Summary of Significant Accounting Policies**

*Principles of Consolidation*

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All significant intercompany transactions and balances have been eliminated.

Investments in companies in which the Company has a majority voting interest but does not have control due to significant minority stockholder rights and investments in 50% or less owned companies over which the Company has the ability to exercise significant influence are accounted for using the equity method. Investments in 20% or less owned companies are accounted for using the cost method (Note 4).

*Revenue Recognition*

The Company recognizes revenue from sales of systems upon shipment provided title and risk of loss has passed to the customer, persuasive evidence of an arrangement exists, fees are fixed or determinable and collectibility is reasonably assured. For some of the Company's sales transactions, a portion, usually 10%, of the fee is not due until installation occurs and the customer accepts the product. If the Company has met defined customer acceptance experience levels with a specific type of product, these transactions are accounted for as multiple-element arrangements with the deferral of the portion of the fee not due until installation is complete and customer acceptance has occurred. The portion of the fee related to the installation of the product and customer training is classified as service revenue. All other sales with customer acceptance provisions are recognized as revenue upon customer acceptance. To the extent that the Company grants payment terms in excess of its normal payment terms, those amounts are deferred and recognized as revenue when the payments become due.

The Company's transactions frequently involve the sales of systems and services under multiple element arrangements. Revenue under multiple element arrangements is allocated to all elements except systems based upon the fair value of those elements. The amounts allocated to training are based upon the price charged when this element is sold separately and unaccompanied by the other elements. The amount allocated

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to installation revenue is based upon hourly rates and the estimated time to complete the service. The amount allocated to system and parts is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered elements, based on their fair values, with the remainder being allocated to systems revenue. Installation and training are not essential to the functionality of systems as these services do not alter the equipment's capabilities, are available from other vendors and the systems are standard products.

The Company accrues for anticipated warranty costs upon shipment. Service revenue is recognized as the services are performed provided collection of the related receivable is reasonably assured. Service contract revenue is recognized ratably over the contractual periods in which the services are provided. The Company does not provide the right to return products. Revenue from software licenses is recognized

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when an agreement has been executed, software has been delivered, fees are fixed or determinable and collection of the related receivable is reasonably assured. Revenue from software consulting services provided on a time and reimbursable expense basis is recognized as the services are provided.

### *Cash and Cash Equivalents*

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. The Company invests its excess cash in money market accounts. These investments are subject to minimal credit and market risks. At April 30, 2002 and 2001, the Company has classified its cash equivalent investments totaling approximately \$23,857,000 and \$26,678,000, respectively, as available-for-sale. The carrying amount of these investments approximates fair market value.

### *Marketable Securities*

The Company classifies its marketable securities as available-for-sale in accordance with the provisions of Statement of Financial Accounting Standard ("SFAS") No. 115, "Accounting for Certain Investments in Debt and Equity Securities." Securities classified as available-for-sale are reported at fair market value with the related unrealized gains and losses included, net of tax, in accumulated other comprehensive income (loss). Gross unrealized gains on securities for the years ended April 30, 2002, 2001 and 2000, the cost of which is based upon the specific identification method, were \$658,000, \$1,413,000 and \$0, respectively.

### *Inventories*

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

### *Fixed Assets*

Fixed assets are stated at cost. Additions and betterments, unless of a relatively minor amount, are capitalized. Expenditures for normal maintenance and repairs are charged to expense as incurred. Depreciation is provided by use of the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized over the shorter of their useful life or the remaining life of the lease.

### *Intangible Assets*

Intangible assets consist of capitalized license fees for software included in the Company's products as well as goodwill obtained through the acquisition of the Semiconductor Solutions Division of LPA Software, Inc. ("SSD") in September 1997. Goodwill of \$2,407,000 related to the acquisition of SSD is amortized on a straight-line basis over ten years. Accumulated amortization on the goodwill at April 30, 2002 and 2001 was \$1,089,000 and \$854,000, respectively. Capitalized license fees of \$2,900,000 for software included in the Company's products is amortized at the greater of 1) the ratio that current gross revenue for the related products bears to the total current and anticipated future gross revenue for those products or 2) on a straight-line basis over its estimated useful life. Accumulated amortization on the license fees at April 30, 2002 and 2001 was \$1,618,000 and \$1,168,000, respectively.

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### *Impairment of Long-Lived Assets*

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The Company evaluates its long-lived assets, including goodwill, for impairment whenever events or other factors may indicate that the carrying amount may not be recoverable. Recoverability is measured by the carrying value of the asset against any undiscounted future net cash flow projections expected to be generated by the asset. If the asset is considered to be impaired, the impairment to be expensed is the excess carrying value over the fair market value of the asset. During the year ended April 30, 2001, the Company determined that the remaining value of the assembled workforce intangible asset obtained in the SSD acquisition was impaired and recorded an expense of \$228,000, which was included in general and administrative expenses. At April 30, 2002 and 2001, all other long-lived assets, including goodwill, were not impaired.

### *Concentrations*

#### *Credit Risk*

Financial instruments that potentially expose the Company to concentration of credit risk include cash, cash equivalents, marketable securities and trade accounts receivable. A significant amount of the Company's cash and cash equivalents are held by three financial institutions. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to \$100,000. Uninsured cash balances totaled approximately \$1,431,000 and \$1,767,000 at April 30, 2002 and 2001, respectively. The Company does not believe that such deposits are subject to any unusual credit risk associated with operating its business.

The Company's customer base primarily consists of semiconductor wafer, semiconductor device and data storage manufacturers. Accounts receivable from two customers accounted for approximately 32% and 29% of total accounts receivable at April 30, 2002 and 2001, respectively. The Company performs ongoing credit evaluations of our customers' financial condition and has used letters of credit from financial institutions to secure payments, although it generally does not require collateral. The Company maintains reserves for potential credit losses.

#### *Suppliers*

Certain of the components and subassemblies incorporated into the Company's systems are obtained from a single source or a limited group of suppliers. The Company seeks to reduce the impact from its dependence on those sole and limited source suppliers by considering alternate sources of supply, alternate designs for its products and by maintaining an adequate supply of the components and subassemblies. However, the loss of one or more of the sole or limited suppliers could cause a delay in manufacturing and a potential loss of sales, which could affect operating results adversely.

#### *Financial Instruments*

The carrying amount of the Company's financial instruments, which include cash, cash equivalents, marketable securities, accounts receivable, accounts payable, accrued expenses, and long-term debt, approximates their fair value at the balance sheet dates.

#### *Comprehensive Income*

Statement of Financial Accounting Standards No. 130, "Reporting Comprehensive Income" ("SFAS 130") requires that changes in comprehensive income be shown in a financial statement that is

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displayed with the same prominence as other financial statements. The Company has presented accumulated other comprehensive income and other comprehensive income in the Consolidated Statement of Stockholders' Equity. Other comprehensive income consists primarily of unrealized gains on marketable securities.

#### *Advertising Expense*

The Company recognizes advertising expense as incurred. Advertising expense was approximately \$227,000, \$268,000 and \$143,000 for the years ended April 30, 2002, 2001 and 2000, respectively.

#### *Stock-Based Compensation*

Stock-based compensation awards to employees under the Company's stock plans are accounted for using the intrinsic value method prescribed in Accounting Principles Board Opinion ("APB") No. 25, "Accounting for Stock Issued to Employees," and related interpretations. The Company has adopted the disclosure requirements of Statement of Financial Accounting Standards No. 123, ("SFAS No.123") "Accounting for Stock-Based Compensation."

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### *Earnings (Loss) Per Share*

Earnings (loss) per share are presented in accordance with Statement of Financial Accounting Standards No. 128, "Earnings Per Share" ("SFAS 128"), which requires the presentation of "basic" earnings per share and "diluted" earnings per share. Basic earnings (loss) per share is computed by dividing net income (loss) available to common stockholders by the weighted average number of common shares outstanding for the period. Diluted earnings per share is computed using the weighted average number of common shares outstanding and gives effect to all dilutive potential common shares outstanding during the period. Potential common shares include shares issuable upon the assumed exercise of dilutive stock options. For the years ended April 30, 2002, 2001 and 2000, respectively, 522,921, 377,400 and 256,976 common shares issuable upon the exercise of stock options are antidilutive.

The following is a reconciliation of the shares used in calculating basic and diluted earnings (loss) per share:

	Year ended April 30,		
	2002	2001	2000
	(in thousands)		
<b>Shares used in computation:</b>			
a. Weighted average common stock outstanding used in computation of basic earnings (loss) per share	13,615	13,507	13,353
b. Dilutive effect of stock options and warrants		247	
c. Shares used in computation of diluted earnings (loss) per share	13,615	13,754	13,353

### *Use of Estimates*

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amount of assets and

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liabilities and disclosure of contingencies at April 30, 2002 and 2001, and the reported amounts of revenue and expenses during the three year period ended April 30, 2002. Areas particularly subject to estimation include the allowance for doubtful accounts, the reserve for potential excess and obsolete inventory, the carrying value of the Company's intangible assets and the valuation allowance on deferred tax assets. Actual results could differ from those estimates.

### *New Accounting Pronouncements*

In July 2001, the FASB issued SFAS No. 141, "Business Combinations" and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 141 requires that all business combinations be accounted for under the purchase method only and that certain acquired intangible assets in a business combination be recognized as assets apart from goodwill. SFAS No. 142 requires that ratable amortization of goodwill be replaced with periodic tests of the goodwill's impairment and that intangible assets other than goodwill be amortized over their useful lives. SFAS No. 141 is effective for all business combinations initiated after June 30, 2001 and for all business combinations accounted for by the purchase method for which the date of acquisition is after June 30, 2001. The provisions of SFAS No. 142 are effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required, in fiscal year 2003. We believe the adoption of SFAS No. 141 and SFAS No. 142 will not have a material impact on our current financial position and results of operations. As of May 1, 2002 the Company will cease amortizing goodwill. Quarterly amortization for the year ended April 30, 2002 was approximately \$60,000.

In October 2001, the Financial Accounting Standards Board issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets," which is effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required in fiscal year 2003. SFAS No. 144 supersedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of" and provides a single accounting model for long-lived assets to be disposed of. We believe the adoption of SFAS No. 144 will not have a material impact on our current financial position and results of operations.

### 3. Change in Accounting Principle

In December 1999, the SEC issued Staff Accounting Bulletin No. 101, "Revenue Recognition in Financial Statements" ("SAB 101"). SAB 101 summarizes certain areas of the Staff's views in applying generally accepted accounting principles to revenue recognition in financial statements. Historically, for some of the Company's sales transactions, a portion of the sales price, usually 10%, was not due until installation occurs and the customer accepts the product. Under SAB 101 and the new accounting method adopted retroactive to May 1, 2000, the Company now defers the portion of the sales price not due until the customer has accepted the product. During the fourth quarter of the year ended April 30, 2001, the Company implemented the SEC's SAB 101 guidelines, retroactive to the beginning of the year. This was reported as a cumulative effect of a change in accounting principle as of May 1, 2000. The cumulative effect of the change in accounting principle on prior years resulted in a charge to income of \$1.8 million (net of income taxes of \$0), or \$0.13 per share, which has been included in income for the fiscal year ended April 30, 2001. For the fiscal year ended April 30, 2001, the Company recognized approximately \$1.7 million in revenue that is included in the cumulative effect adjustment as of May 1, 2000. The effect of that revenue increased income by \$1.4 million (net of \$0 in taxes) for the fiscal year ended April 30, 2001. The results for the first three quarters of the fiscal year ended April 30, 2001 have been restated to

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conform with SAB 101. The pro forma results for prior periods presented in the consolidated statement of operations were calculated assuming the accounting change was made retroactively to prior periods.

### 4. Investments

Investments in 50% or less owned companies over which the Company has the ability to exercise significant influence are accounted for using the equity method. Japan ADE Ltd. ("JAL"), a Japanese corporation, is an investment accounted for under the equity method at April 30, 2002 and 2001. The Company has a 50% investment in JAL, which has been the exclusive distributor of ADE dimensional products in Japan since 1986. Sales to JAL which have not in turn been sold to unrelated third parties at April 30, 2002 and 2001 have been eliminated, and the related profit on such sales is recorded as deferred income on sales to affiliate.

The financial position and results of operations of JAL was not significant compared to those of the Company as of and for the years ended April 30, 2002 and 2000. The financial position and results of operations of JAL was significant compared to those of the Company for the year ended April 30, 2001. Below is the summarized unaudited financial information for JAL for fiscal year ended April 30, 2001:

	<b>Year ended April 30, 2001</b>
	<b>(in thousands)</b>
Revenue	\$ 29,139
Gross profit	10,552
Net income	1,287
	<b>April 30, 2001</b>
Current assets	\$ 22,015
Noncurrent assets	2,098
Current liabilities	18,009
Noncurrent liabilities	6,103

The Company's share of the undistributed earnings of JAL was \$2,832,000 at April 30, 2002. The Company received \$109,000 in dividends from JAL during fiscal year 2002. At April 30, 2002, the Company's investment is approximately equal to the underlying net assets of the affiliated company.

At April 30, 2000, the Company also had a less than 20% investment in a company in the amount of \$500,000 that was accounted for using the cost method. During fiscal year 2001, this investee company was acquired by a publicly traded company. The Company's original \$500,000 investment was converted into shares of this publicly traded company, which have a readily determinable market value. The Company holds substantially less than 20% of this publicly traded company and has no ability to exercise significant influence. As a result, the shares of the publicly traded company received upon the acquisition of the investee company have been reclassified as available-for-sale marketable

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securities. At April 30, 2002, the fair market value of the shares held was \$2,571,000, resulting in an unrealized gain on marketable securities of \$658,000 for the year ended April 30, 2002. At April 30, 2001, the fair market value of the shares held was \$1,913,000, resulting in an unrealized gain on marketable securities of \$1,413,000 for the year ended April 30, 2001. The Company had paid \$1,500,000 to license technology for use in its products

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from this investee company. This license fee has been capitalized and is being amortized at the greater of 1) the ratio that current gross revenue for the related products bear to the total current and anticipated future gross revenue for those products or 2) on a straight line basis over its estimated useful life of 5 years. Related amortization expense of \$300,000 was recognized in both fiscal 2002 and 2001, respectively. This capitalized license technology had accumulated amortization of \$1,200,000 and \$900,000 at April 30, 2002 and 2001, respectively.

### 5. Inventories

Inventories consist of the following:

	April 30,	
	2002	2001
	(in thousands)	
Raw materials and purchased parts	\$ 16,228	\$ 16,910
Work-in-process	15,104	18,749
Finished goods	1,369	3,366
	\$ 32,701	\$ 39,025

### 6. Fixed Assets

Fixed assets consist of the following:

		April 30,	
	Useful life in years	2002	2001
		(in thousands)	
Land		\$ 2,722	\$ 2,722
Building and improvements	15 25	22,213	22,208
Machinery and equipment	3 10	17,553	14,650
Office equipment	3 10	6,824	6,485
Leasehold improvements	5	841	491
Construction-in-progress		2,688	728
		52,841	47,284
Less accumulated depreciation		22,183	17,715
		\$ 30,658	\$ 29,569

Depreciation expense for the years ended April 30, 2002, 2001 and 2000 was \$4,594,000, \$4,837,000, \$5,054,000, respectively.

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**7. Accrued Expenses and Other Current Liabilities**

Accrued expenses and other current liabilities consist of the following:

	April 30,	
	2002	2001
	(in thousands)	
Accrued salaries, wages, vacation pay and bonuses	\$ 2,223	\$ 2,342
Accrued commissions	1,191	1,341
Accrued warranty costs	1,146	1,899
Deferred revenue	4,537	11,655
Other	2,907	3,897
	\$ 12,004	\$ 21,134

**8. Borrowings**

*Long-term Debt*

In April 1999, the Company issued a tax exempt Industrial Development Bond through the Industrial Development Authority of the County of Pima, Arizona. The Company also issued tax exempt Industrial Development Bonds through the Massachusetts Industrial Finance Agency in December 1997 and June 1996. The face values of the April 1999 bond (the "1999 bond"), the December 1997 bond (the "1997 bond") and the June 1996 bond (the "1996 bond") were \$4,500,000, \$4,000,000 and \$5,500,000, respectively. The 1999 bond, 1997 bond and the 1996 bond bear interest at a rate of 5.52%, 5.79% and 5.74%, respectively, and provide for 50% of the principal to be paid over ten years from the dates of issuance with the remaining 50% due in March 2009, December 2007 and June 2006, respectively. Monthly payments of principal and accrued interest for the 1999 bond are approximately \$31,000. Monthly payments of principal and accrued interest for the 1997 bond commenced at approximately \$36,000 and decrease to approximately \$27,000 over the ten-year payment period. Monthly payments of principal and accrued interest for the 1996 bond are approximately \$43,000. The proceeds of the 1999 bond were used to fund the construction of a new manufacturing facility in Tucson, Arizona. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of credit, bearing a fee of 1.5% of the outstanding bond balance, is collateralized by a mortgage on the building and land. Under the terms of the letter of credit, the Company is required to comply with certain financial covenants. As of April 30, 2002, the Company is in compliance with these covenants. The proceeds of the 1997 bond were used to fund the acquisition and renovation of a manufacturing facility. The Company collateralized the issuance of this bond with cash, which is classified as restricted cash on the April 30, 2002 and 2001 balance sheet. The proceeds of the June 1996 bond were used to fund the acquisition and renovation of the manufacturing facility in the Company's headquarters site. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of

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credit, bearing a fee of 1.25% of the outstanding bond balance, is collateralized by a mortgage on the building and land. Future maturities of these bonds are as follows:

Year ending April 30,	(in thousands)
2003	\$ 646
2004	672
2005	699
2006	728
2007	3,167
Thereafter	5,449

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Year ending April 30,	(in thousands)
	\$ 11,361

**9. Employee Compensation Plans**

In April 1992, the Company adopted the 1992 Stock Option Plan (the "1992 Plan"). The 1992 Plan provides for the issuance to employees of options to purchase 479,000 shares of common stock plus any expired or canceled options granted pursuant to the Company's expired 1982 Stock Option Plan. In August 1995, the Company adopted the 1995 Stock Option Plan (the "1995 Plan"). The 1995 Plan provides for the issuance to employees of stock options or stock awards to purchase 400,000 shares of common stock. In October 1997, the Company adopted the 1997 Employee Stock Option Plan (the "1997 Plan"). The 1997 Plan provides for the issuance to employees of stock options or stock awards to purchase 500,000 shares plus the number of shares reserved under the 1995 Plan that have not been issued or have been issued and subsequently cancelled.

Options are granted under the 1992, 1995, 1997 Plans as either incentive stock options or non-qualified stock options and at exercise prices not less than the fair value of the stock on the date of grant or less than 110% of the fair value in the case of optionees holding more than 10% of the total combined voting power of all classes of stock of the Company. The terms of the options generally may not exceed ten years or five years in the case of optionees holding more than 10% of the total combined voting power of all classes of stock of the Company. The options are exercisable over periods determined by the compensation committee of the board of directors, generally at the rate of 20% per year, on a cumulative basis, beginning with the first anniversary of the date of grant.

During 2000, the Board of Directors adopted the Company's 2000 Employee Stock Option Plan (the "Plan"). Under the Plan, stock rights may be granted which are either (i) options intended to qualify as "incentive stock options" under Section 422(b) of the Internal Revenue Code of 1986, as amended, (ii) non-qualified stock options or (iii) awards of shares of common stock or the opportunity to make a direct purchase of shares of common stock. The Plan authorizes the issuance of up to 900,000 shares of the Company's common stock plus the number of shares of common stock previously reserved for granting of options under the 1995 Plan or the 1997 Plan which are not granted under either of these plans or which are not exercised and cease to be outstanding by reason of cancellation or otherwise. The options are exercisable over periods determined by the compensation committee of the board of directors, generally at the rate of 5% per quarter, on a cumulative basis, beginning with the first anniversary of the date of grant. At April 30, 2002, 509,434 shares were available for future grants under the Company's stock option plans.

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In October 1996, the Board of Directors adopted the Employee Stock Purchase Plan (the "Purchase Plan"), effective as of October 1, 1996. The Purchase Plan provides full-time employees, nearly all of whom are eligible to participate, the opportunity to purchase common shares, on a quarterly basis, at 85% of the fair market value of the shares on either the first or last day of the applicable quarter, whichever is lower. The original term of the Purchase Plan was for five years, and the Company has authorized 1,000,000 shares of the Company's common stock for issuance under the Purchase Plan. In October 2001, the Board of Directors adopted an amendment to the Purchase Plan to extend the term of the Plan by five years. Under the Purchase Plan, the Company sold 48,590, 37,761 and 45,414 shares to employees in fiscal years 2002, 2001 and 2000, respectively. At April 30, 2002, the Company has reserved 777,382 shares of common stock for issuance to employees under the Purchase Plan.

The Company applies APB No. 25 and related interpretations in accounting for stock-based compensation. The Company has recognized compensation expense of \$0, \$21,000 and \$61,000, respectively, in fiscal years 2002, 2001 and 2000 for stock-based compensation. Had compensation cost for the stock-based compensation been determined based on the fair value at the grant dates of awards consistent with the provisions of SFAS No. 123, the Company's net income (loss) and earnings (loss) per share would have been reduced to the pro forma amounts as follows:

Year ended April 30,		
2002	2001	2000
(In thousands, except per share data)		

Net income (loss):

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	Year ended April 30,		
As reported	\$ (23,125)	\$ 508	\$ (20,447)
Pro forma	\$ (25,364)	\$ (1,843)	\$ (22,413)
Basic earnings (loss) per share:			
As reported	\$ (1.70)	\$ 0.04	\$ (1.53)
Pro forma	\$ (1.86)	\$ (0.14)	\$ (1.68)
Diluted earnings (loss) per share:			
As reported	\$ (1.70)	\$ 0.04	\$ (1.53)
Pro forma	\$ (1.86)	\$ (0.14)	\$ (1.68)

The fair value of each option and purchase right grant was estimated on the grant date using the Black-Scholes option-pricing model with the following weighted average assumptions for fiscal years 2002, 2001 and 2000: no dividend yield; risk free interest rates of 4.7%, 5.1% and 6.6%, respectively; expected option terms of 6 years, 7 years and 6 years, respectively, and expected purchase right terms of three months; volatility of 54% for options and purchase rights granted in fiscal 2002, 62% for options and purchase rights granted in fiscal year 2001 and 58% for options and purchase rights granted in fiscal 2000. The weighted average fair value per option for options granted with option exercise prices equal to the fair value of the underlying common stock in fiscal years 2002, 2001 and 2000 was \$6.35, \$12.15 and \$10.31, respectively. The weighted average fair value per purchase right for purchase rights granted in fiscal years 2002, 2001 and 2000 was \$5.48, \$4.96 and \$3.12, respectively.

Because options vest over several years and additional option and purchase right grants are expected to be made in subsequent years, the pro forma impact on fiscal years 2002, 2001 and 2000 is not necessarily representative of the pro forma effects of reported net income and earnings per share for future years.

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Stock option activity is summarized as follows:

	Number of shares	Weighted average exercise price
Options outstanding at April 30, 1999	759,750	\$ 9.06
Granted	273,965	16.38
Exercised	(162,590)	6.33
Canceled	(138,780)	13.71
Options outstanding at April 30, 2000	732,345	11.53
Granted	454,625	18.67
Exercised	(32,700)	7.26
Canceled	(54,625)	14.46
Options outstanding at April 30, 2001	1,099,645	14.46
Granted	293,500	10.39
Exercised	(74,235)	9.19
Canceled	(153,169)	14.21
Options outstanding at April 30, 2002	1,165,741	\$ 13.81

The number and weighted average exercise price of options exercisable at April 30, 2002, 2001 and 2000 was 414,824 and \$13.06; 285,904 and \$11.43; and 172,660 and \$9.43, respectively.

The following table summarizes information about stock options outstanding at April 30, 2002:

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Range of exercise prices	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted average remaining contractual life (years)	Weighted average exercise price	Number exercisable	Weighted average exercise price
\$4.15 \$5.88	33,400	1.9	\$ 4.43	33,400	\$ 4.43
\$8.38 \$10.03	500,770	7.1	9.32	162,310	9.04
\$11.25 \$14.75	157,850	6.8	12.97	66,950	13.02
\$15.06 \$21.16	473,521	7.4	19.48	151,964	19.23
\$41.25	200	5.3	41.25	200	41.25
	<b>1,165,741</b>	<b>7.1</b>	<b>\$ 13.81</b>	<b>414,824</b>	<b>\$ 13.06</b>

**10. Stockholders' Equity**

*Reserved Shares*

At April 30, 2002, the Company has reserved 1,286,816 shares of common stock for issuance upon the grant and exercise of available common stock options and for issuance to employees under the Purchase Plan.

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*Preferred Stock*

The Company has 1,000,000 shares of \$1.00 par value preferred stock authorized. Shares of preferred stock may be issued at the discretion of the Board of Directors of the Company with such designation, rights and preferences as the Board may determine from time to time. The preferred stock may have voting rights, preferences as to dividends and liquidation, conversion and redemption rights and sinking fund provisions, which are more expansive than those of the holders of the common stock.

**11. Segment, Geographic and Significant Customer Information**

The Company has three reportable segments: ADE Semiconductor Systems Group ("SSG"), ADE Phase Shift ("PST") and ADE Technologies ("ATI"). SSG manufactures and markets metrology and inspection systems to the semiconductor wafer and device manufacturing industries that are used to improve yield and capital productivity. PST manufactures and markets high performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics industries. ATI manufactures and markets high precision magnetic characterization and non-contact dimensional metrology gaging systems primarily to the data storage industry. Sales of the Company's stand-alone software products and software consulting services were included in the "other" category and are now reported in the SSG segment.

The Company's reportable segments are determined based upon the nature of the products, the external customers and customer industries and the sales and distribution methods used to market the products. The accounting policies of the segments are the same as those described in the summary of significant accounting policies. The Company evaluates performance based upon profit or loss from operations. The Company does not measure the assets allocated to the segments. Management fees representing certain services provided by corporate offices have been allocated to each of the reportable segments based upon the usage of those services by each segment. Additionally, other income (loss), the provision for (benefit from) income taxes and the equity in net earnings (losses) of affiliated companies are not included in segment profitability.

Some sales to JAL, ADE's 50% affiliate, are reflected in segment revenue during the period they are shipped by the respective segment, which can differ from the period the revenue is recognized for consolidated financial reporting purposes. For the reportable segments, intercompany sales are recorded at 60% of the domestic list price of the respective product.

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SSG	PST	ATI	Total
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	<u>SSG</u>	<u>PST</u>	<u>ATI</u>	<u>Total</u>
	(in thousands)			
<b>For the year ended April 30, 2002</b>				
Revenue from external customers	\$ 61,369	\$ 8,623	\$ 8,519	\$ 78,511
Intersegment revenue	596	1,897	1,003	3,496
Loss from operations	(13,702)	(760)	(801)	(15,263)
Depreciation and amortization expense	4,636	422	222	5,280
Capital expenditures	5,320	217	146	5,683
<b>For the year ended April 30, 2001</b>				
Revenue from external customers	\$ 81,497	\$ 10,711	\$ 10,836	\$ 103,044
Intersegment revenue	319		581	900
Income (loss) from operations	2,996	278	(474)	2,800
Depreciation and amortization expense	5,186	318	289	5,793
Capital expenditures	3,184	278	220	3,682
<b>For the year ended April 30, 2000</b>				
Revenue from external customers	\$ 44,965	\$ 6,400	\$ 9,235	\$ 60,600
Intersegment revenue	1,079		315	1,394
Loss from operations	(18,541)	(1,518)	(1,642)	(21,701)
Depreciation and amortization expense	5,215	253	412	5,880
Capital expenditures	6,889	354	266	7,509

The following is a reconciliation for the above items where aggregate reportable segment amounts differ from amounts contained in the Company's consolidated financial statements.

	<u>Year ended April 30,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>
	(in thousands)		
Total external revenue for reportable segments	\$ 78,511	\$ 103,044	\$ 60,600
Net impact of revenue recognition on sales to affiliate	3,295	(2,861)	1,906
<b>Total consolidated revenue</b>	<b>\$ 81,806</b>	<b>\$ 100,183</b>	<b>\$ 62,506</b>
Total operating profit (loss) for reportable segments	\$ (15,263)	\$ 2,800	\$ (21,701)
Net impact of intercompany gross profit eliminations and deferred profit on sales to affiliate	1,800	(1,602)	1,565
<b>Total consolidated operating profit (loss)</b>	<b>\$ (13,463)</b>	<b>\$ 1,198</b>	<b>\$ (20,136)</b>

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Revenue by geographic area is summarized as follows:

	<u>Year ended April 30,</u>		
	<u>2002</u>	<u>2001</u>	<u>2000</u>

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	Year ended April 30,		
	(in thousands)		
United States	\$ 18,499	\$ 36,583	\$ 22,372
Japan	28,367	24,303	16,256
Taiwan	5,386	10,226	4,452
Europe	14,020	11,196	10,688
Asia	15,534	17,875	8,738
	\$ 81,806	\$ 100,183	\$ 62,506

Revenue from JAL in fiscal years 2002, 2001 and 2000 totaled \$23,113,000 (28%), \$15,452,000 (15%), and \$8,787,000 (14%), respectively. Revenue from another customer in fiscal years 2002, 2001 and 2000 totaled \$9,622,000 (12%), \$12,318,000 (12%), and \$3,825,000 (6%), respectively. Revenue from a third customer in fiscal 2002, 2001 and 2000 totaled \$4,695,000 (6%), \$7,865,000 (8%), and \$5,635,000 (9%), respectively. As of April 30, 2002, 2001 and 2000, all of the Company's long-lived assets are located in the United States except for \$583,000, \$589,000, and \$269,000, respectively.

## 12. Income Taxes

The provision for (benefit from) income taxes consists of:

	Year ended April 30,		
	2002	2001	2000
	(in thousands)		
Current tax expense (benefit):			
Federal	\$ (200)	\$ 212	\$
Foreign		45	82
State	26	(220)	20
	(174)	37	102
Deferred tax expense (benefit):			
Federal	9,754		
State	836		
	10,590		
	\$ 10,416	\$ 37	\$ 102

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## 12. Income Taxes (Continued)

The significant components of deferred tax assets and liabilities consist of the following:

	2002	2001
Deferred tax assets:		

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	<u>2002</u>	<u>2001</u>
Inventories, due to reserves and additional costs inventoried for tax purposes	\$ 5,158	\$ 5,020
Acquired in-process research and development and intangibles	2,207	2,372
Accrued expenses	1,499	1,859
Deferred revenue	1,602	3,383
Deferred profit on sales to affiliates	917	728
Net operating loss and other carryforwards	18,672	9,190
Bad debt reserve	285	349
Depreciation	162	124
Other	309	203
	<u>          </u>	<u>          </u>
Gross deferred tax assets	30,811	23,228
Deferred tax valuation allowance	(30,811)	(12,638)
	<u>          </u>	<u>          </u>
Net deferred tax assets		10,590
Deferred tax liabilities:		
Depreciation		
	<u>          </u>	<u>          </u>
Total net deferred tax assets	\$	\$ 10,590
	<u>          </u>	<u>          </u>

Deferred income taxes reflect the tax impact of temporary differences between the amount of assets and liabilities for financial reporting purposes and such amounts as measured by tax laws and regulations. Under Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes", the benefit associated with future deductible temporary differences is recognized if it is more likely than not that the benefit will be realized. The measurement of deferred tax assets is reduced by a valuation allowance if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

During the second quarter of the year ended April 30, 2002, as a result of current year operating losses to date, anticipated additional operating losses for the third quarter of 2002, an expected operating loss for fiscal 2002, and uncertainty as to the extent and timing of profitability in future periods, the Company recorded an additional valuation allowance to reserve the remaining deferred tax assets, resulting in income tax expense of \$10.6 million. The Company currently has a full valuation allowance. As of April 30, 2002, the Company has available unused operating loss carryforwards, which may be applied against future taxable income. Net operating loss carryforwards generated in fiscal 2000 and 2002 begin to expire in fiscal 2005 for state purposes and in fiscal 2020 for federal purposes.

Additionally, a valuation allowance of \$336,000 has been recorded at April 30, 2001 and 2000 to reflect net operating carryforwards, which will expire before they can be used due to ownership change limitations. These carryforwards began to expire in the year 2000. Net operating loss carryforwards remaining at April 30, 2002 and 2001, not limited in their use due to ownership changes, totaled \$39,788,000 and \$22,040,000, respectively. Included in the net operating loss carryforwards for April 30,

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2002 and 2001 are \$24,015,000 and \$18,334,000, respectively, of state net operating losses that are only available to offset taxable state income.

The Company does not provide for taxes which would be payable if undistributed earnings of its foreign affiliates were remitted because the Company either considers these earnings to be invested for an indefinite period or anticipates that if such earnings were distributed, the U.S. income taxes payable would be substantially offset by foreign tax credits.

The following is a reconciliation between the amount of reported income tax expense (benefit) and the amount computed using the U.S. Federal Statutory rate of 35% for fiscal 2002, 2001 and 2000:

Year ended April 30,

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	Year ended April 30,		
	2002	2001	2000
	(in thousands)		
Statutory federal rate	\$ (7,893)	\$ 190	\$ (6,411)
State taxes, net of federal benefit	17	(220)	(488)
Valuation allowance	18,173		7,060
Other	119	67	(59)
	<u>\$ 10,416</u>	<u>\$ 37</u>	<u>\$ 102</u>

### 13. Incentive Savings and Profit Sharing Plan

The Company has an incentive savings and profit sharing plan covering substantially all employees who wish to participate and meet minimum age and service requirements. Annual Company contributions are determined by the Board of Directors and are limited to the maximum amount deductible under the Internal Revenue Code. Company contributions for fiscal 2002, 2001 and 2000 were approximately \$547,000, \$671,000, and \$596,000, respectively.

### 14. Commitments and Contingencies

The Company leases land and certain buildings, machinery and equipment under operating leases, which expire through 2006. Under the terms of the leases, the Company is responsible for normal maintenance, utility expenses and taxes and pays a monthly property management fee on certain leases.

Future minimum lease payments under operating leases, including management fees, are as follows:

Year ending April 30,	(in thousands)
2003	\$ 855
2004	758
2005	550
2006	466
2007	207
	<u>\$ 2,836</u>

Total rent expense under non-cancelable operating leases was approximately \$768,000, \$826,000, and \$1,436,000 for the years ended April 30, 2002, 2001 and 2000, respectively.

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On October 12, 2000, the Company filed a patent infringement lawsuit against KLA-Tencor ("KLA"), a competitor, in the U.S. District Court in Delaware. The Company seeks damages and a permanent injunction against further infringement upon United States Patent Number 6,118,525, entitled "Wafer Inspection System for Distinguishing Pits and Particles." On November 22, 2000, KLA filed a counterclaim in the United States District Court in Delaware that ADE has infringed upon three patents owned by KLA. KLA is seeking damages for patent infringement and a permanent injunction against any future infringement activity. In addition, KLA has asked the District Court for a declaration that United States Patent Number 6,118,525, owned by ADE, is invalid and not infringed upon by KLA. At this time, the Company cannot predict the outcome or the amount of gain or loss, if any.

In addition to the matter noted above, from time to time the Company is subject to legal proceedings and claims in the ordinary course of business. In the opinion of management, the amount of ultimate expense with respect to any other current legal proceedings and claims will not have a material adverse effect on the Company's financial position or results of operations.



## 15. Supplemental Disclosures of Cash Flow Information

	Year ended April 30,		
	2002	2001	2000
Cash paid during the year			
Interest	\$ 660	\$ 695	\$ 728
Income taxes paid (refunds received), net	\$ (39)	\$ (329)	\$ (8,732)

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## FINANCIAL STATEMENT SCHEDULE

(In thousands)

## Schedule II Valuation and Qualifying Accounts and Reserves

Description	Balance at May 1, 1999	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2000
Allowance for doubtful accounts	\$ 820	\$ 339	\$	\$ (530)	\$ 629
Inventory obsolescence	8,679			(1,730)	6,949
Deferred tax asset valuation allowance	3,336	7,060			10,396
Description	Balance at May 1, 2000	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2001
Allowance for doubtful accounts	\$ 629	\$ 291	\$	\$ (3)	\$ 917
Inventory obsolescence	6,949	1,927		(727)	8,149
Deferred tax asset valuation allowance	10,396	2,242			12,638
Description	Balance at May 1, 2001	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2002
Allowance for doubtful accounts	\$ 917	\$	\$	\$ (218)	\$ 699
Inventory obsolescence	8,149	400			8,549
Deferred tax asset valuation allowance	12,638	18,173			30,811

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## QuickLinks

DOCUMENTS INCORPORATED BY REFERENCEPART IPART IIPART IIIPART IVSIGNATURESREPORT OF INDEPENDENT ACCOUNTANTSADE CORPORATION CONSOLIDATED BALANCE SHEETS (In thousands, except share data)ADE CORPORATION CONSOLIDATED STATEMENTS OF OPERATIONS (In thousands, except per share data)

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ADE CORPORATION CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (In thousands, except share data)

ADE CORPORATION CONSOLIDATED STATEMENTS OF CASH FLOWS (In thousands)

ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

FINANCIAL STATEMENT SCHEDULE (In thousands)