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ADE CORP
Form 10-K
July 30, 2001

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

/X/ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

FOR THE FISCAL YEAR ENDED APRIL 30, 2001
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
(IRS 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

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filing requirements for the past 90 days. Yes /X/ 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 10K or any amendment to this Form 10-K. / /

As of July 24, 2001, there were outstanding 13,601,061 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 \$196,535,000.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for the 2001 Annual Meeting of Stockholders are incorporated by reference into Part III.

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 "RISK FACTORS", "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 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'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 plug and play metrology and inspection units that are combined with modular handling platforms and software analysis packages. Responsive to the wide range of production needs that our customers have required over the past decades, ADE designs focus on a modular approach which targets the lowest cost of ownership for a system at any given process step. The software analysis packages maximize information timeliness and availability while minimizing demands on customers' engineering staff.

PRODUCTS

Our products have evolved from single instruments used in off-line engineering analysis to full, 100% online automated metrology solutions

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throughout the wafer and disk manufacturing processes. Our systems are designed 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 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, offline analysis, and SEMI standard Silicon Wafer Order Form (SWOF) quality certification.

SEMICONDUCTOR INDUSTRY PRODUCTS

ADVANCED FLATNESS SYSTEM. The AFS system advances ADE's established capacitance technology to 130nm 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 wafer flatness.

ULTRAGAGE-REGISTERED TRADEMARK- 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. The UltraGage series includes the 9530 model, which has been optimized to handle the ultra-thin processed wafers used in the manufacture of devices for smart cards and advanced electronic packages. UltraGage systems were designed to operate together with specialized applications software to be used to manage the device manufacturing process. The latest 9900

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UltraGage systems meet 180nm technology requirements, allowing ADE customers to meet advanced industry needs for flat wafers without having to retool their manufacturing plants.

ULTRASCAN-REGISTERED TRADEMARK- SERIES. The UltraScan series of products are high throughput, 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. The UltraScan series systems support customer requirements at the 0.35um, 0.25um, and the 180nm design rule technologies.

WAFERCHECK-REGISTERED TRADEMARK- 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. The products combine an automated transfer belt module with one or more customer selected measurement modules into a single, floor mounted system. 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.

ADVANCED WAFER INSPECTION SYSTEM. The AWIS system is a fully automated inspection tool designed to handle the advanced surface inspecting requirements of 200 and 300mm polished and epi 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 exceeds the 130nm design rules for

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high speed sorting applications.

CR8X SERIES. The CR8X series products are high throughput, 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. These tools rely on ADE's proprietary flying spot laser scanning technology. The CR8X systems can be integrated with factory automation systems. We offer a variety of software packages to tailor the system to specific customer requirements.

SURFACE QUALITY MONITOR. The Surface Quality Monitor (SQM) is a new feature on our wafer inspection systems; CR8X and AWIS. This feature 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 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. This measurement is being applied to both 200 and 300mm wafer diameters.

NANOMAPPER-TM-. The NanoMapper system is a 200 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 includes 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 130 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 the year 2000 and is the standard for 300mm nanotopography characterization.

ACUDEP-TM- 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.

EPISCAN-TM- 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.,

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On-Line Products. The newest addition to the EpiScan product line is the EpiScan 3000 system, which includes full edge grip handling for 300mm wafers.

ACUMAP-TM- SERIES. AcuMap systems are full-wafer film thickness monitoring tools for SOI, CMP and photolithography applications. In SOI processing, AcuMap measurements are used to monitor the thickness of both the silicon layer and new AcuMap 3110 is designed for 300mm.

INFOTOOLS-TM- SOFTWARE SUITE. The InfoTools product is an offline application suite of productivity tools for ADE's dimensional AFS, UltraScan, UltraGage and WaferCheck systems. InfoTools software includes the ReportTools-TM- software for offline processing of wafer data and the RecipeTools-TM- application for centralized process recipe management. Use of the InfoTools product increases machine availability and leads to a lower cost of ownership of an ADE tool.

WAFERANALYZER-TM-. This offline software package increases productivity in a wafer production polishing area by automating the advanced analytical

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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.

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, the most advanced Vector VSM available in the industry for research on directional properties of magnetic materials.

WAFER MAPPING SYSTEM (WMS). The Wafer Mapping System (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 prealigner, and an MR measurement option, allows users to manage process uniformity in order to improve overall yield.

M2 DISKMAPPER-TM-. 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.

PROPRIETARY ADE CAPACITANCE TECHNOLOGY

MICROSENSE-REGISTERED TRADEMARK- 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 manufactures. It has also achieved success in specialized applications such as fast tool servo control outside of the disk drive market.

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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 3700 motor test system with ADE's noncontact dimensional gaging provides disk motor manufactures with motor shaft runout measurements in both time and frequency domains. This software allows users to define sophisticated pass/fail criteria for production testing.

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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.

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.

OPTIFLAT FLATNESS GAGE. Similar to the MiniFIZ product, the OptiFLAT system is an accurate surface flatness tester primarily utilized to characterize the surface waviness of hard disks in order to improve and maintain process control in the hard disk manufacturing process. Waviness is a range of medium to high frequency surface features which is now gage is also uniquely suited to measure the flatness of uncoated transparent disk substrates.

PRODUCTS IN DEVELOPMENT

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

SERIES 4800 PASSIVE GAGING. The 4800 series of capacitive gages represents substantial improvement in the performance of ADE's very successful passive gaging product line. The new 4800 series offers significantly higher resolution and bandwidth as well as improved stability and new features. This product is designed to be used by OEM's in a wide variety of industries and will be part of a new modular measure system used for general gaging applications.

TECHNOLOGY

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.

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SURFACE INSPECTION TECHNOLOGY

We use optical methods 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, nanotopography 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 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 rugged, industrial strength Fourier Transform Infrared Spectroscopy Technology to us for incorporation into metrology tools for the wafer market. We are integrating 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

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

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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 70% 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.

Sales of dimensional systems in Japan are supported by Japan ADE Limited, a joint venture between us and Kanematsu Electronics, Ltd. Sales of optical 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, India 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 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, publication of articles in trade journals, in industry forums and 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 offer warranties of up to twelve months covering the performance and reliability of our products.

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CUSTOMERS

Our customers include all of the leading semiconductor wafer manufacturers and many of the leading semiconductor device and 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 2001, 2000 and 1999, sales to our top five customers accounted for approximately 46.1%, 45.8% and 45.1%, respectively, of our revenue. During fiscal year 2001 one of our customers accounted for 15.4% of our revenue. During the past fiscal year, approximately 69.1% 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

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Formosa Komatsu
MEMC Electronic Materials
Mitsubishi Silicon
Pure Wafer, Ltd.
Shin-Etsu Handotai
Siltron
Sumitomo Sitix Silicon
Wacker Siltronic

SEMICONDUCTOR DEVICE MANUFACTURERS

IBM
Intel
Micron Technology
Motorola
ST Microelectronics
Texas Instruments

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 changes 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 2001, 2000 and 1999, our research and development expenditures were \$22.6 million, \$21.9 million and \$24.0 million, respectively, representing 22.5%, 35.0% and 39.5% 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.

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BACKLOG

Backlog increased to approximately \$53.6 million at April 30, 2001 from approximately \$30.4 million at April 30, 2000. This increase in backlog is primarily attributable to an increase in demand for capital equipment in the semiconductor industry during the first nine months of calendar year 2000. 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.

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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, in Newton, Massachusetts, where non-contact capacitive, dimensional metrology for gaging products and magnetic characterization products for the data storage industry are manufactured, in Tucson, Arizona, where interferometric based surface metrology products are manufactured and in Bethel, Connecticut, where optical and infrared based thin film thickness metrology products are manufactured. 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, however, that our success depends to a greater 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 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 24, 2001 we hold 33 United States patents and 19 foreign patents covering existing and potential products and have applied for 13 additional patents in the United States and 35 additional foreign patents. We have licensed certain patents and other intellectual property to a number of companies.

EMPLOYEES

As of April 30, 2001, we employed approximately 613 persons at all of our locations. 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.

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EXECUTIVE OFFICERS

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

NAME	AGE	POSITION
Robert C. Abbe.....	63	President and Chief Executive Officer
Brian C. James.....	50	Vice President, Treasurer and Chief Financial Officer
AK Lum.....	52	Vice President and General Manager of ADE Semiconductor Systems

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Chris L. Koliopoulos.....	48	Vice President and President of ADE Phase Shift, Inc.
Noel S. Poduje.....	56	Vice President of Strategic Technology Development

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.

Robert C. Abbe founded ADE in 1967. Since that time, he has served as President, Chief Executive Officer and a Director of ADE. Mr. Abbe received an AB in Physics from Harvard College.

Brian C. James joined ADE in August, 2000 and serves as 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.

Chris L. Koliopoulos joined ADE in June, 1998 through the merger with Phase Shift Technology, Inc., which became a wholly owned subsidiary of ADE. Dr. Koliopoulos was President and founder of Phase Shift Technology, has served as a Vice President of ADE and President of ADE Phase Shift since the merger and is a Director of ADE. Dr. Koliopoulos received a BS from the University of Rochester and an MS and PhD from the University of Arizona.

AK Lum joined ADE in 1998 and has served as Vice President and General Manager of ADE Semiconductor Systems Group. From 1997 to 1998, Mr. Lum served as Vice President of Manufacturing of Epson Portland Inc. From 1974 to 1997, Mr. Lum served Shin-Etsu Handotai-Group in various senior management positions. Mr. Lum received a BA in electrical engineering from University of Technology, Malaysia, and an MBA from City University, State of Washington.

Noel S. Poduje joined ADE in 1972 and has served as Vice President of Strategic Technology Development since 1985. Mr. Poduje received a BS in Electrical Engineering from the Massachusetts Institute of Technology.

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

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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. and KLA-Tencor Corporation, both 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.

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 2001, 2000 and 1999, sales to our top five customers in each period accounted for approximately 46.1%, 45.8% and 45.1%, respectively, of our revenue. 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 2001, 2000 and 1999, we derived 69.1%, 58.3% and 57.7% 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

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a material adverse effect on our financial results. See Notes 2 and 13 of Notes to Consolidated Financial Statements.

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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

International sales accounted for 63.5%, 64.2% and 59.3% of our revenue for fiscal years 2001, 2000 and 1999, respectively. See Note 13 of Notes to Consolidated Financial Statements. 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 historically approximately 45%--50% of our revenue has come from Asia, financial instability in certain Asian countries could materially affect our competitive position and consequently, financial results.

ACQUISITIONS AND ALLIANCES

ADE has addressed the need to offer new products, in part, through the acquisition of technology and other businesses. The acquisition of other businesses involves numerous risks, including:

- Difficulties assimilating the operations, technologies and products of acquired businesses.
- Diversion of management's attention from other business concerns.
- Entering markets in which we have no or limited direct prior experience and must compete with competitors having stronger market positions.
- Potential loss of key employees of the acquired business.

Integrating acquired businesses requires, among other things, integration of product offerings and coordination of sales, marketing, research and development and management organizations. There can be no assurance that such integration will be accomplished smoothly or successfully. The difficulties of integration may be increased by the necessity of coordinating organizations that are separated geographically. The inability of management to successfully integrate the operations of any acquired businesses could have a material adverse effect on our business and results of operations.

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ITEM 2. PROPERTIES

Our corporate headquarters and principal manufacturing operations of our ADE Semiconductor Systems Group are located in an approximately 118,000 square foot company-owned building in Westwood, Massachusetts. We own and occupy a 60,000 square foot building in Tucson, Arizona, which contains the headquarters and manufacturing operations of ADE Phase Shift. We also own and occupy a 46,000 square foot building in Newton, Massachusetts which contains the headquarters and manufacturing operations of ADE Technologies. In addition, we lease a 9,300 square foot building in Milpitas, California under a five year lease that expires in October 2006. We lease a 5,000 square foot building in Bethel, Connecticut where additional manufacturing operations of the ADE Semiconductor Systems Group are located. We also lease space for sales and service support offices in various other domestic and overseas locations.

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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 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. Since these matters are at a preliminary stage, the Company cannot predict the outcome or the amount of gain or loss, if any.

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, 2001.

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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.

FISCAL YEAR ENDED APRIL 30, 2001 -----	HIGH -----	LOW -----
First quarter.....	24.00	13.25
Second quarter.....	23.13	15.00
Third quarter.....	22.88	10.44
Fourth quarter.....	16.65	11.33

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FISCAL YEAR ENDED APRIL 30, 2000	HIGH	LOW
First quarter.....	14.13	8.44
Second quarter.....	17.00	10.88
Third quarter.....	22.63	14.88
Fourth quarter.....	27.00	14.44

The last sale price of the common stock on July 24, 2001, as reported by Nasdaq, was \$14.45 per share. As of July 24, 2001, there were 92 holders of record of the common stock (approximately 2,800 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.

RECENT ISSUANCE OF UNREGISTERED SECURITIES

In June 1998, in consideration of a merger between ADE and Phase Shift Technology, Inc., a privately-owned company, ADE issued an aggregate of 2,000,000 shares of common stock to the Phase Shift shareholders. All of the recipients of shares were "accredited investors" under the definition of that term in Regulation D under the Securities Act. The issuance of the shares was privately negotiated in the context of negotiations for the merger with Phase Shift, and was exempt from the registration requirements of Section 5 of the Securities Act of 1933 pursuant to Section 4(2) of that Act.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following table summarizes the financial data for our business. You should read the selected financial data in conjunction with our historical 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."

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	YEAR ENDED APRIL 30		
	2001	2000	1999
	(IN THOUSANDS, EXCEPT PER S		
STATEMENT OF OPERATIONS DATA:			
Revenue.....	\$ 100,183	\$ 62,506	\$ 60,885
Cost of revenue.....	50,236	35,475	46,489
Gross profit.....	49,947	27,031	14,396
Operating expenses:			
Research and development.....	22,583	21,884	24,026
Purchased in-process research and development.....	--	--	--
Marketing and sales.....	16,218	13,002	12,280
General and administrative.....	9,948	12,281	11,153
Restructuring charges.....	--	--	2,318
Total operating expenses.....	48,749	47,167	49,777
Income (loss) from operations.....	1,198	(20,136)	(35,381)

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Interest and other income, net.....	1,130	1,280	2,600	
	-----	-----	-----	
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.....	2,328	(18,856)	(32,781)	
Provision for (benefit from) income taxes.....	37	102	(9,335)	
	-----	-----	-----	
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle.....	2,291	(18,958)	(23,446)	
Equity in net earnings (loss) of affiliated companies.....	2	(1,489)	(1,082)	
	-----	-----	-----	
Income (loss) before cumulative effect of change in accounting principle.....	2,293	(20,447)	(24,528)	
Cumulative effect of change in accounting principle, net of \$0 tax.....	(1,785)	--	--	
	-----	-----	-----	
Net income (loss).....	\$ 508	\$ (20,447)	\$ (24,528)	\$
	=====	=====	=====	
Net earnings (loss) per share:				
Basic				
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ 0.17	\$ (1.53)	\$ (1.89)	\$
Cumulative effect of change in accounting principle.....	\$ (0.13)	\$ --	\$ --	\$
	-----	-----	-----	
Basic earnings (loss) per share.....	\$ 0.04	\$ (1.53)	\$ (1.89)	\$
	=====	=====	=====	
Diluted				
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ 0.17	\$ (1.53)	\$ (1.89)	\$
Cumulative effect of change in accounting principle.....	\$ (0.13)	\$ --	\$ --	\$
	-----	-----	-----	
Diluted earnings (loss) per share.....	\$ 0.04	\$ (1.53)	\$ (1.89)	\$
	=====	=====	=====	
Weighted average common shares outstanding				
Basic.....	13,507	13,353	12,989	
Diluted.....	13,754	13,353	12,989	
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).....	\$ 508	\$ (20,700)	\$ (22,511)	
Basic earnings (loss) per share.....	\$ 0.04	\$ (1.55)	\$ (1.73)	
Diluted earnings (loss) per share.....	\$ 0.04	\$ (1.55)	\$ (1.73)	

APRIL 30,

2001 2000 1999

(IN THOUSANDS)

BALANCE SHEET DATA:

Cash and cash equivalents.....	\$ 29,220	\$ 35,001	\$ 61,278	\$
Working capital.....	71,958	65,710	90,654	
Total assets.....	146,707	132,870	153,430	
Long-term debt, less current portion.....	11,339	11,950	12,537	
Total stockholders' equity.....	\$ 104,664	\$101,872	\$120,822	\$

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* Data is not available to provide pro forma information for these years.

- (1) 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 prior periods presented 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 changed its revenue recognition policy effective January 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, the seller's price is 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.

The Company's transactions frequently involve the sales of systems and services under multiple element arrangements. Revenue under multiple element

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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 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.

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 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

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probable. Revenue from software consulting services provided on a time and reimbursable expense basis is recognized as the services are provided.

The Company previously recorded revenue on product sales upon shipment, provided that evidence of an arrangement exists, fees are fixed or determinable and collection of the related receivable is probable. In accordance with the guidance provided in SAB 101, the Company recorded a non-cash charge of \$1.8 million, net of \$0 income taxes, or \$0.13 per share to reflect the cumulative effect of the change in accounting principle as of May 1, 2000, the beginning of the fiscal year. For the fiscal year ended April 30, 2001, the Company recognized approximately \$1.7 million in revenue that was included in the cumulative effect adjustment as of May 1, 2000. The effect of that revenue was to increase income by \$1.4 million (net of \$0 in taxes) for the fiscal year ended April 30, 2001. The pro forma amounts presented in the Consolidated Statement of Operations were calculated assuming that the accounting change was retroactive to prior periods. For periods prior to fiscal year 1999, data was not available to provide pro forma information.

On June 11, 1998, ADE merged with Phase Shift Technology, Inc., an Arizona corporation. Each outstanding share of Phase Shift's common stock was exchanged for two shares of the ADE's common stock. A total of 2,000,000 shares of our common stock were issued in this transaction. This transaction has been accounted for as a pooling-of-interests. Accordingly, all prior period financial statements have been restated to reflect the inclusion of Phase Shift operations.

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,		
	2001	2000	1999
Revenue.....	100.0%	100.0%	100.0%
Cost of revenue.....	50.1%	56.8%	76.3%

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Gross profit.....	49.9%	43.2%	23.7%
Operating expenses:			
Research and development.....	22.5%	35.0%	39.5%
Marketing and sales.....	16.2%	20.8%	20.2%
General and administrative.....	9.9%	19.6%	18.3%
Restructuring charges.....	--	--	3.8%
Income (loss) from operations.....	1.2%	(32.2)%	(58.1)%
Interest and other income (expense), net.....	1.1%	2.0%	4.3%
Net income (loss).....	0.1%	(32.7)%	(40.3)%

RESTRUCTURING

In January 1999, we began the consolidation of our Charlotte, North Carolina operations and certain of our Milpitas, California operations into our Massachusetts facilities to better align our cost structure with the prevailing semiconductor and data storage market conditions and to position ourselves with more efficient operations for expected industry recoveries. Anticipated savings upon the completion of the consolidation efforts included reduced cost of sales due to reduced capacity-related expense, reduced payroll and related costs and reduced travel costs. Expenses associated with these consolidations incurred in fiscal 2000 and 1999 totaled \$3.5 million and \$4.5 million, respectively. The fiscal 1999 consolidation expenses included a restructuring charge of \$2.3 million and \$2.2 million in other non-recurring expenses. The restructuring charges included severance costs of \$1.2 million related to the termination of 71 employees in general and administrative, marketing and sales, manufacturing, and engineering functions; \$185,000 in lease termination penalties; and \$931,000 in non-cash fixed asset impairments related to

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furniture, fixtures and building improvements on the terminated leased facilities. Other non-recurring expenses included travel, consulting, and employee retention bonuses and were included in general and administrative expenses. Retention bonus expense related to payments to employees who had been notified of their termination dates, but whose services were required through specified dates during the consolidation process. This expense was recorded ratably over the respective estimated service periods. During fiscal 2000 we incurred recruiting costs and labor redundancy costs associated with replacing certain personnel in Charlotte who elected not to relocate to Massachusetts. Moving and related costs were incurred through the end of January 2000 and were included in general and administrative expenses. During fiscal 2001, the remainder of the restructuring accrual was paid, which consisted of \$278,000 of severance payments.

In July 2001, the Company reduced its workforce by approximately 5% as part of a cost-cutting program that was implemented in response to softening market conditions. All job reductions were associated with the Company's New England facilities.

REALIZABILITY OF DEFERRED TAX ASSETS

During the year ended April 30, 2001, we increased our valuation allowance against deferred tax assets by \$2.2 million, as the full value of our capital loss carryforward in relation to the sale of one of the Company's investments during the year and temporary differences may not be realized. This increase was based upon weighing all evidence available to management, including fiscal 2001 pre-tax income of \$2.3 million, current estimates of future taxable income, the cyclicity of the semiconductor and data storage industries and the current uncertainty within those markets. Net operating loss carryforwards generated in fiscal 1999 and 2000 begin to expire in fiscal 2004 for state income tax purposes and in fiscal 2019 for federal income tax purposes. We will need to

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generate approximately \$27.9 million of future taxable income to realize the benefit of our net deferred tax assets as of April 30, 2001. The amount of the deferred tax assets considered realizable could materially change in the near term if estimates of future taxable income change or do not materialize.

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.

Revenue from sales to Japan ADE Ltd, our 50% owned affiliate and a distributor of our products, by the Semiconductor Systems Group, ADE Technologies and ADE Phase Shift 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. Consolidated revenue in fiscal 2001 was \$2.9 million less than aggregate segment revenue for this period and reflects the impact of revenue that was not recognized in fiscal 2001 for consolidated reporting purposes but was recognized during fiscal 2001 on a segment basis.

GROSS MARGIN. Gross margin increased to 49.9% in fiscal 2001 from 43.2% in fiscal 2000. The increase in the gross margin 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

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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 margins at PST increased in fiscal 2001 compared to fiscal 2000 primarily as a result of increased sales volume, while gross margins 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 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

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be used with either 200mm or 300mm wafers. The Company also continues to develop new 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.

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.

OTHER INCOME. Other income 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 \$841,000 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.

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FISCAL YEAR ENDED APRIL 30, 2000 COMPARED TO FISCAL YEAR ENDED APRIL 30, 1999

REVENUE. Revenue increased 2.7% to \$62.5 million in fiscal 2000 from \$60.9 million in fiscal 1999. The increase was primarily due to increased unit sales of our products. 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 as well as the computer hard disk industry. 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 technology purchases to evaluate the Company's next generation of products.

Revenue from sales to Japan ADE Ltd, our 50% owned affiliate and a distributor of our products, by the Semiconductor Systems Group and ADE Technologies are reflected in segment revenue during the period they are shipped

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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. Consolidated revenue in fiscal 2000 was \$1.9 million more than aggregate segment revenue for this period and reflects the impact of revenue that was recognized in fiscal 2000 for consolidated reporting purposes but recognized in a prior period on a segment basis.

GROSS MARGIN. Gross margin increased to 43.2% in fiscal 2000 from 23.6% in fiscal 1999. The increase in the gross margin resulted primarily from the effect of increased sales volume and a reduction in material costs due to decreased excess and obsolete inventory expense during fiscal 2000 compared to fiscal 1999.

RESEARCH AND DEVELOPMENT. Research and development expense in fiscal 2000 decreased 8.9% to \$21.9 million from \$24.0 million in fiscal 1999 and decreased as a percentage of revenue to 35.0% from 39.5%. The decrease in expense resulted from cost control measures implemented during fiscal 2000 compared to fiscal 1999. 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 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 5.9% to \$13.0 million in fiscal 2000 from \$12.3 million in fiscal 1999, and increased as a percentage of revenue to 20.8% from 20.2%. The increased expense resulted primarily from increased commissions expense due to increased sales volume during the third and fourth quarters of fiscal 2000. Also contributing to the increase was an increase in marketing expense due to an investment by the Company to enhance device marketing. 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.

GENERAL AND ADMINISTRATIVE. General and administrative expenses increased 10.1% to \$12.3 million in fiscal 2000 from \$11.2 million in fiscal 1999 and increased as a percentage of revenue to 19.6% from 18.3%. Expenses increased primarily as a result of expenses related to the final consolidation of the Charlotte operations into the Westwood, Massachusetts facility.

OTHER INCOME. Other income was \$1.3 million in fiscal 2000 versus \$2.6 million in fiscal 1999. Fiscal 2000 interest and other income of \$2.2 million was partially offset by interest expense of \$919,000 associated with the Industrial Development Bonds used to finance the acquisition and renovation of our corporate headquarters and Semiconductor Systems Group manufacturing facility in Westwood,

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Massachusetts, the headquarters and manufacturing facility of ADE Technologies in Newton, Massachusetts and the construction of the ADE Phase Shift manufacturing facility in Tucson, Arizona.

PROVISION FOR INCOME TAXES. The provision for income taxes was \$102,000 in 2000 versus a benefit of \$9.3 million in fiscal 1999. The fiscal 2000 provision

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for income taxes consisted of state and foreign income taxes. The increase in deferred tax assets during fiscal 2000 was offset entirely by an increase in the valuation allowance of \$7.1 million. The effective tax rate for fiscal 1999 was 28.5% and differed from the federal statutory rate primarily because of a \$3 million increase in the valuation allowance against deferred tax assets as of April 30, 1999, partially offset by alternative minimum tax credit carryforwards.

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, 1999 and ending April 30, 2001. 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
- 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, 1999	OCT. 31, 1999	JAN. 31, 2000	APRIL 30, 2000	JULY 31, 2000 (1)
(IN THOUSANDS, EXCEPT PER SHAR				

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STATEMENT OF OPERATIONS DATA:

Revenue.....	\$ 12,362	\$ 13,625	\$ 16,576	\$ 19,943	\$ 21,387
Cost of revenue.....	7,249	8,904	9,225	10,097	11,111
	-----	-----	-----	-----	-----
Gross profit.....	5,113	4,721	7,351	9,846	10,276
	-----	-----	-----	-----	-----
Operating expenses:					
Research and development.....	5,556	4,571	5,411	6,346	5,154
Marketing and sales.....	2,717	3,367	3,134	3,784	4,262
General and administrative.....	3,560	2,877	2,964	2,880	2,228
	-----	-----	-----	-----	-----
Total operating expenses.....	11,833	10,815	11,509	13,010	11,644
	-----	-----	-----	-----	-----
Income (loss) from operations.....	(6,720)	(6,094)	(4,158)	(3,164)	(1,368)
Interest and other income (expense), net.....	149	374	318	439	340
	-----	-----	-----	-----	-----
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.....	(6,571)	(5,720)	(3,840)	(2,725)	(1,028)
Provision for (benefit from) income taxes.....	--	--	--	102	--
	-----	-----	-----	-----	-----
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle.....	(6,571)	(5,720)	(3,840)	(2,827)	(1,028)
Equity in net earnings (loss) of affiliated companies.....	(614)	(149)	(676)	(50)	(722)
	-----	-----	-----	-----	-----
Income (loss) before cumulative effect of change in accounting principle...	(7,185)	(5,869)	(4,516)	(2,877)	(1,750)
Cumulative effect of change in accounting principle, net of \$0 tax.....	--	--	--	--	(1,785)
	-----	-----	-----	-----	-----
Net Income (loss).....	\$ (7,185)	\$ (5,869)	\$ (4,516)	\$ (2,877)	\$ (3,535)
	=====	=====	=====	=====	=====
Net earnings (loss) per share:					
Basic					
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ (0.54)	\$ (0.44)	\$ (0.34)	\$ (0.21)	\$ (0.13)
Cumulative effect of change in accounting principle.....	\$ --	\$ --	\$ --	\$ --	\$ (0.13)
	-----	-----	-----	-----	-----
Basic earnings (loss) per share.....	\$ (0.54)	\$ (0.44)	\$ (0.34)	\$ (0.21)	\$ (0.26)
	=====	=====	=====	=====	=====
Diluted					
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ (0.54)	\$ (0.44)	\$ (0.34)	\$ (0.21)	\$ (0.13)
Cumulative effect of change in accounting principle.....	\$ --	\$ --	\$ --	\$ --	\$ (0.13)
	-----	-----	-----	-----	-----
Diluted earnings (loss) per share.....	\$ (0.54)	\$ (0.44)	\$ (0.34)	\$ (0.21)	\$ (0.26)
	=====	=====	=====	=====	=====
Weighted average shares					

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outstanding--basic.....	13,198	13,360	13,403	13,458	13,483
Weighted average shares					
outstanding--diluted.....	13,198	13,360	13,403	13,458	13,483

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	QUARTER ENDED				
	JULY 31, 1999	OCT. 31, 1999	JAN. 31, 2000	APRIL 30, 2000	JULY 31, 2000
PERCENTAGE OF REVENUE:					
Revenue.....	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenue.....	58.6%	65.4%	55.7%	50.6%	52.0%
Gross profit.....	41.4%	34.6%	44.3%	49.4%	48.0%
Operating expenses:					
Research and development.....	44.9%	33.5%	32.6%	31.8%	24.1%
Marketing and sales.....	22.0%	24.7%	18.9%	19.0%	19.9%
General and administrative.....	28.8%	21.1%	17.9%	14.4%	10.4%
Income (loss) from operations.....	(54.4)%	(44.7)%	(25.1)%	(15.9)%	(6.4)%
Other income, net.....	1.2%	2.7%	1.9%	2.2%	1.6%
Net income (loss).....	(58.1)%	(43.1)%	(27.2)%	(14.4)%	(16.5)%

(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 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.

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LIQUIDITY AND CAPITAL RESOURCES

At April 30, 2001, we had \$29.2 million in cash and cash equivalents and \$72.0 million in working capital. In addition, we had \$3.5 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 used in operating activities for the year ended April 30, 2001 was \$1.7 million. This amount resulted from net income of \$0.5 million, adjusted for net non-cash charges of \$7.7 million and a \$9.9 million net increase in working capital accounts. Non-cash items primarily consisted of \$5.8 million of depreciation and amortization and \$1.8 million from the cumulative effect of the change in accounting.

The net increase in working capital total of \$9.9 million was comprised of increased accounts receivable, inventories and prepaid expenses of \$9.9 million, \$8.9 million and \$810,000, respectively, as well as increases in accounts payable, accrued expenses and other current liabilities and deferred income on sales to Japan ADE Ltd. (JAL), our 50% owned Japanese affiliate, of \$2.8 million, \$5.1 million and \$1.8 million, respectively.

The increase in accounts receivable resulted from the significantly increased billings and revenue during fiscal 2001. The increase in inventory resulted primarily from inventory purchases related to a ramp up in production to meet the increase in customer orders. The increase in prepaid expenses results primarily from the timing of payments and an increase in prepaid commissions due to increased sales levels. The increase in accounts payable resulted primarily from increased purchases of inventory. The increase in accrued expenses and other current liabilities resulted from increases in deferred revenue and accrued warranty, which is related to increased sales levels. The increase 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 \$4.3 million, and consisted of \$3.7 million for purchases of fixed assets, \$449,000 in advances to affiliated companies and an increase in other assets of \$367,000 and a decrease in restricted cash of \$180,000.

Cash provided by financing activities was \$211,000 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 \$799,000. This amount was partially offset by \$588,000 in repayments 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.

NEW ACCOUNTING PRONOUNCEMENTS

In June 1998, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 133, "Accounting for Derivative Instruments and Hedging Activities", as amended by SFAS No. 137, "Accounting for Derivative Instrument and Hedging Activities--Deferral of Effective Date of FASB Statement No. 133," and SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities--an amendment of FASB Statement No. 133," which establishes accounting and reporting standards for derivative instruments and hedging activities. The Company will adopt SFAS

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No. 133, as amended, in fiscal year 2002. To date the Company has not utilized derivative instruments or hedging activities and, therefore, the adoption of SFAS 133 is not expected to have a significant impact on our financial position or results of operations.

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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 will be effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required, in fiscal year 2003. The impact of SFAS No. 141 and SFAS No. 142 on the Company's financial statements has not yet been determined.

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, 2001, 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.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by Item 8 is contained on pages F-1 through F-23 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 2001 Annual Meeting of Stockholders, to be filed with the Commission on or about August 16, 2001 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

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The information required by this Item is included in the 2001 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 2001 Proxy Statement, which shall not be deemed incorporated herein).

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The information required by this Item is included in the 2001 Proxy Statement under "Security Ownership of Certain Beneficial Owners and Management" and is incorporated herein by reference.

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:

	PAGE NUMBER IN THIS FORM 10-K -----
Report of Independent Accountants.....	F-1
Consolidated Balance Sheets as of April 30, 2001 and 2000...	F-2
Consolidated Statements of Operations for the three years ended April 30, 2001.....	F-3
Consolidated Statements of Stockholders' Equity for the three years ended April 30, 2001.....	F-4
Consolidated Statements of Cash Flows for the three years ended April 30, 2001.....	F-5
Notes to Consolidated Financial Statements.....	F-6
 (a) (2) Financial Statement Schedule:	
II--Valuation and Qualifying Accounts and Reserves for the three years ended April 30, 2001.....	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.

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EXHIBIT
NUMBER

DESCRIPTION

-
-
- 2.1 Agreement and Plan of Merger dated as of February 27, 1997 by and between ADE Corporation, ADE Technologies, Inc., Digital Measurement Systems, Inc., Dennis E. Speliotis, Elias Speliotis, Evanthia Speliotis, Ismene Speliotis, Advanced Development Corporation, David C. Bono and Alan Sliski (filed as Exhibit 10.18 to the Company's Form 10-K for the fiscal year ended April 30, 1997 and incorporated herein by reference).
- 2.2 Agreement and Plan of Merger dated as of May 31, 1998 by and among ADE Corporation, Theta Acquisition Corp., Phase Shift Technology, Inc., Chris Koliopoulos and David Basila (filed as Exhibit 2 to the Company's Form 8-K dated June 25, 1998 and incorporated herein by reference).
- 2.3 Purchase and Sale Agreement dated as of February 28, 1997 by and between ADE Corporation and Dennis E. Speliotis, individually and as Trustee of Thouria Investment Trust under a Declaration of Trust dated August 18, 1992, Elias Speliotis, Evanthia Speliotis and Ismene Speliotis (filed as Exhibit 10.20 to the Company's Form 10-K for the fiscal year ended April 30, 1997 and incorporated herein by reference).
- 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 (filed as Exhibit 3.2 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).
- 4.1 Registration Rights Agreement dated as of February 28, 1997 by and between ADE Corporation and Dennis E. Speliotis, individually and as Trustee of Thouria Investment Trust under a Declaration of Trust dated August 18, 1992 recorded in the Middlesex South District Registry of Deeds at Book 22305, Page 375 (filed as Exhibit 10.21 to the Company's Form 10-K for the fiscal year ended April 30, 1997 and incorporated herein by reference).
- 4.2 Registration Rights Agreement dated as of February 27, 1997, by and among ADE Corporation and Advanced Development Corporation, David C. Bono and Alan Sliski (filed as Exhibit 10.19 to the Company's Form 10-K for the fiscal year ended April 30, 1997 and incorporated herein by reference).
- 4.3 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).
- 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).

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- 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).*
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- 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 1982 Stock Option Plan (filed as Exhibit 4.5 to the Company's Registration Statement on Form S-8 (333-2280) and incorporated herein by reference).*
- 10.9 Employee Stock Purchase Plan (as amended) (filed as Exhibit 10.6 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).*
- 10.11 Purchase and Sale Agreement for 80 Wilson Way, Westwood, Massachusetts, dated January 11, 1996, between Met Path New England, Inc., and the Company, with Schedules (filed as Exhibit 10.12 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
- 10.12 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).
- 10.13 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).
- 10.14 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).

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- 10.15 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).
- 10.16 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).
- 10.17 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).
- 10.18 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).
- 10.19 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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- 10.20 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).
- 10.21 Noncompetition Agreement dated as of May 31, 1998 by and between ADE Corporation and David Basila (filed as Exhibit 10.22 to the Company's Form 10-K for the fiscal year ended April 30, 1998, and incorporated herein by reference).
- 21.1 Subsidiaries of the Company (filed as Exhibit 21.1 to the Company's Form 10-Q for the 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 employees.

(b) Reports on Form 8-K

There were no reports on Form 8-K filed by the Company during the fourth quarter

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of fiscal year 2001.

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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 19, 2001

By: /s/ ROBERT C. ABBE

Robert C. Abbe
PRESIDENT AND CHIEF EXECUTIVE OFFICER

Each person whose signature appears below constitutes and appoints Robert C. Abbe, Brian C. James, Eileen Smith Ewing, 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 -----
<p style="text-align: center;">/s/ ROBERT C. ABBE ----- Robert C. Abbe</p>	<p>President, Chief Executive Officer and Robert C. Abbe Director (Principal Executive Officer)</p>	<p>July 19,</p>
<p style="text-align: center;">/s/ BRIAN C. JAMES ----- Brian C. James</p>	<p>Vice President, Treasurer and Chief Financial Officer (Principal Financial Officer)</p>	<p>July 19,</p>
<p style="text-align: center;">/s/ JOSEPH E. ROVATTI ----- Joseph E. Rovatti</p>	<p>Controller (Principal Accounting Officer)</p>	<p>July 19,</p>
<p style="text-align: center;">/s/ LANDON T. CLAY ----- Landon T. Clay</p>	<p>Chairman of the Board</p>	<p>July 19,</p>
<p style="text-align: center;">/s/ CHRIS L. KOLIOPOULOS</p>	<p>Vice President of ADE, President</p>	<p>July 19,</p>

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----- of ADE Phase Shift and Director
 Chris L. Koliopoulos

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SIGNATURE -----	TITLE -----	DATE -----
/s/ FRANCIS B. LOTHROP, JR. ----- Francis B. Lothrop, Jr.	Director	July 19,
/s/ H. KIMBALL FAULKNER ----- H. Kimball Faulkner	Director	July 19,
/s/ KENDALL WRIGHT ----- Kendall Wright	Director	July 19,
/s/ HARRIS CLAY ----- Harris Clay	Director	July 19,

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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 26 present fairly, in all material respects, the financial position of ADE Corporation and its subsidiaries at April 30, 2001 and 2000, and the results of their operations and their cash flows for each of the three years in the period ended April 30, 2001, 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 26 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 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.

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PricewaterhouseCoopers LLP

Boston, Massachusetts

June 19, 2001

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ADE CORPORATION

CONSOLIDATED BALANCE SHEETS

(IN THOUSANDS, EXCEPT SHARE DATA)

	APRIL 30, 2001	APRIL 30, 2000
	-----	-----
ASSETS		
Current assets:		
Cash and cash equivalents.....	\$ 29,220	\$ 35,001
Marketable securities.....	1,913	--
Accounts receivable:		
Trade, less allowance for doubtful accounts of \$917 and \$629, respectively.....	20,898	13,935
Affiliate.....	3,526	614
Inventories.....	39,025	29,968
Prepaid expenses and other current assets.....	1,566	756
Deferred income taxes.....	6,514	4,484
	-----	-----
Total current assets.....	102,662	84,758
Fixed assets, net.....	29,569	30,724
Deferred income taxes.....	4,076	6,106
Investments.....	3,221	3,331
Intangible assets, net.....	3,286	3,892
Restricted cash.....	3,525	3,705
Other assets.....	368	354
	-----	-----
Total assets.....	\$146,707	\$132,870
	=====	=====
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt.....	\$ 621	\$ 598
Accounts payable.....	6,833	4,017
Accrued expenses and other current liabilities.....	21,134	14,096
Deferred income on sales to affiliate.....	2,116	337
	-----	-----
Total current liabilities.....	30,704	19,048
Long-term debt.....	11,339	11,950
	-----	-----
Commitments and contingencies (Note 16)		
STOCKHOLDERS' EQUITY:		
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; 13,552,966 and 13,479,066 issued and		

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outstanding at April 30, 2001 and 2000, respectively....	136	135
Capital in excess of par value.....	102,429	101,580
Retained earnings.....	686	178
Accumulated other comprehensive income.....	1,413	--
	-----	-----
	104,664	101,893
Deferred compensation.....	--	(21)
	-----	-----
	104,664	101,872
	-----	-----
Total liabilities and stockholders' equity.....	\$146,707	\$132,870
	=====	=====

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,		
	2001	2000	1999
	-----	-----	-----
Net Revenue:			
System and parts.....	\$ 74,390	\$ 46,120	\$ 40,761
System and parts--affiliate.....	15,452	8,787	9,254
Service.....	10,341	7,599	10,870
	-----	-----	-----
Total revenue.....	100,183	62,506	60,885
	-----	-----	-----
Cost of revenue:			
System and parts.....	31,704	21,893	28,341
System and parts--affiliate.....	6,343	3,285	4,012
Service.....	12,189	10,297	14,136
	-----	-----	-----
Total cost of revenue.....	50,236	35,475	46,489
	-----	-----	-----
Gross profit.....	49,947	27,031	14,396
	-----	-----	-----
Operating expenses:			
Research and development.....	22,583	21,884	24,026
Marketing and sales.....	16,218	13,002	12,280
General and administrative.....	9,948	12,281	11,153
Restructuring charges.....	--	--	2,318
	-----	-----	-----
Total operating expenses.....	48,749	47,167	49,777
	-----	-----	-----
Income (loss) from operations.....	1,198	(20,136)	(35,381)
Other income (expense):			
Interest and other income.....	1,971	2,199	3,220
Interest expense.....	(841)	(919)	(620)
	-----	-----	-----
Income (loss) before provision for (benefit from) income			

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taxes, equity in net loss of affiliated companies and cumulative effect of change in accounting principle.....	2,328	(18,856)	(32,781)
Provision for (benefit from) income taxes.....	37	102	(9,335)
	-----	-----	-----
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle.....	2,291	(18,958)	(23,446)
Equity in net earnings (loss) of affiliated companies.....	2	(1,489)	(1,082)
	-----	-----	-----
Income (loss) before cumulative effect of change in accounting principle.....	2,293	(20,447)	(24,528)
Cumulative effect of change in accounting principle, net of \$0 tax.....	(1,785)	--	--
	-----	-----	-----
Net income (loss).....	\$ 508	\$ (20,447)	\$ (24,528)
	=====	=====	=====
Net earnings (loss) per share:			
Basic			
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ 0.17	\$ (1.53)	\$ (1.89)
Cumulative effect of change in accounting principle.....	\$ (0.13)	\$ --	\$ --
	-----	-----	-----
Basic earnings (loss) per share.....	\$ 0.04	\$ (1.53)	\$ (1.89)
	=====	=====	=====
Diluted			
Earnings (loss) before cumulative effect of change in accounting principle.....	\$ 0.17	\$ (1.53)	\$ (1.89)
Cumulative effect of change in accounting principle.....	\$ (0.13)	\$ --	\$ --
	-----	-----	-----
Diluted earnings (loss) per share.....	\$ 0.04	\$ (1.53)	\$ (1.89)
	=====	=====	=====
Pro forma amounts assuming retroactive effect of change in accounting principle related to revenue recognition:			
Net revenues.....	\$100,183	\$ 61,966	\$ 63,194
Net income (loss).....	\$ 508	\$ (20,700)	\$ (22,511)
Basic earnings (loss) per share.....	\$ 0.04	\$ (1.55)	\$ (1.73)
Diluted earnings (loss) per share.....	\$ 0.04	\$ (1.55)	\$ (1.73)
	=====	=====	=====
Weighted average shares outstanding--basic.....	13,507	13,353	12,989
Weighted average shares outstanding--diluted.....	13,754	13,353	12,989

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 OTHER COMPREHENSIVE INCOME	DE COMP
NUMBER OF SHARES	PAR VALUE				
-----	-----	-----	-----	-----	-----

Balance at April 30,

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1998.....	13,116,052	\$131	\$ 99,045	\$ 45,153	\$ --	\$
Exercise of common stock options.....	106,820	2	517			
Sale of common stock pursuant to the Employee Stock Purchase Plan.....	53,530	--	469			
Amortization of deferred compensation.....						
Tax benefit related to exercise of common stock options.....			115			
Net loss.....				(24,528)		
Balance at April 30, 1999.....	13,276,402	133	100,146	20,625	--	
Exercise of common stock options.....	157,250	2	957			
Sale of common stock pursuant to the Employee Stock Purchase Plan.....	45,414	--	477			
Amortization of deferred compensation.....						
Net loss.....				(20,447)		
Balance at April 30, 2000.....	13,479,066	135	101,580	178	--	
Exercise of common stock options.....	32,636	--	236			
Sale of common stock pursuant to the Employee Stock Purchase Plan.....	37,761	1	562			
Common stock issued in lieu of Board of Directors' fees.....	3,503	--	51			
Amortization of deferred compensation.....						
Net income.....				508		
Unrealized gain on marketable securities...						1,413
Comprehensive income.....						
Balance at April 30, 2001.....	\$13,552,966	\$136	\$102,429	\$ 686	\$ 1,413	\$
	=====	=====	=====	=====	=====	=====

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

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ADE CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
DECREASE IN CASH AND CASH EQUIVALENTS
(IN THOUSANDS)

YEAR ENDED APRIL 30,

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	2001	2000	1999
	-----	-----	-----
CASH FLOWS USED IN OPERATING ACTIVITIES:			
Net income (loss).....	\$ 508	\$ (20,447)	\$ (24,528)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Depreciation and amortization.....	5,793	5,881	5,945
Non-cash portion of restructuring charge.....	--	--	931
Equity in net (earnings) loss of affiliated companies, net of dividends received.....	62	1,544	1,192
Deferred income taxes.....	--	(207)	(808)
Shares issued in lieu of directors' fees.....	51	--	--
Amortization of deferred compensation.....	21	61	61
Cumulative effect of change in accounting principle...	1,785	--	--
Changes in assets and liabilities, net of acquisition:			
Accounts receivable, trade.....	(6,963)	(3,743)	5,353
Accounts receivable, affiliate.....	(2,912)	1,037	(258)
Inventories.....	(8,856)	(7,790)	6,614
Income tax refund receivable.....	--	7,425	(2,074)
Prepaid expenses and other current assets.....	(810)	(174)	640
Accounts payable.....	2,816	1,761	(3,438)
Accrued expenses and other current liabilities.....	5,052	(1,353)	3,244
Deferred income on sales to affiliate.....	1,779	(1,454)	(720)
	-----	-----	-----
Net cash used in operating activities.....	(1,674)	(17,459)	(7,846)
	-----	-----	-----
CASH FLOWS USED IN INVESTING ACTIVITIES:			
Purchases of fixed assets.....	(3,682)	(7,510)	(7,759)
Change in restricted cash.....	180	(172)	275
Equity investments and advances.....	(449)	(1,006)	(1,169)
Increase in other assets.....	(367)	(1,002)	(102)
	-----	-----	-----
Net cash used in investing activities.....	(4,318)	(9,690)	(8,755)
	-----	-----	-----
CASH FLOWS PROVIDED BY FINANCING ACTIVITIES:			
Repayment of long-term debt.....	(588)	(564)	(435)
Proceeds from issuance of long-term debt.....	--	--	4,500
Proceeds from issuance of common stock, net of issuance costs.....	799	1,436	988
Tax benefit related to the exercise of common stock options.....	--	--	115
	-----	-----	-----
Net cash provided by financing activities.....	211	872	5,168
	-----	-----	-----
Net decrease in cash and cash equivalents.....	(5,781)	(26,277)	(11,433)
Cash and cash equivalents, beginning of year.....	35,001	61,278	72,711
	-----	-----	-----
Cash and cash equivalents, end of year.....	\$29,220	\$ 35,001	\$ 61,278
	=====	=====	=====

See supplemental disclosures of cash flow information (Note 17)

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

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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 5).

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.

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 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 the services are provided. The Company does 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

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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, 2001 and 2000, the Company has classified its cash equivalent investments totaling \$26,678,000 and \$30,951,000, 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, 2001 and 2000, the cost of which is based upon the specific identification method, were \$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 \$2,403,000 related to the acquisition of SSD is amortized on a straight-line basis over ten years. Accumulated amortization on the goodwill at April 30, 2001 and 2000 was \$854,000 and \$618,000, 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, 2001 and 2000 was \$1,168,000 and \$700,000, respectively.

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED) IMPAIRMENT OF LONG-LIVED ASSETS

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. For 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, 2001 and 2000, all other long-lived assets, including goodwill, were not impaired.

CONCENTRATIONS

CREDIT RISK

Financial instruments which 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 \$1,767,000 and \$3,214,000 at April 30, 2001 and 2000, 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 29% and 22% of total accounts receivable at April 30, 2001 and 2000, respectively. The Company performs ongoing credit evaluations of 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. It was not practicable to estimate the fair value of the Company's long-term investments as the stock of the related investees is not publicly traded.

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED) 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 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 \$268,000, \$143,000 and \$164,000 for the years ended April 30, 2001, 2000 and 1999, 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."

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 (loss) 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 and shares issued in the PST merger held in escrow. For the years ended April 30, 2001 and 2000, respectively, 377,400 and 256,976 common shares issuable upon the exercise of stock options are antidilutive and for the year ended April 30, 2000, 200,000 shares issued in the PST merger held in escrow are antidilutive because the Company recorded a net loss for the year and, therefore, have been excluded from the diluted earnings (loss) per share computation.

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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

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	YEAR ENDED APRIL 30,		
	2001	2000	1999
	(IN THOUANDS)		
Shares used in computation:			
a. Weighted average common stock outstanding used in computation of basic earnings (loss) per share.....	13,507	13,353	12,989
b. Dilutive effect of stock options and warrants.....	247	--	--
c. Shares used in computation of diluted earnings (loss) per share.....	13,754	13,353	12,989
	=====	=====	=====

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 liabilities and disclosure of contingencies at April 30, 2001 and 2000, and the reported amounts of revenue and expenses during the three year period ended April 30, 2001. 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.

RECLASSIFICATIONS

Certain amounts in the 2000 and 1999 financial statements have been reclassified to conform with the 2001 presentation.

NEW ACCOUNTING PRONOUNCEMENTS

In June 1998, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 133, "Accounting for Derivative Instruments and Hedging Activities", as amended by SFAS No. 137, "Accounting for Derivative Instrument and Hedging Activities--Deferral of Effective Date of FASB Statement No. 133," and SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities--an amendment of FASB Statement No. 133," which establishes accounting and reporting standards for derivative instruments and hedging activities. The Company will adopt SFAS No. 133, as amended, in fiscal year 2002. To date the Company has not utilized derivative instruments or hedging activities and, therefore, the adoption of SFAS 133 is not expected to have a significant impact on our financial position or results of operations.

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

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 will be effective for fiscal years beginning after December 15, 2001, and will thus be adopted by the Company, as required, in fiscal year 2003. The impact of SFAS No. 141 and SFAS No. 142 on the Company's financial statements has not yet been determined.

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 was to increase 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 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. MERGER

On June 11, 1998, the Company merged with Phase Shift Technology, Inc. ("PST"), an Arizona corporation. PST designs, manufactures and markets a broad line of high-performance, non-contact surface metrology equipment using advanced optical interferometric technology. Each outstanding share of PST common stock was exchanged for two shares of the Company's common stock. A total of 2,000,000 shares of the Company's common stock were issued in this transaction. This transaction has been accounted for as a pooling-of-interests. Accordingly, all prior period financial statements have been restated to reflect the inclusion of PST's operations. There were no material transactions between the Company and PST prior to the PST Agreement. No material adjustments to net assets or the results of operations were necessary to conform the accounting practices of PST to those of the Company.

5. INVESTMENTS

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. Japan ADE Ltd. ("JAL"), a Japanese corporation, is an investment accounted for under the equity method at April 30, 2001 and 2000. Microspec Technologies Ltd. ("Microspec"), an Israeli corporation, was an investment accounted for under the equity method at April 30, 2000.

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

5. INVESTMENTS (CONTINUED)

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, 2001, 2000 and 1999 have been eliminated, and the related profit on such sales is recorded as deferred income on sales to affiliate.

In July 1996, the Company acquired a 25.1% interest in Microspec for \$1,250,000. In connection with this investment, the Company also executed an exclusive five-year agreement to distribute Microspec products, subject to certain performance criteria. In April 1998, the Company acquired an additional 37.5% of Microspec, bringing the Company's total investment to 62.6%, by purchasing shares owned by one of the two other stockholders for \$1,500,000. During fiscal 2000, the Company advanced \$1.0 million in short term notes receivable to Microspec. On May 1, 1999, \$1,000,000 of these advances converted into additional shares of Microspec's common stock, which increased the Company's ownership to 67.5%. The Company continued to account for this investment under the equity method of accounting due to certain significant contractual minority rights of the remaining stockholder. There were no material purchases from or sales to Microspec during fiscal 2001, 2000 or 1999.

As of January 2000, the Company entered into an agreement with Microspec's minority shareholder, which provided ADE an option to purchase the minority interest in Microspec. The Company subsequently decided that it would not exercise the option and that no additional investments in Microspec would be made. In July of 2000, the Company sold its 67.5% investment in Microspec for \$1. The balance of the Company's investment in Microspec was approximately zero at the time of sale. Therefore, no gain or loss was recorded on the transaction.

The financial positions and results of operations of JAL and Microspec were not significant, individually or in the aggregate, compared to those of the Company as of and for the years ended April 30, 2000 and 1999. Below is the summarized unaudited financial information for JAL for fiscal 2001:

	YEAR ENDED APRIL 30, 2001 ----- (IN THOUSANDS)
Revenue.....	\$ 29,139
Gross profit.....	10,552
Net income.....	1,287
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 \$2,443,000 at April 30, 2001. The Company received \$64,000 in dividends from JAL during fiscal year 2001. At April 30, 2001, the Company's investment is approximately equal to the underlying net assets of the affiliated company. Investments in excess of the underlying net assets have been amortized by decreasing the equity in net

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earnings of affiliated companies using the straight-line method over five years. Related amortization expense of \$246,000, \$710,000 and \$363,000 was recorded in fiscal 2001, 2000 and 1999, respectively.

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

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ADE CORPORATION

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

5. INVESTMENTS (CONTINUED)

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 securities. 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 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 2001 and 2000, respectively. This capitalized license technology had accumulated amortization of \$900,000 and \$600,000 at April 30, 2001 and 2000, respectively.

6. RESTRUCTURING CHARGES

In January 1999, the Company implemented a restructuring of operations plan designed to better align the Company's cost structure with its reduced revenue resulting from the decline in capital equipment expenditures in the semiconductor and data storage industries. The plan included workforce reductions as well as the consolidation of manufacturing and other operational facilities. The Company recorded restructuring charges of \$2,318,000 for the year ended April 30, 1999, comprised of the following: severance charges of \$1,202,000 related to the termination of 76 employees in general and administrative, marketing and sales, manufacturing, and engineering functions; \$185,000 in lease termination penalties and \$931,000 in non-cash fixed asset impairments related to furniture, fixtures and building improvements on the terminated leased facilities. The fair value of the impaired assets was determined as their estimated salvage value at the time of their eventual disposition increased by their estimated utility during their related service period through disposition. These impaired assets were removed from service by January 31, 2000. Through April 30, 2000, the Company has made lease termination payments of \$185,000. Of the \$1,202,000 in accrued severance in accrued expenses as of May 1, 1999, \$924,000 was paid during the fiscal year ended April 30, 2000. During fiscal 2001, the remainder of the restructuring accrual was paid, which consisted of \$278,000 of severance payments.

7. INVENTORIES

Inventories consist of the following:

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	APRIL 30,	
	2001	2000
	(IN THOUSANDS)	
Raw materials and purchased parts.....	\$16,910	\$13,202
Work-in-process.....	18,749	15,437
Finished goods.....	3,366	1,329
	-----	-----
	\$39,025	\$29,968
	=====	=====

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ADE CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

8. FIXED ASSETS

Fixed assets consist of the following:

	USEFUL LIFE IN YEARS	APRIL 30,	
		2001	2000
		(IN THOUSANDS)	
Land.....		\$ 2,722	\$ 2,722
Building and improvements.....	15-25	22,208	22,135
Machinery and equipment.....	3-10	14,650	12,915
Office equipment.....	3-10	6,485	5,296
Leasehold improvements.....	5	491	268
Construction-in-progress.....		728	239
		-----	-----
		47,284	43,575
Less accumulated depreciation.....		17,715	12,851
		-----	-----
		\$29,569	\$30,724
		=====	=====

Depreciation expense for the years ended April 30, 2001, 2000 and 1999 was \$4,837,000, \$5,054,000, \$4,618,000, respectively.

9. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

Accrued expenses and other current liabilities consist of the following:

	APRIL 30,	
	2001	2000
	(IN THOUSANDS)	
Accrued salaries, wages, vacation pay and bonuses.....	\$ 2,342	\$ 1,844
Accrued commissions.....	1,341	647

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Accrued warranty costs.....	1,899	1,083
Accrued severance.....	--	278
Deferred revenue.....	11,655	6,436
Other.....	3,897	3,808
	-----	-----
	\$21,134	\$14,096
	=====	=====

10. 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

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ADE CORPORATION

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

10. BORROWINGS (CONTINUED)

payments of principal and accrued interest for the 1997 bond commence 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. 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, 2001 and 2000 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 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)
-----	-----
2002.....	\$ 621
2003.....	646
2004.....	672
2005.....	699
2006.....	728

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Thereafter.....	8,594

	\$11,960
	=====

11. 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.

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ADE CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

11. EMPLOYEE COMPENSATION PLANS (CONTINUED)

On June 21, 2000, the Board of Directors adopted, subject to the approval of the stockholders, 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 adoption of the 2000 Employee Stock Plan was formally approved by the stockholders at the 2000 Annual Meeting of Stockholders held on September 21, 2000. 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 Company's 1995 Stock Option Plan or its 1997 Stock Option 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, 2001, 649,780 shares were available for future grants under the Company's stock option plans.

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

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applicable quarter, whichever is lower. The term of the Purchase Plan is for five years, and the Company has authorized 1,000,000 shares of the Company's common stock for issuance under the Purchase Plan. Under the Purchase Plan, the Company sold 37,761, 45,414 and 53,530 shares to employees in fiscal years 2001, 2000 and 1999, respectively.

In September 1998, the Compensation Committee of the Board of Directors of the Company granted employees with outstanding stock options the opportunity to cancel their existing options and receive new options on a one for one basis with a new five year vesting schedule commencing on the new date of grant. On October 2, 1998, 298,850 options with exercise prices between \$12.94 and \$41.25 per share and an average exercise price of \$17.72 per share were cancelled and 298,850 new options were granted with an exercise price of \$8.66 per share, the fair market value of the Company's common stock on October 2, 1998. No executive officer of the Company participated in the stock option repricing.

The Company applies APB No. 25 and related interpretations in accounting for stock-based compensation. The Company has recognized compensation expense of \$21,000, \$61,000 and \$61,000, respectively, in each of the fiscal years 2001, 2000 and 1999 for stock-based compensation. Had compensation cost for the stock-based compensation been determined based on the fair value at the grant

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ADE CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

11. EMPLOYEE COMPENSATION PLANS (CONTINUED)

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,		
	2001	2000	1999
	(IN THOUSANDS, EXCEPT PER SHARE DATA)		
Net income (loss):			
As reported.....	\$ 508	\$ (20,447)	\$ (24,528)
Pro forma.....	\$ (1,843)	\$ (22,413)	\$ (25,625)
Basic earnings (loss) per share:			
As reported.....	\$ 0.04	\$ (1.53)	\$ (1.89)
Pro forma.....	\$ (0.14)	\$ (1.68)	\$ (1.97)
Diluted earnings (loss) per share:			
As reported.....	\$ 0.04	\$ (1.53)	\$ (1.89)
Pro forma.....	\$ (0.14)	\$ (1.68)	\$ (1.97)

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 2001, 2000 and 1999: no dividend yield; risk free interest rates of 5.1%, 6.6% and 5.2%, respectively; expected option terms of 7 years, 6 years and 7 years, respectively, and expected purchase right terms of three months; volatility of 62% for options and purchase rights granted in fiscal 2001, 58% for options and purchase rights granted in fiscal year 2000 and 70% for options and purchase rights granted in fiscal 1999. 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

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years 2001, 2000 and 1999 was \$12.15, \$10.31 and \$7.19, respectively. The weighted average fair value per purchase right for purchase rights granted in fiscal years 2001, 2000 and 1999 was \$4.96, \$3.12 and \$3.48, respectively.

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ADE CORPORATION NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

11. EMPLOYEE COMPENSATION PLANS (CONTINUED)

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 2001, 2000 and 1999 is not necessarily representative of the pro forma effects of reported net income and earnings per share for future years. Stock option activity is summarized as follows:

	NUMBER OF SHARES	WEIGHTED AVERAGE EXERCISE PRICE
	-----	-----
Options outstanding at April 30, 1998.....	716,020	\$12.20
Granted.....	558,850	10.16
Exercised.....	(106,820)	4.84
Canceled.....	(408,300)	17.23

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
	=====	

The number and weighted average exercise price of options exercisable at April 30, 2001, 2000 and 1999 was 285,904 and \$11.43; 172,660 and \$9.43; and 198,900 and \$7.34, respectively.

The following table summarizes information about stock options outstanding at April 30, 2001:

	OPTIONS OUTSTANDING			OPTIONS EXERCISABLE	
	NUMBER OUTSTANDING	WEIGHTED AVERAGE REMAINING CONTRACTUAL LIFE (YEARS)	WEIGHTED AVERAGE EXERCISE PRICE	NUMBER EXERCISABLE	WEIGHTED AVERAGE EXERCISE PRICE
RANGE OF EXERCISE PRICES	-----	-----	-----	-----	-----

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\$4.13--\$5.88.....	35,100	2.9	\$ 4.44	35,100	\$ 4.44
\$8.38--\$9.94.....	320,080	7.1	8.75	130,240	8.88
\$11.25--\$14.75.....	248,950	8.2	13.06	54,200	13.13
\$15.06--\$21.16.....	495,315	8.9	19.56	66,164	18.69
\$41.25.....	200	6.3	41.25	200	41.25
	-----	---	-----	-----	-----
	1,099,645	8.0	\$14.46	285,904	\$11.43
	=====	===	=====	=====	=====

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ADE CORPORATION
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

12. STOCKHOLDERS' EQUITY

RESERVED SHARES

At April 30, 2001, the Company has reserved 1,721,536 shares of common stock for issuance upon the exercise of outstanding and available common stock options and for issuance to employees under the Purchase Plan.

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.

13. SEGMENT, GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION

Beginning in the third quarter of fiscal 2001, the Company consolidated its reported segments to conform with how the Company now manages its business. Prior to the third quarter of fiscal 2001, the Company reported three 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. Prior year segment information has been recast to conform with the current year presentation. 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.

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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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13. SEGMENT, GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION (CONTINUED)

	SSG	PST	ATI	TOTAL
	(IN THOUSANDS)			
FOR THE YEAR ENDED APRIL 30, 2001				
Revenue from external customers.....	81,497	10,711	10,836	\$103,044
Intersegment revenue.....	319	--	581	900
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
FOR THE YEAR ENDED APRIL 30, 2000				
Revenue from external customers.....	\$ 44,965	\$ 6,400	\$ 9,235	\$ 60,600
Intersegment revenue.....	1,079	--	315	1,394
Income (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
FOR THE YEAR ENDED APRIL 30, 1999				
Revenue from external customers.....	\$ 43,223	\$ 7,916	\$ 8,594	\$ 59,733
Intersegment revenue.....	632	--	456	1,088
Income (loss) from operations.....	(32,321)	1,343	(5,107)	(36,085)
Depreciation and amortization expense.....	5,218	16	411	5,645
Capital expenditures.....	7,592	92	75	7,759
Restructuring charges.....	2,318	--	--	2,318

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.

	YEAR ENDED APRIL 30,		
	2001	2000	1999
	(IN THOUSANDS)		
Total external revenue for reportable segments.....	\$103,044	\$ 60,600	\$ 59,733
Net impact of revenue recognition on sales to affiliate....	(2,861)	1,906	1,152
	-----	-----	-----
Total consolidated revenue.....	\$100,183	\$ 62,506	\$ 60,885
	=====	=====	=====
Total operating profit (loss) for reportable segments.....	\$ 2,800	\$(21,701)	\$(36,085)
Net impact of intercompany gross profit eliminations and deferred profit on sales to affiliate.....	(1,602)	1,565	704
	-----	-----	-----

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Total consolidated operating profit (loss).....	\$ 1,198	\$ (20,136)	\$ (35,381)
	=====	=====	=====

Revenue by geographic area is summarized as follows:

	YEAR ENDED APRIL 30,		
	2001	2000	1999

	(IN THOUSANDS)		
United States.....	\$ 36,583	\$22,372	\$24,723
Japan.....	24,303	16,256	15,809
Taiwan.....	10,226	4,452	4,451
Europe.....	11,196	10,688	7,953
Asia.....	17,875	8,738	7,949
	-----	-----	-----
	\$100,183	\$62,506	\$60,885
	=====	=====	=====

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13. SEGMENT, GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION (CONTINUED)

Revenue from JAL in fiscal years 2001, 2000 and 1999 totaled \$15,452,000 (15%), \$8,787,000 (14%), and \$9,254,000 (16%), respectively. Revenue from another customer in fiscal years 2001, 2000 and 1999 totaled \$12,318,000 (12%), \$3,825,000 (6%), and \$6,553,000 (11%), respectively. Revenue from a third customer in fiscal 2001, 2000 and 1999 totaled \$7,865,000 (8%) and \$5,635,000 (9%) and \$4,046,000 (7%), respectively. As of April 30, 2001, 2000 and 1999, all of the Company's long-lived assets are located in the United States except for \$350,000, \$269,000, and \$245,000, respectively.

14. INCOME TAXES

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

	YEAR ENDED APRIL 30,		
	2001	2000	1999

	(IN THOUSANDS)		
Current tax expense (benefit):			
Federal.....	\$ 212	\$ --	\$ (8,997)
Foreign.....	45	82	66
State.....	(220)	20	55
	-----	-----	-----
	37	102	(8,876)
	-----	-----	-----
Deferred tax expense (benefit):			
Federal.....	--	--	445
State.....	--	--	(904)
	-----	-----	-----
	--	--	(459)
	-----	-----	-----
	\$ 37	\$102	\$ (9,335)

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

	2001	2000
	-----	-----
Deferred tax assets:		
Inventories, due to reserves and additional costs		
inventoried for tax purposes.....	\$ 5,020	\$ 4,417
Acquired in-process research and development and		
intangibles.....	2,372	2,441
Accrued expenses.....	1,859	1,240
Deferred revenue.....	3,383	2,445
Deferred profit on sales to affiliates.....	728	128
Net operating loss carryforwards.....	9,190	10,238
Bad debt reserve.....	349	239
Depreciation.....	124	--
Other.....	203	76
	-----	-----
Gross deferred tax assets.....	23,228	21,224
Deferred tax valuation allowance.....	(12,638)	(10,396)
	-----	-----
Net deferred tax assets.....	10,590	10,828
Deferred tax liabilities:		
Depreciation.....	--	(238)
	-----	-----
Total net deferred tax assets.....	\$ 10,590	\$ 10,590
	=====	=====

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14. INCOME TAXES (CONTINUED)

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 year ended April 30, 2001, the Company increased its valuation allowance against deferred tax assets by \$2,242,000, as the full value of its net operating and capital loss carryforwards and temporary differences may not be realized. This increase was based upon weighing all evidence available to management, including a capital loss generated in fiscal 2001 of \$2,079,000 from the sale of one of the Company's investments, current estimates of future taxable income, the cyclical nature of the semiconductor and data storage industries and the uncertainty within those markets. The amount of the deferred tax assets considered realizable could materially change in the near term if estimates of future taxable income change or do not materialize. Net operating loss carryforwards generated in fiscal 1999 and 2000 begin to expire in fiscal 2004 for state purposes and in fiscal 2019 for federal purposes.

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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, 2001 and 2000, not limited in their use due to ownership changes, totaled \$7,714,000 and \$8,975,000, respectively. Included in the net operating loss carryforwards for April 30, 2001 and 2000 are \$1,634,000 and \$1,698,000, 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 2001, 2000 and 1999:

	YEAR ENDED APRIL 30,		
	2001	2000	1999
	(IN THOUSANDS)		
Statutory federal rate.....	\$ 190	\$ (6,411)	\$ (11,170)
State taxes, net of federal benefit.....	(220)	(488)	(566)
Foreign sales corporation benefit.....	--	--	(72)
Research and development tax credits.....	--	--	--
AMT credit carryforwards.....	--	--	(634)
Valuation allowance.....	--	7,060	3,000
Other.....	67	(59)	107
	-----	-----	-----
	\$ 37	\$ 102	\$ (9,335)
	=====	=====	=====

The income tax benefits related to the exercise and disqualifying dispositions of certain stock options reduces taxes currently payable and is credited to additional paid-in capital. Such amount approximated \$115,000 for the year ended April 30, 1999.

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15. 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 2001, 2000 and 1999 were approximately \$671,000, \$596,000 and \$726,000, respectively.

16. 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.

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

YEAR ENDING APRIL 30,	(IN THOUSANDS)
2002.....	\$ 772
2002.....	803
2004.....	731
2005.....	525
2006.....	466
Thereafter.....	206

	\$3,503
	=====

Total rent expense under non-cancelable operating leases was approximately \$826,000, \$1,436,000, and \$1,181,000 for the years ended April 30, 2001, 2000 and 1999, respectively.

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. Since these matters are at a preliminary stage, 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.

17. SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION

	YEAR ENDED APRIL 30,		
	2001	2000	1999
CASH PAID DURING THE YEAR			
Interest.....	\$ 695	\$ 728	\$ 620
Income taxes paid (refunds received), net.....	\$ (329)	\$ (8,732)	\$ (5,885)

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FINANCIAL STATEMENT SCHEDULE
(IN THOUSANDS)

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SCHEDULE II--VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

DESCRIPTION	BALANCE AT MAY 1, 1998	CHARGED TO COSTS AND EXPENSES	CHARGED TO OTHER ACCOUNTS	DEDUCTIONS AND WRITE-OFFS	BA APRI
Allowance for doubtful accounts.....	1,805	--	--	(985)	
Inventory obsolescence.....	4,035	6,167	--	(1,523)	
Deferred tax asset valuation allowance.....	352	3,000	--	(16)	

DESCRIPTION	BALANCE AT MAY 1, 1999	CHARGED TO COSTS AND EXPENSES	CHARGED TO OTHER ACCOUNTS	DEDUCTIONS AND WRITE-OFFS	BA APRI
Allowance for doubtful accounts.....	820	339	--	(530)	
Inventory obsolescence.....	8,679	--	--	(1,730)	
Deferred tax asset valuation allowance.....	3,336	7,060	--	--	

DESCRIPTION	BALANCE AT MAY 1, 2000	CHARGED TO COSTS AND EXPENSES	CHARGED TO OTHER ACCOUNTS	DEDUCTIONS AND WRITE-OFFS	BA APRI
Allowance for doubtful accounts.....	629	291	--	(3)	
Inventory obsolescence.....	6,949	1,927	--	(727)	
Deferred tax asset valuation allowance.....	10,396	2,242	--	--	

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