AMERICAN SCIENCE & ENGINEERING INC
Form 10-K
June 13, 2008

# UNITED STATES

# SECURITIES AND EXCHANGE COMMISSION

**Washington, D.C. 20549**

---

# FORM 10-K

| | |
|---|---|
| **x** | **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934** |
| | **For the fiscal year ended March 31, 2008** |
| **o** | **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934** |

**Commission file number 1-6549**

---

# AMERICAN SCIENCE AND ENGINEERING, INC.

(Exact name of registrant as specified in its charter)

| | |
|---|---|
| **Massachusetts** | **04-2240991** |
| (State or other jurisdiction of incorporation or organization) | (IRS Employer Identification No.) |
| **829 Middlesex Turnpike, Billerica, Massachusetts** | **01821** |
| (Address of principal executive offices) | (Zip Code) |

**(978) 262-8700**

(Registrant s telephone number, including area code)

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

| Title of each class | Name of each exchange on which registered |
|---|---|
| **Common Stock ($.66 2/3 par value)** | **NASDAQ Stock Exchange** |

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by checkmark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes o No x

Indicate by checkmark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act: Yes o No x

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of large accelerated filer, accelerated filer, and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

| | |
|---|---|
| Large accelerated filer o | Accelerated filer x |
| Non-accelerated filer o (Do not check if a smaller reporting company) | Smaller reporting company o |

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No x

The aggregate market value of voting stock held by non-affiliates of the registrant, computed using the closing sale price of common stock of $62.66 on September 30, 2007 was $546,583,000.

8,768,257 shares of registrant s common stock were outstanding on May 28, 2008.

**DOCUMENTS INCORPORATED BY REFERENCE**

**The registrant intends to file a definitive Proxy Statement pursuant to Regulation 14A within 120 days of the end of the fiscal year ended March 31, 2008. Portions of such Proxy Statement are incorporated by reference in Part III.**

**AMERICAN SCIENCE AND ENGINEERING, INC.**

**FORM 10-K**

**FOR THE PERIOD ENDED MARCH 31, 2008**

**TABLE OF CONTENTS**


| | | Page Number |
|---|---|---|
| | **PART I** | |
| ITEM 1. | Business | 3 |
| ITEM 1A. | Risk Factors | 8 |
| ITEM 1B. | Unresolved Staff Comments | 14 |
| ITEM 2. | Properties | 14 |
| ITEM 3. | Legal Proceedings | 14 |
| ITEM 4. | Submission of Matters to a Vote of Security Holders | 14 |
| | **PART II** | |
| ITEM 5. | Market for the Company s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities | 15 |
| ITEM 6. | Selected Financial Data | 17 |
| ITEM 7. | Management s Discussion and Analysis of Financial Condition and Results of Operations | 17 |
| ITEM 7A. | Quantitative and Qualitative Disclosures about Market Risk | 23 |
| ITEM 8. | Financial Statements and Supplementary Data | 23 |
| ITEM 9. | Changes in and Disagreements with Accountants on Accounting and Financial Disclosure | 23 |
| ITEM 9A. | Controls and Procedures | 24 |
| ITEM 9B. | Other Information | 24 |
| | **PART III** | |
| ITEM 10. | Directors, Executive Officers and Corporate Governance | 24 |
| ITEM 11. | Executive Compensation | 24 |
| ITEM 12. | Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters | 25 |
| ITEM 13. | Certain Relationships and Related Transactions, and Director Independence | 25 |
| ITEM 14. | Principal Accounting Fees and Services | 25 |
| | **PART IV** | |
| ITEM 15. | Exhibits and Financial Statement Schedules | 25 |
| SIGNATURES | | 48 |
| EXHIBIT INDEX | | 49 |

**CAUTIONARY STATEMENT**

This Annual Report and the documents incorporated by reference contain forward-looking statements. For this purpose, any statements contained herein that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words believes , anticipates , plans , expects , should and similar expressions are intended to identify forward-looking statements. The factors discussed under Item 1A. Risk Factors , among others, could cause actual results to differ materially from those indicated by forward-looking statements made herein and presented elsewhere by management from time to time. We expressly disclaim any obligation to update or alter our forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

All references in this Annual report to AS&E , the Company , we , our and us means American Science and Engineering, Inc. and its subsidiar

**PART I**

**ITEM 1. BUSINESS**

American Science and Engineering, Inc., a Massachusetts corporation formed in 1958, develops, manufactures, markets, and sells X-ray inspection and other inspection solutions for homeland security and other targeted markets. AS&E® provides maintenance, warranty, research, engineering, and training services related to these solutions.

The Company manufactures sophisticated X-ray inspection products that can be used to inspect parcels, baggage, vehicles, pallets, cargo containers, and people. The Company sells its products in the United States and throughout the world to a variety of customers, including:

- Authorities responsible for port and border security
- Aviation security agencies
- Military organizations; and
- High threat commercial and government facilities

AS&E s products are used by these customers to help combat terrorism, trade fraud, drug trafficking, weapons smuggling, and illegal immigration. Our products are also used for military force protection and general facility security.

Beginning with the terrorist attacks on September 11, 2001, and continuing with the proliferation of global terrorism, homeland security and force protection concerns have become of paramount importance in the United States and around the world. The Company believes that homeland defense, force protection and military security initiatives will continue to provide new revenue opportunities, with additional growth in the seaports and borders, federal and military facilities, and corporate security markets.

The Company s objective is to distinguish itself from its competitors by offering innovative products which provide superior threat detection. To achieve this, AS&E incorporates a variety of X-ray imaging and image processing technologies into its products. A number of the Company s products use our patented Z Backscatter technology. Z Backscatter is a unique X-ray imaging technique that has distinct advantages for the detection of organic or low atomic number (Z) materials such as plastic explosives, composite weapons, and illegal drugs even when concealed by complex backgrounds.

**Technology**

The Company s X-ray imaging products utilize several technologies including traditional transmission X-ray technology, our proprietary Z Backscatter technology, Shaped Energy technology and Radioactive Threat Detection (RTD).

X-ray imaging devices contain these basic subsystems: X-ray sources, detectors, and software. The source generates an X-ray beam that is directed at the object to be scanned (baggage, container, etc.). When the source X-rays encounter the object, they are either absorbed by the object, pass directly through the object, or scatter off of the object. Dense (high atomic number) materials tend to absorb X-rays. Materials that are less dense (low atomic number) tend to scatter X-rays. The detectors record the intensity of the transmitted or scattered X-rays. Software is then used to interpret the signals from the detectors and to construct and display X-ray images.

***Transmission X-ray Technology:*** Transmission images are created from X-rays that pass through the object that is being examined. Medical X-ray images are a type of transmission X-ray. In transmission imaging, the detector measures the relative intensity of the X-rays that pass directly through the object. The degree to which X-rays are transmitted through an object is dependant upon the size of the X-ray source and the composition and quantity of the material in the path of the X-ray beam. Low energy sources are used to scan smaller objects such as parcels and baggage, and high energy sources are used for scanning large

items such as trucks and cargo containers. Transmission X-ray images are useful for seeing through the object of interest. A transmission image, however, represents an aggregate of all objects in the path on the beam and can therefore be difficult to interpret.

***Z Backscatter Technology:*** Most of the Company s X-ray systems utilize AS&E s patented Z Backscatter technology. The term Backscatter refers to those X-rays that *scatter* off of the object under examination *back* toward the X-ray source. Z Backscatter detectors capture these scattered X-rays which are then used to create highly readable, photo-like images.

Many threat items are organic in nature and have low atomic numbers. Such items include drugs, explosives, composite weapons, and stowaways. These items tend to scatter X-rays much more so than inorganic materials like steel and other metals. As a result, these organic threat items tend to stand out as bright, visible objects when scanned by a Z Backscatter imaging system.

Z Backscatter images complement transmission images and several of the Company s products employ both technologies. The combination of backscatter and transmission images gives security officials more information about the contents of the baggage or container by differentiating dense materials, such as metals, from low-Z materials such as explosives. In addition, the two images enable an inspector to perform a quicker and more thorough examination of the object in question.

***Other Technologies:*** Two other technologies employed by AS&E are Shaped Energy and Radioactive Threat Detection (RTD). Shaped Energy technology is a specialized form of high energy transmission X-ray which is used in AS&E s OmniView product line. Radioactive Threat Detection (RTD) is a technology which is used to find radioactive materials in vehicles.

**Products and Systems**

The Company s products and services can be grouped into six different areas including CargoSearch Inspection Systems, Z Backscatter Systems, ParcelSearch Inspection Systems, Personnel Inspection, Contract Research and Development, and Service and Support.

***CargoSearch Inspection Systems:*** The CargoSearch family of systems includes non-intrusive inspection products which are primarily used for the screening of trucks, cars, cargo containers, pallets, and air cargo at locations including border crossings, seaports, military bases, railroad centers, airports, and cargo and transportation hubs. The CargoSearch systems are designed to combat trade fraud, drug trafficking, weapons smuggling, and terrorism. The CargoSearch family includes:

*OmniView Gantry System*: a multi-view, relocatable high-energy cargo and vehicle inspection system. This system combines 6 MeV high-energy transmission imaging and three Z Backscatter X-ray views for left, right and top-side imaging of cargo. OmniView provides side and top-down views of the cargo in a relocatable configuration. OmniView utilizes AS&E s patented Shaped Energy technology to penetrate densely loaded cargo containers. Shaped Energy shapes the high energy spectrum to filter out non-essential radiation, making the system safe for operators and staff. High energy 6.0 MeV transmission X-rays can penetrate 14 inches (35 cm) of steel or 8.5 feet (260 cm) of oil, yet doesn t require heavy shielding, an exterior building, or standoff zones. The Z Backscatter images are ideal for the detection of organic or low Z materials including explosives, drugs, alcohol, and tobacco that transmission X-rays alone can miss. The System s multiple Z Backscatter views of the cargo improve detection while facilitating interpretation of the X-ray image. The OmniView Gantry System s scanning platform operates by moving on rails past stationary vehicles and cargo. The system is bi-directional allowing for a throughput of approximately 25 trucks per

hour. OmniView Gantry is ideal for ports, borders, and high-threat military facilities.

*Z Portal*®: a multi-view, high throughput, drive-through inspection system capable of scanning cars, vans, trucks, and their cargoes for threats and contraband. The relocatable screening system can be configured with one, two or three Z Backscatter X-ray detectors, allowing for left, right and/or top-side imaging of the vehicle under examination. The images produced by the Z Portal are ideal for the detection of organic materials including explosives, drugs, alcohol, tobacco, and stowaways. The Z Portal is well-suited for scanning vehicles at border crossings, high threat facilities, and other vehicle entry checkpoints.

*PalletSearch* : a conveyorized X-ray inspection system designed to perform non-intrusive inspection of mixed cargo shipped on large pallets or in air cargo containers. The system is especially useful for inspecting large, irregularly shaped containers and cargo.

***Z Backscatter Systems:*** Z Backscatter Systems include imaging systems that use Z Backscatter imaging only.

*Z Backscatter Van (ZBV*): a mobile X-ray screening system built into a commercially available chassis. It utilizes Z Backscatter X-ray technology to produce photo-like images of the contents of a vehicle or cargo container, highlighting organic materials such as plastic explosives or other anomalies. With one-sided, backscatter-only imaging, security officials can use

ZBV for screening vehicles, sea containers, and other cargo for terrorist threats, trade fraud, and contraband, simply by driving past the objects. The ZBV can be equipped with Radioactive Threat Detection (RTD) capability. With RTD, the ZBV can produce Z Backscatter images for general screening while simultaneously scanning the object for the presence of radioactive material. The ZBV is available in several versions, including a militarized trailer configuration (ZBV Mil Trailer) that is designed for use by the U.S. military.

***ParcelSearch Inspection Systems:*** ParcelSearch systems are designed for the non-intrusive X-ray scanning of parcels, baggage, and mail. These systems are primarily located in government facilities, airports, commercial office buildings, high-security federal facilities and convention centers. ParcelSearch systems include:

*Gemini* : Gemini is a parcel and baggage inspection system which combines AS&E s Z Backscatter technology with Dual-energy transmission X-ray to provide enhanced detection for a wide range of threats. Dual-energy transmission is best suited for the detection of threats such as guns and knives, and for identifying wires and other components of improvised explosive devises ( IEDs ). It also provides some organic and metallic discrimination in uncluttered environments. Z Backscatter imaging provides enhanced detection of organic materials such as explosives and narcotics, which may be missed by transmission-only systems in cluttered baggage. In addition, the complementary photo-like Z Backscatter image makes it easier for security officers to interpret images, thus reducing analysis time and minimizing operator fatigue.

*Model 101VAN* : a self-contained conveyor-based parcel inspection system housed in a standard van; designed and built to the rigorous specifications of U.S. Customs and Border Protection.

*Models 101Z , 101ZZ , and 101XL* : conveyor-based systems allowing rapid inspection of high volumes of luggage and other packages.

***Personnel Screening:*** Personnel screening is a crucial part of any threat detection effort. Today, threats can take the smallest of forms and are often easily hidden on a person. With the advent of suicide bombings, personnel screening has taken on an even more important role. Personnel screening is also important in the effort to intercept prohibited substances, such as drugs and alcohol.

*SmartCheck* : a personnel screening system for the effective screening for contraband and threats hidden under a person s clothing. SmartCheck simultaneously detects both metallic and non-metallic objects, such as guns and knives, plastic explosives, liquid explosives, composite weapons, drugs and other hidden threats and contraband. Its Z Backscatter image gives the operator an easy-to-read display of where the threat or contraband is hidden, thus eliminating the need for intrusive and time-consuming pat-downs and strip searches. SmartCheck employs proprietary advanced image processing algorithms to enhance privacy, while maintaining a high level of threat detection.

***Contract Research & Development***: AS&E engages in a variety of contract research and development (CRAD) programs, mostly for agencies of the U.S. government. AS&E pursues CRAD opportunities which it believes provide avenues for advancing our core technologies or developing product offerings for strategic customers or markets.

***Service and Support:*** AS&E s highly skilled Field Service Engineers (FSEs) provide support services worldwide. Each FSE has a technical degree in Electrical and/or Mechanical Engineering (or equivalent experience), and is trained in the operation and repair of electronics, hydraulics, pneumatics, mechanics, electrical systems, and computers. FSEs are available 7 days a week, 24 hours a day, and are located at AS&E offices in Asia, Central America, Europe, the Middle East, and North America. In addition, Technical Support is provided at the

Company s headquarters in Billerica, Massachusetts. AS&E provides comprehensive, cost-effective spare parts solutions customized for each system. The Company maintains an inventory of field-replaceable components in order to meet customer needs for spare parts.

AS&E provides comprehensive technical training on all X-ray inspection systems. Our instructors specialize in current threat detection techniques and employ both classroom theory and hands-on training to help clients become expert users of AS&E equipment. Our technical training informs customers about detection technologies and best practices through demonstrations and field activities that simulate real-life threat and contraband encounters. Technical training is included with each system sale and additional training for image analysis, service and maintenance training, and other customized training courses are provided aftermarket to interested customers.

**Intellectual Property**

The Company relies on a combination of patent, copyright, trademark, contract and trade secret laws to establish and protect its proprietary rights in its technology. The Company has patents either issued and/or pending in the United States, Germany, Japan, the United Kingdom, China, Austria, France, Ireland, Italy, Switzerland, Australia, Canada, Belgium, Denmark, Finland, Greece, Italy, Netherlands, Portugal, Spain, Sweden, Turkey, Hong Kong, India, Israel, The Republic of Korea, New Zealand, Mexico,

Norway, The Russian Federation, Ukraine, Singapore, United Arab Emirates, Malaysia, Thailand and Egypt, and under the Gulf Cooperation Council and the Patent Cooperation Treaty.

In general, the Company pursues a policy of obtaining patent protection both in the United States and in selected foreign countries for subject matter we consider patentable and important to our business strategy. The Company has 63 unexpired patents issued by, and 59 patent applications pending with, the U.S. Patent and Trademark Office, as well as with the respective patent offices of the foreign countries noted above. Over half of our issued patents have been issued in the last five years.

Generally, patents issued in the United States are effective for the longer of 17 years from the date of issue or 20 years from the earliest effective filing date of the corresponding patent application if filed prior to June 8, 1995. The duration of foreign patents varies in accordance with applicable local law. While the duration of our patents varies, we believe that the duration of our patents is adequate relative to the expected lives of our products.

The Company believes that its patents, proprietary technology, know-how, and trademarks provide substantial protection for the Company s competitive position and the Company intends to aggressively protect its intellectual property assets, by litigation or other means, as appropriate. Nevertheless, there can be no assurances that the steps taken by the Company in this regard will be adequate to prevent misappropriation or infringement of its technology or that the Company s competitors will not independently develop technologies that are substantially equivalent or superior to the Company s technology. Effective protection of intellectual property rights may be limited or unavailable in certain foreign countries. See Item 3. Legal Proceedings below.

**Sales and Marketing**

The Company s X-ray products are marketed to corporate and governmental organizations through a sales force that contacts potential customers and responds to public tenders and other expressions of interest. This sales force includes Company personnel based in the United States and abroad, as well as independent representatives under contracts to sell in foreign countries.

**Customers**

The Company has a customer base consisting of government and commercial clients from both the United States and abroad. Domestically, the Company s primary client base is comprised of agencies of the U.S. Government. Approximately 55%, 70%, and 77% of the Company s total sales in fiscal 2008, 2007, and 2006, respectively, were derived from either (i) contracting directly with the U.S. Government, or (ii) contracting with contractors working directly with the U.S. Government. Certain of the Company s contracts with the U.S. Government provide the U.S. Government with the standard unilateral right to terminate these contracts for convenience. To date, the Company has not experienced any material losses as a result of this contractual provision. The Company is heavily dependent upon sales to agencies of the U.S. Government and reductions or delays in procurement of the Company s systems and services by these agencies may have a material adverse effect on the Company.

International sales, primarily to foreign governments, accounted for approximately 36%, 27%, and 14% of the Company s total sales in fiscal 2008, 2007, and 2006 respectively, and continue to be a high priority for the Company as part of its long-term growth strategy. International

sales entail longer sales cycles and project financing requirements; however the Company continues to focus on these sales as a means of broadening its customer base and reducing its dependency on sales to the U.S. Government. The Company manages its overseas risk in a number of ways, including actively increasing the number of opportunities it is pursuing at any one time, working with international funding sources to help customers finance and secure funding of these projects, and obtaining downpayments and letters of credit to secure its international receivables. The majority of international contracts are bid in U.S. dollars. For those contracts that are bid in other currencies, the Company considers the need to engage in hedging contracts to control foreign exchange risk. There were no hedging activities in fiscal 2008, 2007, or 2006.

In fiscal 2008, the Company had sales to two major customers, both agencies of the U.S. Government, which accounted for 12% and 10% of total sales. In fiscal 2007, the Company had sales to two major customers, both agencies of the U.S. Government, which accounted for 31% and 15% of total sales. In fiscal 2006, these same customers accounted for 26% and 30% of total sales.

**Competition**

The Company has many competitors in the homeland security X-ray detection market, including several large and well-established manufacturers of security equipment with financial and other resources greater than those of the Company. Certain X-ray security system customers select such systems based largely on price. Other customers, including some agencies of the U.S. Government and certain users in countries with high levels of concern over security, tend to select systems based largely on detection capability. Many of the Company s systems offer premium performance and have in some cases been priced higher than many competing systems. The Company believes that its patented and proprietary technology give it a strong competitive position in the sale of security systems to customers concerned with performance and detection. The Company also believes that its strategy

of concentrating on products with unique features, including Z Backscatter and Shaped Energy, and/or competitive pricing will give it a strong position to increase its sales of X-ray systems. However, a number of companies have developed products that compete with the Company s X-ray inspection products. (See Forward-Looking Information and Factors Affecting Future Performance )

**ISO 9001 Certification**

In August 2006, the Company s Quality Management System was recertified under the ISO 9001:2000 Standard of the International Organization for Standardization which it has been registered under since 2003. ISO 9001 is an internationally recognized quality management and assurance standard.

In qualifying, the Company met or exceeded the standards for establishing a quality management system for preventing non-conformity at every level of the product life cycle, from customer order, through development and production, to installation and support.

The Company believes that demonstrating continuous quality improvement is vital for building customer satisfaction and making business processes more efficient in order to increase its competitive edge.

**Component Availability**

Critical material and subsystems are procured from both domestic suppliers as well as internationally from global supply partners. These supply sources are in some cases single sources of supply and the material provided can have extended lead times. In response to expanding customer demand in the global security screening market, the Company has taken steps to mitigate sourcing risks by working closely with its suppliers to ensure future material and subsystem availability to support its production plans. In some cases, the Company has chosen to stock reserve material to ensure future availability. Efforts have also included identifying and qualifying second source suppliers for critical material and a number of key subsystems in support of its product lines. The Company does not expect to experience sustained difficulties in securing required material and subsystems to support its forward business operations.

**Regulatory Compliance**

AS&E complies with applicable federal regulations under Title 21 CFR Subchapter J - Radiological Health. All AS&E cabinet X-ray products comply with all applicable U.S. Government radiation safety performance standards including 21 CFR 1020.40. All personnel inspection systems of AS&E comply with the voluntary consensus radiation safety standards adopted by the American National Standards Institute ANSI N43.17-2002.

**Research and Development**

The Company spent approximately $12,306,000 of its own funds for research and development during fiscal 2008, compared to $7,184,000 and $9,601,000 in fiscal 2007 and 2006, respectively. The fiscal 2008 research and development efforts were focused on design modifications and enhancements to existing products, the development of new applications and the development of new products.

In addition, the Company conducted government-sponsored research primarily focused on advances in X-ray systems, image analysis and integrated system development for niche security inspection problems. The Company recognized revenues of $13,978,000, $6,597,000, and $2,804,000 in fiscal 2008, 2007, and 2006, respectively for these efforts. Many of the Company s government sponsored research and development contracts provide for a fixed fee or a reimbursement of allowable costs plus a fixed fee. The Company s contracts in these areas are obtained by submitting research and development proposals to various organizations, sometimes in response to requests for such proposals.

**Personnel**

As of March 31, 2008 the Company had 346 employees as compared to 299 employees at March 31, 2007. It is the Company s policy to have employees sign nondisclosure agreements as a condition of employment. None of the Company s employees are represented by labor unions.

**Sales Backlog**

The Company s firm (signed contracts) sales backlog was $99,606,000, $105,634,000, and $68,840,000 at March 31, 2008, March 31, 2007, and March 31, 2006, respectively.

Certain of the Company s contracts with the U.S. Government contain clauses permitting the government to terminate the contract for convenience upon certain terms and conditions, including partial payment to the Company for work performed. Total contracts with U.S Government agencies and subcontractors in the backlog were $42,640,000, $58,833,000, and $30,058,000, at March 31, 2008, 2007 and 2006, respectively. It is estimated that approximately 77% of the 2008 backlog will be filled within the fiscal year ending March 31, 2009.

**Financial Information about Foreign and Domestic Operations and Export Sales**

Most export sales are transacted in U.S. dollars, and most are either secured by irrevocable letters of credit or paid in advance. The following table shows the breakdown of net sales and contract revenues to international and domestic customers and the major regions of international activity based upon customer s country of domicile. All assets are maintained within the United States with the exception of inventory depots, inventory in transit or awaiting installation and cash accounts maintained at foreign locations (approximately 4% of the Company s assets).

***Net Sales and Contract Revenues***

| (Dollars in thousands) | Fiscal Year 2008 | | 2007 | | 2006 | |
|---|---|---|---|---|---|---|
| Domestic | $ 107,021 | 64% | $ 111,335 | 73% | $ 141,491 | 86% |
| International | 59,712 | 36% | 41,851 | 27% | 22,113 | 14% |
| Net Sales and Contract Revenues | $ 166,733 | 100% | $ 153,186 | 100% | $ 163,604 | 100% |
| Percent of International Revenue by Major Region: | | | | | | |
| Middle East & Africa | 70% | | 66% | | 50% | |
| Pacific Rim | 14% | | 20% | | 37% | |
| Europe | 14% | | 14% | | 11% | |
| All Other | 2% | | % | | 2% | |

**Available Information**

The Company s principal executive offices are located at 829 Middlesex Turnpike, Billerica, MA 01821; telephone number 978-262-8700; corporate website www.as-e.com. We make available, free of charge through our website, our annual Form 10-K, current reports on Form 10-Q and Form 8-K, and amendments to these reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934 as soon as practicable. In addition, our reports, proxy and information statements and other information filed with the SEC are available at the SEC s Public Reference Room at 100 F Street, NE, Room 1580, Washington, DC 20549 (1-800-SEC-0330), and are also available from the SEC s website at www.sec.gov.

**ITEM 1A. RISK FACTORS**

You should carefully consider the following risk factors, in addition to other information included in this Annual Report on Form 10-K and other reports we file with the Securities and Exchange Commission. If any of the following risks occur, the Company s business, financial condition and operating results could be materially adversely affected.

**The Company s reliance on a small number of customers for a large portion of its revenues could harm its business and prospects.**

The Company s business is dependent on sales to a small number of customers, which include agencies of the United States government. During fiscal 2008, two customers accounted for 22% of the Company s total revenues. During fiscal 2007, two customers accounted for 46% of the Company s total revenues, and during fiscal 2006, two customers accounted for 56% of the Company s total revenues. Certain of the Company s government contracts may be terminated at the government s discretion. The termination of the Company s relationship with one or more of its significant customers or the reduction or delay of orders of its systems by these customers would substantially reduce the Company s revenues, and its business and prospects may be harmed.

**The Company conducts its business worldwide, which exposes it to a number of difficulties in coordinating its international activities and dealing with multiple regulatory environments.**

The Company s revenues to international customers, including foreign governments, accounted for approximately 36%, 27% and 14% of its net revenues for the fiscal years ended March 31, 2008, March 31, 2007 and March 31, 2006, respectively, and a significant number of domestic customer orders require shipments to, and services provided in, overseas locations. In addition, the

Company transacts business internationally with a number of its key suppliers. As a result of the Company s worldwide business operations, it is subject to various risks, including:

- international regulatory requirements and policy changes;
- lengthy sales cycles;
- longer payment cycles by foreign customers;
- difficulties in inventory management, accounts receivable collection and the management of distributors or representatives;
- difficulties in staffing and managing foreign operations;
- geopolitical instability;
- political and economic changes and disruptions;
- favoritism towards local suppliers;
- governmental currency controls;
- interruption to transportation flow for delivery of parts to us and finished goods to our customers;
- currency exchange rate fluctuations; and
- tariff regulations.

Although the Company s international sales have been denominated primarily in U.S. dollars, changes in currency exchange rates that increase the relative value of the U.S. dollar may make it more difficult for the Company to compete with foreign manufacturers on price or otherwise have a material adverse effect on its sales and operating results.

**The Company s lengthy sales cycle requires it to incur significant expenses with no assurance that it will generate revenue or recover such expenses.**

A substantial portion of the Company s sales depends upon the decision of governmental agencies to upgrade or expand security at border crossing inspection sites, existing airports, seaports and other facilities. Accordingly, a portion of the Company s product sales is subject to delays associated with the lengthy approval processes that often accompany such capital expenditures. During these approval periods, the Company expends significant financial and managerial resources in anticipation of future orders that may not occur. If the Company fails to receive an order after expending these resources, it may be unable to generate sufficient revenue to recover the costs incurred and its business and prospects may be harmed.

**The Company s business is dependent upon governmental policies and appropriations.**

The Company s largest customers are government agencies and demand for its products is dependent upon national priorities and governmental initiatives, including defense-related programs. These priorities and initiatives are subject to change from time to time in response to the economic and political environment. The Company is also exposed to the United States budget approval and appropriation decisions and processes which are driven by numerous factors, including geo-political events and macroeconomic conditions, and are beyond our control. While the overall level of U.S. defense spending has increased in recent years for numerous reasons, including increases in funding of operations in Iraq and Afghanistan and the U.S. Department of Defense s military transformation initiatives, we can give no assurance that such spending will continue to grow, or not be reduced. Significant changes in defense spending could have long-term consequences for our size and structure. In addition, changes in government priorities and requirements could impact the funding, or the timing of funding, of our programs which could negatively impact our results of operations and financial condition.

**Changes in governmental regulations may reduce demand for the Company s products or increase its expenses.**

The Company competes in markets in which the Company or its customers must comply with federal, state, local and foreign regulations, such as health and safety regulations. The Company develops, configures and markets its products to meet its customers needs created by these regulations. Any significant change in these regulations could reduce demand for the Company s products or increase its costs to comply with new regulations, both of which may adversely affect its operating results.

**The Company s reliance on a limited number of suppliers for some key components for its products could harm its business and prospects.**

The Company relies on a number of suppliers to provide material and subsystems for our products. The Company is reliant on a number of key international supply partners for core technology products, including subsystems with complex sub-tier supply chains. In addition, certain material or subsystems used in our products may be available from a sole source or limited number of suppliers, increasing the risk of supply disruption. Although our products may be able to be redesigned to avoid using any sole source supplier, it would be expensive and time consuming to make such a change. If the Company changes any of its suppliers, a qualification process would need to be completed and the affected product may require redesign, creating potential delays in product shipments.

Some of our suppliers may allocate material due to market demand for the products they produce or market constraints such as the global availability of raw materials. We have no guaranteed supply arrangements with our suppliers and there can be no assurance that our suppliers will continue to meet our requirements. Many of our competitors are much larger and may be able to obtain priority allocations from these shared suppliers, thereby limiting or making our sources of supply unreliable for these components. If our supply of materials is disrupted, we cannot ensure that we would be able to find another supplier on a timely basis.

The Company depends on its subcontractors and suppliers to deliver material that is in full compliance with critical quality and specification requirements. Quality issues may affect the reliability and performance of our products, customer confidence, and adversely impact financial performance. Any difficulty in obtaining sufficient and timely delivery of conforming material could result in delays or reductions in product shipments that could materially and adversely affect our business, financial condition and consolidated results of operations. This in turn could also damage our reputation in the market and cause us to lose market share. The Company does not expect to experience sustained difficulties in securing required material and subsystems to support forward business operations.

**Fluctuations in the Company s quarterly operating results may cause its stock price to fluctuate.**

Given the nature of the markets in which the Company participates, it cannot reliably predict future revenue and profitability. A high proportion of the Company s costs are fixed, due in part to its significant sales, research and development, and manufacturing costs. As a result of its fixed costs, small declines in revenue could disproportionately affect the Company s operating results and stock price in a quarter. Factors that may affect the Company s quarterly operating results and the market price of its common stock include:

- demand for and market acceptance of its X-ray inspection systems;
- lengthy sales cycles and the effect of large orders;
- changes in political agendas or national priorities;

- adverse changes in the level of economic activity in regions in which the Company does business;
- political unrest in the regions where the Company transacts business;
- adverse changes in industries on which the Company is particularly dependent;
- competitive pressures resulting in lower selling prices for its products;
- delays or problems in the introduction of new products;
- the Company s competitors announcement or introduction of new products, services or technological innovations;
- variations in the Company s product mix;
- the timing and amount of the Company s expenditures in anticipation of future sales;
- increased costs of raw materials or supplies; and
- changes in the volume or timing of product orders.

**The Company could incur substantial costs as a result of product liability claims and adverse publicity if its X-ray inspection systems fail to detect bombs, explosives, weapons, contraband or other threats to personal safety.**

If the Company s X-ray inspection systems fail to detect the presence of bombs, explosives, weapons, contraband or other threats to personal safety, the Company could be subject to product liability claims and negative publicity, which could result in increased costs, reduced sales, and a decline in the market price of the Company s common stock. There are many factors beyond the Company s control that could result in the failure of its products to detect the presence of bombs, explosives, weapons, contraband or other threats to personal safety. Examples of these factors include operator error or misuse of or malfunction of its equipment. The failure of the Company s systems to detect the presence of these dangerous materials may lead to personal injury, loss of life, and extensive property damage and may result in potential claims against the Company.

**The Company s insurance may be insufficient to protect it from product liability claims.**

The Company s product liability and umbrella liability insurance may be insufficient to protect it from product liability claims. Moreover, there is a risk that product liability insurance will not continue to be available to the Company at a reasonable cost, if at all. If liability claims exceed the Company s current or available insurance coverage, its business and prospects may be harmed. Regardless of the adequacy of the Company s product liability insurance protection, any significant claim may have an adverse affect on its industry and market reputation, leading to a substantial decrease in demand for its products and reduced revenues.

**The Company may not be able to fund its research and development activities.**

The Company generates funds for its research and development activities from operations, private sources and the government. The Company may be unable to generate the funds necessary to support its research and development activities if it does not generate sufficient funds from operations, other potential private sources, or the government. The Company may not successfully compete with other companies and research institutions for government funding and funding from other private sources. Additionally, government-funding priorities are subject to frequent changes. For example, in fiscal 2008, 2007, and 2006, the Company recorded $13,978,000, $6,597,000 and $2,804,000, respectively, for government-sponsored research and development. There is no guarantee that the Company will receive funds for government-sponsored research in the future. If the Company is unable to fund its research and development activities through its operations or from outside sources, the Company may be unable to continue to innovate or bring its innovations to market on a timely or cost effective basis, or its innovations may be surpassed by other competitors or new technologies.

**The Company s success depends on new product development.**

The Company s continuing research and development program is designed to develop new products and to enhance and improve its current products. The Company plans to expend significant resources on the development of its new products. The successful development of its products and product enhancements is subject to numerous risks, both known and unknown, including:

- unanticipated delays;

- access to capital;

- budget overruns;

- technical problems; and

- other difficulties that could result in the abandonment or substantial change in the design, development and commercialization of new products and product enhancements, including for example, changes requested or required by governmental and regulatory agencies.

Given the uncertainties inherent with product development and introduction of X-ray inspection systems, the Company cannot assure that its product development efforts will be successful on a timely basis or within budget, if at all. The Company s failure to develop new products and product enhancements on a timely basis or within budget would harm its business and prospects.

**The Company s success depends upon its ability to adapt to rapid changes in technology and customer requirements.**

The market for the Company s products has been characterized by rapid technological changes, frequent product introductions and evolving industry standards and customer requirements. The Company believes that these trends will continue into the foreseeable future. The Company s success will depend, in part, upon its ability to enhance its existing products, successfully develop new products that meet changing customer and regulatory requirements and gain market acceptance. If the Company fails to do so, its products may be rendered obsolete or uncompetitive by new industry standards or changing technology, in which case

its revenue and operating results would suffer. In developing any new product, the Company may be required to make a substantial investment before it can determine the commercial viability of the new product. If the Company fails to accurately foresee its customers needs and future activities, it may invest heavily in research and development of products that do not lead to significant revenue.

**The Company may not be able to compete successfully.**

A number of companies have developed products that compete with the Company s X-ray inspection products. Many of the Company s competitors are larger and have greater financial resources than it does. Some of its competitors have more extensive research, marketing and manufacturing capabilities and greater technical and personnel resources than the Company does, and may be better positioned to continue to improve their technology in order to compete in an evolving industry. The Company s failure to compete successfully could decrease demand for its products or make its products obsolete.

In the inspection systems market, competition is based primarily on the following factors:

- product performance, functionality and quality;
- price;
- the overall cost of ownership of the system;
- prior customer relationships;
- technological capabilities of the product;
- certification by government authorities;
- local market presence; and
- breadth of the sales and service organization.

To remain competitive, the Company must develop new products and periodically enhance its existing products in a timely manner. The Company anticipates that it may have to adjust the prices of some of its products to stay competitive. In addition, new competitors may emerge, and entire product lines may be threatened by new technologies or market trends that reduce the value of these product lines.

**The Company s business could be harmed if it is unable to protect its intellectual property.**

The Company relies primarily on a combination of trade secrets, patents, copyrights, trademarks, licensing arrangements and confidentiality procedures to protect its technology. Despite its precautions, the steps the Company has taken to protect its technology may be inadequate. Existing trade secret, patent, trademark and copyright laws offer only limited protection. The Company s patents could be invalidated or circumvented. In addition, others may develop substantially equivalent or superseding proprietary technology, or competitors may offer equivalent products in competition with the Company s products, thereby substantially reducing the value of the Company s proprietary rights. The laws of some foreign countries in which the Company s products are or may be developed, manufactured or sold may not protect its products or intellectual property rights to the same extent as do the laws of the United States. This may make the possibility of piracy of the Company s technology and products more likely. The Company cannot assure that the steps it has taken to protect its intellectual property will be adequate to prevent misappropriation of its technology. The Company s inability to protect its intellectual property could have a negative impact on its operations and financial results.

**The Company s business may be materially and adversely affected by infringement claims initiated by the Company or its competitors.**

Initiating or defending against the enforcement of the Company s intellectual property rights may result in significant, protracted, and costly litigation. The Company has previously been involved in various litigations involving its intellectual property and has been successful in protecting such interests to date. The Company expects intellectual property disputes to be an ordinary part of its business for the foreseeable future. The Company may initiate claims or litigation against third parties for infringement of its intellectual property rights, or to establish the validity of its property rights. There can be no assurance that the Company will prevail in any such action. Litigation by or against the Company could result in significant expense and divert the efforts of technical and management personnel, whether or not such litigation results in a favorable outcome for the Company. In the event of an adverse result in any such litigation, the Company could be required to pay substantial damages, cease the manufacture, use and sale of infringing products, expend significant resources to develop non-infringing technology, discontinue

the use of certain processes, or obtain licenses for the infringing technology. If a license were required, the Company cannot assure that it would be able to obtain one on commercially reasonable terms, if at all. The Company cannot assure that it will be successful in developing non-infringing technology or that the cost or time required to develop such technology will be reasonable.

**The Company s success depends on its ability to attract and retain qualified management professionals.**

The Company s future success depends in large measure upon the continued contributions of its senior management team and other key personnel. We cannot guarantee that we will be able to attract and retain key personnel or executive management in sufficient numbers, with the requisite skills or on acceptable terms necessary or advisable to support our continued growth. If we lose professionals or are unable to attract new talent, we will not be able to maintain our position in the market or grow our business.

**Existing external financing may not be available in the future.**

The Company may require additional capital to finance continuing operations. The Company cannot assure that operations will continue to be profitable, that it will generate levels of revenues and cash flows sufficient to fund operations, or, if necessary, that the Company will be able to obtain additional financing on satisfactory terms, if at all. Any existing financing arrangements may not be available or sufficient to meet the Company s cash needs or may not be available in the future, or, if available, at a cost that the Company believes is reasonable.

**Future sales of the Company s common stock by existing stockholders could depress the market price of the Company s common stock.**

Substantially all of the Company s outstanding shares of common stock are freely tradable without restriction or further registration. Affiliates must sell all shares they own in compliance with the volume and other requirements of Rule 144, except for the holding period requirements. Nevertheless, sales of substantial amounts of common stock by the Company s stockholders, or even the potential for such sales, may cause the market price of the Company s common stock to decline and could impair the Company s ability to raise capital through the sale of the Company s equity securities.

**The volatility of the Company s stock price could adversely affect an investment in the Company s common stock.**

The market price of the Company s common stock has been, and may continue to be, highly volatile. The Company believes that a variety of factors could cause the price of the Company s common stock to fluctuate, perhaps substantially, including:

- announcements of developments related to the Company s business;

- quarterly fluctuations in the Company s actual or anticipated operating results and order levels;

- general conditions in the worldwide economy;

- announcements of technological innovations;

- new products or product enhancements by the Company or its competitors;

- developments in patents or other intellectual property rights and litigation; and

- developments in the Company s relationships with its customers and suppliers.

In addition, in recent years the stock market in general, and the markets for shares of small capitalization and high-tech companies in particular, have experienced extreme price fluctuations which have often been unrelated to the operating performance of affected companies. Any such fluctuations in the future could adversely affect the market price of the Company s common stock.

**Provisions in the Company s articles of organization and the Company s shareholder rights plan may have the effect of discouraging advantageous offers for the Company s business or common stock, and limit the price that investors might be willing to pay in the future for shares of the Company s common stock.**

Provisions in the Company s articles of organization and the Company s shareholder rights plan may have the effect of discouraging or preventing a change in control. These provisions could limit the price that certain investors might be willing to pay in the future for shares of the Company s common stock. Specifically, the Company s articles of organization authorize its Board of Directors to issue up to 100,000 shares of preferred stock in one or more series, to fix certain rights, preferences, privileges and

restrictions granted to or imposed upon any wholly unissued shares of preferred stock, to fix the number of shares constituting any such series, and to fix the designation of any such series, without further vote or action by its shareholders. The terms of any series of preferred stock, which may include priority claims to assets and dividends and special voting rights, could adversely affect the rights of the holders of common stock and thereby reduce the value of the Company s common stock. The Company has no present plans to issue shares of preferred stock. The Company has in place a shareholder rights plan, which was renewed in April of 2008, under which its stockholders are entitled to purchase shares of its preferred stock under certain circumstances. These circumstances include the purchase of 15% or more of the outstanding shares of common stock by a person or group, or the announcement of a tender or exchange offer to acquire 15% or more of the outstanding common stock. The shareholder rights plan may have the effect of impeding or preventing certain types of transactions involving a change in control of the Company that could be beneficial to the stockholders.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

There are no unresolved written comments that were received from the SEC staff 180 days or more before the end of our fiscal year relating to our periodic or current reports under the Securities Exchange Act of 1934.

**ITEM 2. PROPERTIES**

The Company leases an 188,000 square foot facility located in Billerica, Massachusetts which is owned by an unaffiliated real estate limited partnership and serves as the Company s executive offices, research, manufacturing and warehouse facilities. The lease expires on February 29, 2016. The Company believes that its facilities are adequate and provide sufficient production capacity for its present intended purposes. The Company s facilities are currently utilized primarily on a one-shift basis. The Company is able to add additional capacity by adding second and third shifts if necessary.

The Company s former High Energy Systems division had leased 24,733 square feet of manufacturing, research and development, and office space in Mountain View, California. The lease commenced on February 1, 2004 and had an initial term of seven years with an option to extend for an additional five-year period. In January 2005, as part of the asset sale agreement with Accuray, Incorporated, the Company assigned its rights and obligations under this lease to Accuray. The Company is secondarily liable for the lease payments in the event of default by Accuray.

**ITEM 3. LEGAL PROCEEDINGS**

On October 3, 2007, the Company commenced litigation in the United States District Court for the Eastern District of Virginia against AutoClear, LLC, and its affiliates Control Screening, LLC, and Scan-Tech Security, LP, for infringement of the Company s United States Patent No. 5,313,511, seeking damages and injunctive relief. The parties have recently begun discovery in this matter.

On September 4, 2007, the Company received a notice from the United States Environmental Protection Agency (the EPA ) that it may potentially be liable for certain costs related to the proposed clean-up at the Sutton Brook Disposal Area Superfund Site located in Tewksbury, Massachusetts. The Company is one of approximately 45 entities identified by the EPA as a Potentially Responsible Party ( PRP ) in connection with alleged historical disposal of waste materials for the period from 1958 through the mid-1980s, the timeframe under investigation by the EPA. The Company has denied liability, and has initiated participation in the global negotiation and settlement processes with the EPA and with

other PRPs. Such negotiation processes are ongoing.

The Company is also subject to various legal proceedings and claims that arise in the ordinary course of business. At the present time, it is not possible to predict the outcome of these matters; however, the Company currently believes that resolving these matters will not have a material adverse impact on its financial condition, results of operations or cash flows.

**ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

No matter was submitted to a vote of the Company s security holders during the fourth quarter of the fiscal year covered by this report.

**PART II**

**ITEM 5. MARKET FOR THE COMPANY S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES**

**Market Information**

Our common stock is traded on the NASDAQ National Market under the symbol ASEI. The market price range for the common stock for the last two fiscal years as reported on the NASDAQ National Market is as follows:

| Fiscal Year | Quarter Ended | High | Low |
|---|---|---|---|
| 2008 | March 31, 2008 | $ 57.99 | $ 47.16 |
| | December 31, 2007 | $ 67.14 | $ 46.00 |
| | September 30, 2007 | $ 73.40 | $ 54.55 |
| | June 30, 2007 | $ 57.71 | $ 46.67 |
| | | | |
| 2007 | March 31, 2007 | $ 60.45 | $ 49.78 |
| | December 31, 2006 | $ 71.22 | $ 44.86 |
| | September 30, 2006 | $ 61.97 | $ 36.03 |
| | June 30, 2006 | $ 93.53 | $ 51.00 |

**Holders**

As of May 28, 2008, there were approximately 744 holders of record of the Company s common stock.

**Common Stock Dividends**

During fiscal 2008, the Board of Directors approved a cash dividend plan for 2008. Common stock cash dividends declared during the year ended March 31, 2008 were as follows:

| Date Declared | Dividend per common share |
|---|---|
| August 6, 2007 | 0.20 |
| November 5, 2007 | 0.20 |
| February 11, 2008 | 0.20 |
| Total | $ 0.60 |

On May 13, 2008, the Company declared another quarterly dividend of $0.20 for holders of record on May 19, 2008 to be paid June 6, 2008. No cash dividends were declared during the fiscal year ended March 31, 2007. The Company has received consent from its bank for these dividends as its credit facility restricts the payment of dividends (except in shares of the Company s stock). Future dividend payments will depend on our earnings, capital requirements, financial condition and capital needs and other factors considered relevant by our Board.

**Securities Authorized for Issuance under Equity Compensation Plans**

The following table provides information about the Company s stock option plans and the common stock that may be issued upon the exercise of options and rights under all existing equity compensation plans as of March 31, 2008.

| Plan category | Number of securities to be issued upon exercise of outstanding options and rights as of March 31, 2008 (a) | | Weighted-average exercise price of outstanding options and rights (b) | Number of securities remaining available for future issuance under equity compensation plans as of March 31, 2008 (excluding securities reflected in column(a)) |
|---|---|---|---|---|
| **Equity compensation plans approved by security holders:** | | | | |
| 1995 Combination Plan | 13,566 | $ | 15.28 | |
| 1999 Combination Plan | 51,560 | $ | 19.74 | |
| 2000 Combination Plan | 79,524 | $ | 32.09 | |
| 2002 Combination Plan | 130,974 | $ | 29.08 | |
| 2003 Stock Plan for Non-Employee Directors | 116,485 | $ | 40.73 | |
| 2005 Equity and Incentive Plan | 471,322 | $ | 42.43 | 143,641 |
| **Equity compensation plans not approved by security holders:** | | | | |
| 1997 Non-Qualified Option Plan | 29,811 | $ | 26.11 | |
| 1998 Non-Qualified Option Plan | 45,122 | $ | 31.59 | |
| Total | 938,364 | $ | 36.80 | 143,641 |

**Purchases of Equity Securities**

On May 17, 2007, the Board of Directors approved a Stock Repurchase Program which authorized the Company to repurchase up to $35 million of shares of its common stock from time to time on the open market. As of March 31, 2008, the maximum dollar value of shares that may yet be purchased under the program totaled $9,832,000.

The following table provides information about our purchases during the quarter ended March 31, 2008 of equity securities that are registered by us pursuant to Section 12 of the Exchange Act.

| 2008 | Total Number of Shares Purchased | Average Price Paid per Share | Total Number of Shares Purchased as Part of Publicly Announced Programs |
|---|---|---|---|
| January 1 January 31 | 80,755 | $ 51.83 | 80,755 |
| February 1 February 29 | 63,800 | 54.27 | 63,800 |
| March 1 March 31 | 70,000 | 52.94 | 70,000 |
| **Total** | 214,555 | $ 52.92 | 214,555 |

On May 8, 2008 the Board of Directors approved another Stock Repurchase Program which authorizes the Company to repurchase up to $35 million of shares of its common stock from time to time on the open market.

**Stock Performance Graph**

The following chart graphs the performance of the cumulative total return to shareholders (stock price appreciation plus dividends, if applicable) during the previous five years in comparison to the returns of the Standard & Poor s 500 Composite Stock Price Index and the Standard & Poor s 500 Information Technology Composite Stock Price Index.

**Total Return to Shareholders**

**(Dividends reinvested monthly)**

Note: Assumes $100 invested at the close of trading on the last trading day preceding the first day of the fifth preceding fiscal year (and reinvestment of dividends) in the Company s common stock, Standard & Poor s 500 Composite Stock Price Index and the Standard & Poor s 500 Information Technology Composite Stock Price Index.

**ITEM 6. SELECTED FINANCIAL DATA**

The following selected financial data is qualified by reference to, and should be read in conjunction with, the consolidated financial statements, including the notes thereto, and Management s Discussion and Analysis of Financial Condition and Results of Operations included elsewhere in this Annual Report.

| (Dollars in thousands, except per share amounts) | Fiscal Year 2008 | 2007 | 2006 | 2005 | 2004 |
|---|---|---|---|---|---|
| Net sales and contract revenues | $ 166,733 | $ 153,186 | $ 163,604 | $ 88,314 | $ 76,342 |
| Net income | 17,478 | 24,610 | 29,786 | 11,185(1) | 1,911 |
| Income per share diluted | 1.87 | 2.38 | 3.27 | 1.31 | 0.26 |
| Total assets | 235,534 | 221,725 | 173,389 | 98,287 | 55,803 |
| Stockholders equity | 166,072 | 167,698 | 130,198 | 61,570 | 38,433 |
| Dividends per common share | $ 0.60 | $ | $ | $ | $ |

(1) Includes a gain of $5,442,000 on the sale of certain assets of the Company s High Energy Systems division.

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

The following discussion should be read in conjunction with our consolidated financial statements and notes thereto which appear elsewhere in this Annual Report on Form 10-K. The following discussion contains forward-looking statements and should also be read in conjunction with the Cautionary Statement included at the beginning of this Annual Report on Form 10-K.

**2008 Compared to 2007**

***Overview*** American Science and Engineering, Inc. develops and manufactures state-of-the-art X-ray inspection systems for homeland security and other critical defense applications. The Company s primary technologies are: (1) Z Backscatter technology which is used to detect plastic explosives, illegal drugs, and other contraband even when artfully concealed in complex backgrounds; and (2) Shaped Energy X-ray inspection systems which combine the material discrimination features of Z Backscatter with the penetration capability of high-energy X-rays for dense cargos.

Net sales and contract revenues for fiscal 2008 increased by 9% to $166,733,000 compared to fiscal 2007 revenues of $153,186,000. The Company reported net income before taxes of $27,485,000 in fiscal 2008 compared to a net income before taxes of $40,016,000 in the previous fiscal year. Net income for fiscal 2008 was $17,478,000 ($1.87 per share, on a diluted basis) as compared to a net income of $24,610,000 ($2.38

per share, on a diluted basis) in fiscal 2007. Backlog at March 31, 2008 was $99,606,000, a 6% decrease from the record-high year-end backlog of $105,634,000 reported at March 31, 2007. This decrease in backlog is attributable primarily to revenues being earned on a significant CargoSearch order which was in backlog at March 31, 2007.

***Results of Operations*** Total net sales and contract revenues of $166,733,000 in fiscal 2008 increased by $13,547,000 or 9% from the previous year. Revenues related to product sales and contracts increased by $2,025,000 or 2% due to the following factors. CargoSearch system revenues increased by $16,346,000 due to higher order volume on products introduced in the past two years. ParcelSearch system revenues increased by $7,446,000 due primarily to one large multi-unit order received during the year. Contract research and development revenues also increased $5,805,000 from the prior year attributable primarily to one large contract which comprised 82% of overall contract research and development revenues. These revenue increases were offset by a decrease in Z Backscatter System sales of $27,353,000 from the prior year attributable to a decrease in the number of units sold. In each of the previous two years, Z Backscatter System contributed over 65% of overall product revenues. The current year showed a shift in the product mix with a greater percentage of revenues being received by the Company s other product offerings. Service revenues increased in fiscal 2008 by $11,522,000 or 22% to $63,568,000 due primarily to certain new large service contracts received during fiscal 2008 for products sold in fiscal 2007 whose warranties expired during fiscal 2008.

In fiscal 2008, 64% of the Company s revenues were from domestic (based upon customer s country of domicile) customers as compared to 73% in fiscal 2007. In fiscal 2008, the Company had sales to two customers which accounted for 22% of total sales. In fiscal 2007, the Company had sales to two major customers which accounted for 46% of total sales.

Cost of sales and contracts of $106,983,000 in fiscal 2008 increased by $20,336,000 or 23% from the previous year. Cost of product sales and contracts of $70,413,000 increased by $10,380,000 or 17% as compared to the prior year. Cost of product sales and contracts totaled 68% of revenues in fiscal 2008 as compared to 59% of revenues in fiscal 2007. This increase in costs as a percentage of revenue is due primarily to a decrease in the volume of shipments of higher margin Z Backscatter systems, and increase in revenue attributable to lower margin contract research and development and CargoSearch projects. The cost of service revenues increased $9,956,000 or 37% from the prior year. Cost of service revenues totaled 58% of revenues in fiscal 2008 as compared to 51% of revenues in fiscal 2007. This increase in costs as a percentage of revenue is due primarily to increased material required to support outstanding service contracts and increased overhead costs to support the increased international install base.

Selling, general and administrative expenses in fiscal 2008 decreased by $915,000 to $26,221,000 as compared to fiscal 2007 and represented 16% of revenues in fiscal 2008 as compared to 18% of revenues in fiscal 2007. This decrease in spending can be attributed to decreases in incentive compensation costs ($3,567,000) related to the reduced bonuses and commissions earned during the period, decreases in stock compensation expense ($1,199,000), and decreases in marketing related costs ($560,000), offset by increased salaries and payroll related costs ($1,450,000) as the Company increased its sales and marketing capabilities, the write-down of a note receivable from an unrelated third party ($1,608,000), increased travel related expenditures ($503,000) and increased depreciation related to the building and ERP system and other IT costs associated with the ERP system placed in service during the year ($336,000).

Company-funded research and development spending increased by $5,122,000 to $12,306,000 in fiscal 2008, a 71% increase compared to the $7,184,000 spent in fiscal 2007. Research and development spending represented 7% of revenues in fiscal 2008 as compared to 5% of revenues in fiscal 2007. Fiscal 2008 costs increased as the Company hired during fiscal 2008 additional engineering resources to focus on the Company strategic development efforts. The Company s fiscal 2008 research and development activities focused on design modifications to its existing products and the development of product alternatives to continue to bring innovative products to its customers.

Other income (expense) was $6,262,000 in income in fiscal 2008 as compared to $7,797,000 in income in fiscal 2007. Interest income increased by $1,221,000 due to increased funds available for investment in higher return investment vehicles. During fiscal 2008, the Company recorded $11,000 in income related to the fair value mark to market charge associated with outstanding warrants. During fiscal 2007, this mark to market adjustment resulted in $2,270,000 in income. All remaining outstanding warrants were exercised during the first quarter of fiscal 2008 and no future mark to market adjustments will be effected.

The Company reported pre-tax income of $27,485,000 in fiscal 2008 as compared to a pre-tax income of $40,016,000 in the previous fiscal year primarily due to the items noted above. The Company recorded income tax expense of $10,007,000 in fiscal 2008 as compared to $15,406,000 in the prior fiscal year. The Company s effective tax rate excluding the impact of the warrant income was 36% in fiscal 2008 as compared to 41% in fiscal 2007. This decrease in rate can be attributed to a reduction in state income taxes due to increased international revenues during the year, a decrease in non-deductible stock compensation expense, and the increase in manufacturing and research and development credits available in the current year.

The Company reported net income of $17,478,000 in fiscal 2008 as compared to net income of $24,610,000 in fiscal 2007.

**2007 Compared to 2006**

***Results of Operations*** Total net sales and contract revenues of $153,186,000 in fiscal 2007 decreased by $10,418,000 or 6% from the previous year. Revenues related to product sales and contracts decreased by $26,936,000 or 21% due to the following: Z Backscatter System sales decreased $17,262,000 from the prior year as the multi-unit orders received from the US Government in the prior year were not repeated in the current year. Aftermarket part sales decreased $6,799,000 from the prior year and returned to more standard revenue levels. The Company had received one large order in fiscal 2006 which had contributed to its high parts revenues in the prior year. Parcel system revenues also decreased by $5,138,000 from the prior year attributable primarily to a decrease in order volume in the year. These product revenue decreases were offset by a $3,806,000 increase in contract research and development revenues as compared to the prior period attributable primarily to one large contract research and development contract received in the current year. Service revenues increased in fiscal 2007 by $16,518,000 or 46% to $52,046,000 due primarily to service contract revenues purchased for the shipments of systems in 2006 and 2007.

In fiscal 2007, 73% of the Company s revenues were from domestic customers as compared to 86% in fiscal 2006. In fiscal 2007, the Company had sales to two customers which accounted for 46% of total sales. In fiscal 2006, the Company had sales to two major customers which accounted for 56% of total sales.

Cost of sales and contracts of $86,647,000 in fiscal 2007 increased by $1,241,000 or 1% from the previous year. Cost of product sales and contracts of $60,033,000 decreased by $5,341,000 or 8% as compared to the prior year. Cost of product sales and

contracts totaled 59% of revenues in fiscal 2007 as compared to 51% of revenues in fiscal 2006. This decrease in gross margin is due primarily to $3,559,000 of stock-based compensation and a decrease in the volume of shipments of higher margin Z Backscatter systems. The cost of service revenues increased $6,582,000 or 33% from the prior year. Cost of service revenues totaled 51% of revenues in fiscal 2007 as compared to 56% of revenues in fiscal 2006. This margin improvement is due primarily to improved system performance of systems under service contracts as compared to the prior year.

Selling, general and administrative expenses in fiscal 2007 increased by $7,494,000 to $27,136,000 compared to fiscal 2006 and represented 18% of revenues in fiscal 2007 as compared to 12% of revenues in fiscal 2006. This increase in spending can be attributed to $5,035,000 of stock-based compensation expense, increases in incentive compensation costs ($473,000) related to the bonuses and commissions earned during the period, increased salaries and payroll related costs ($497,000) as the Company increased its sales and marketing capabilities, increased marketing costs ($687,000), increases in expenses related to the Company s ongoing ERP system implementation project ($248,000), and increased legal expenditures ($534,000) related to legal costs incurred related to an abandoned acquisition and other corporate initiatives.

Company funded research and development spending decreased by $2,417,000 to $7,184,000 in fiscal 2007, a 25% change compared to the $9,601,000 spent in fiscal 2006. Research and development spending represented 5% of revenues in fiscal 2007 as compared to 6% of revenues in fiscal 2006. Fiscal 2007 costs decreased as the engineering team focused on revenue related contracts including contract research and development engagements. The Company s fiscal 2007 research and development activities focused on design modifications to its existing products and the development of product alternatives to continue to bring innovative products to its customers.

Other income (expense) was $7,797,000 in income in fiscal 2007 as compared to $3,522,000 in expense in fiscal 2006. Interest income increased by $3,108,000 due to increased funds available for investment in higher return investment vehicles. In addition, the Company recorded $2,270,000 in income related to the fair value mark to market charge associated with outstanding warrants issued as part of a private placement of common stock in May of 2002. During fiscal 2006, this mark to market adjustment resulted in $6,094,000 in expense.

The Company reported pre-tax income of $40,016,000 in fiscal 2007 as compared to a pre-tax income of $45,769,000 in the previous fiscal year primarily due to the decreased revenues and expense increases noted above. The Company recorded income tax expense of $15,406,000 in fiscal 2007 as compared to $15,983,000 in the prior fiscal year. The Company s effective tax rate excluding the impact of the warrant (income) expense was 41% in fiscal 2007 as compared to 31% in fiscal 2006. This increase in the rate can be attributed to the utilization of remaining net operating loss carry-forwards in fiscal 2006, the implementation of FAS 123(R) in fiscal 2007, and the reduction of certain tax credits in fiscal 2007.

The Company reported net income of $24,610,000 in fiscal 2007 as compared to net income of $29,786,000 in fiscal 2006.

**Liquidity and Capital Resources**

Cash and cash equivalents at year-end decreased by $17,232,000 to $52,418,000 at March 31, 2008 as compared to $69,650,000 at March 31, 2007. Cash flow provided by operations of $17,339,000 resulted from the following:

• Reported net income of $17,478,000 adjusted for the following non-cash items:

• Depreciation and amortization of $4,123,000 which was $1,698,000 higher than the previous year due primarily to the depreciation of the Company s building facilities and the depreciation of the ERP system which was placed in service in fiscal 2008.

• Stock compensation expense of $5,314,000

• The write-down of a note receivable from an unrelated third party of $1,608,000.

• The amortization of bond discounts of $2,278,000.

• An increase in deferred taxes related to the increased deferred revenue balances and stock compensation expense.

• The increase in deferred revenue of $18,326,000 due to certain large service contracts which were billed at the outset of the contract period. 86% of the deferred revenue balance at March 31, 2008 is expected to be earned in fiscal 2009.

• The increase in accounts payable of $4,543,000 due to increased purchases in the fourth quarter of fiscal 2008.

These cash contributors were offset by the following:

• An increase in inventories of $20,328,000 during the year. This increase is due to the building of certain systems in advance of orders in order to meet anticipated order delivery deadlines, the introduction in the current year of the ZPortal systems which are higher cost systems recognized upon installation and/or acceptance as appropriate, the stocking of

international inventory depots to support service contract requirements, and $4.4 million in inventory for two orders shipped but not yet accepted as of March 31, 2008.

• An increase in accounts receivable of $4,236,000 from the prior year due primarily to the timing of certain milestone billings and prepayments in the prior year.

• The decrease in customer deposits of $5,007,000 as revenues were earned on certain milestones payments received in the prior year.

Net cash of $8,124,000 was used for investing activities in fiscal 2008. Fiscal 2008 capital expenditures totaled $3,270,000 versus $4,733,000 for fiscal 2007. Investments in fixed assets were comprised primarily of information technology expenditures, leasehold improvements related to the Company s facilities expansion, and demo equipment. The Company invested $163,971,000 in short-term investments during the year, and had maturities of $159,725,000 on short-term investments. In addition, the Company paid $608,000 in exchange for a note receivable from an unrelated company which was subsequently written off in the third quarter of fiscal 2008.

At March 31, 2008, short-term investments and cash equivalents were invested primarily in commercial paper, money market funds, corporate debentures and certificates of deposit. The Company does not invest in auction rate securities. Although management believes our investment policy is conservative in nature, certain short-term investments in commercial paper can be exposed the credit risk of the underlying companies to which they relate and interest earned on these investments is subject to interest rate fluctuations. The maturities within our investment portfolio generally range from 30 to 365 days.

Net cash used for financing activities was $26,436,000 in fiscal 2008. Cash was used primarily for the payment of $25,168,000 to repurchase 473,303 shares as part of the stock repurchase program announced in the first quarter of fiscal 2008. In addition, the Company issued three quarterly dividend payments totaling $5,516,000 during the year. Cash provided by financing activities consisted primarily of the receipt of $3,029,000 in proceeds from the exercise of employee stock options.

On November 16, 2006, the Company modified its domestic loan and security agreement with Silicon Valley Bank East which was scheduled to expire on November 29, 2006. The Company increased its domestic facility from $5.0 million to $20.0 million to support the Company s routine working capital needs. The Company s $10.0 million export loan and security facility, guaranteed by the Export-Import Bank of the United States, expired as of November 29, 2006. The maximum amount available for borrowings under the domestic facility is (a) if the Company s unrestricted cash is greater than or equal to $30.0 million, is $20.0 million minus the amount of all outstanding letters of credit less certain reserves, and minus the outstanding principal balance of any advances or (b) if the Company s unrestricted cash is less than $30.0 million for a period of 30 consecutive days, the lesser of (i) the $20.0 million, or ii) 85% of eligible domestic accounts receivable minus the amount of outstanding letters of credits adjusted for certain reserves and minus the principal balance of any advances. The modification of the domestic loan and security agreement extended this credit facility through November 14, 2008.

The credit facility bears an interest rate of the greater of 4.0% or the Silicon Valley Bank prime rate (5.25% at March 31, 2008). The credit agreement is collateralized by certain assets of the Company and contains certain restrictions, including limitations on the amount of distributions that can be made to stockholders, and the disposition or encumbrances of assets, and requires the maintenance of certain financial covenants. As of March 31, 2008, the Company was in compliance with these covenants.

At March 31, 2008, there were no borrowings outstanding against this credit facility. Under the terms of the credit agreement, the Company was required to pay certain one-time facility fees which are being amortized over the life of the facility and is required to pay a fee of 0.50% quarterly on unused amounts under the line of credits. Total expenses incurred related to these fees were $157,000, $201,000, and $172,000, in fiscal 2008, 2007, and 2006, respectively.

In the normal course of business, the Company may provide certain customers and potential customers with performance guarantees, which are generally backed by standby letters of credit. In general, the Company would only be liable for the amount of these guarantees in the event of default in the performance of our obligations, the probability of which is remote in management s opinion. As of March 31, 2008 the Company had outstanding $6,091,000 in stand-by letters of credit against the domestic facility with $13,909,000 remaining availability. Of the outstanding letters of credit, $300,000 relates to the Company s building lease and the remainder is guaranteeing performance on certain international projects. No amounts have been drawn against these letters of credit. In addition at March 31, 2008, the Company had a restricted cash balance of $2,523,000 related to certain bank required deposits for outstanding letters of credits, bid bonds, and other bank-related fees.

In recent years, the Company has funded its operations and capital expenditures with cash generated by operations, including deposits from customers on long-term projects and from proceeds received from stock issuances and option exercises. The

Company currently has no amounts drawn on its line of credit and believes that its cash flows from operations, cash and investments on hand and available lines of credit are sufficient to meet the current and foreseeable operating requirements of the Company s business.

***Contractual Obligations*** The Company leases various office equipment and facilities under non-cancelable leases. In addition, in the normal course of business, the Company enters into purchase orders with its vendors for the purchase of materials or services to meet its production needs. The following table summarizes the Company s contractual obligations as of March 31, 2008.

| (In thousands) | Total | Less than 1 year | 1-3 years | 3-5 years | After 5 years |
|---|---|---|---|---|---|
| **Recorded Contractual Obligations:** | | | | | |
| Lease financing liability | $ 10,674 | $ 1,134 | $ 2,465 | $ 2,672 | $ 4,403 |
| Other long-term obligations | 61 | 17 | 35 | 9 | |
| | | | | | |
| **Unrecorded Contractual Obligations:** | | | | | |
| Operating Leases | 1,475 | 194 | 370 | 370 | 541 |
| Purchase Commitments | 29,965 | 29,937 | 22 | 6 | |
| | | | | | |
| Total | $ 42,175 | $ 31,282 | $ 2,892 | $ 3,057 | $ 4,944 |

***Inflation*** The Company does not believe that inflation has had a material effect on its results of operations. There can be no assurance, however, that the Company s business will not be affected by inflation in the future.

**Critical Accounting Policies**

The Company considers certain accounting policies related to revenue recognition, inventories, allowances for obsolete and excess inventory, stock-based compensation, and income taxes to be critical policies due to the estimation processes involved in each.

***Revenue Recognition:*** The Company recognizes certain CargoSearch and Z Backscatter system sales and other product revenue, primarily ParcelSearch systems and after-market parts, in accordance with SEC Staff Accounting Bulletin ( SAB )No. 101, Revenue Recognition in Financial Statements modified by SAB No. 104 which requires that four basic criteria must be met before revenue can be recognized: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services rendered; (3) the fee is fixed and determinable; and (4) collectibility is reasonably assured.

Certain of the Company s contracts are multiple-element arrangements, which include standard products, custom-built systems or contract engineering projects, services, such as training and service contracts. In accordance with Emerging Issues Task Force Issue No. 00-21, Revenue Arrangements with Multiple Deliverables, ( EITF 00-21 ) revenue arrangements that include multiple elements are analyzed to determine whether the deliverables can be divided into separate units of accounting or treated as a single unit of accounting. The consideration the Company receives is allocated among the separate units of accounting based on their relative fair values determined based on prices of these elements as sold on a stand-alone basis, and the applicable revenue recognition criteria are applied to each of the separate units. There is no customer right of return in the Company s sales agreements. Revenues are allocated to a delivered product or service when all of the following criteria are met: (1) the delivered item has value to the customer on a standalone basis; (2) there is objective and reliable evidence of the fair value of the undelivered item; and (3) if the arrangement includes a general right of return relative to the delivered item, delivery or performance of the undelivered item is considered probable and substantially in our control.

Revenues for certain long-term, custom-built systems or contract engineering projects are recognized on a percentage of completion basis. The lengths of these contracts typically range from 9 to 24 months from order to delivery and acceptance. Percentages-of-completion are determined by relating the actual costs of work performed to date for each contract to its estimated final costs. Revisions in costs and profit estimates are reflected in the period in which the facts causing the revision become known.

Training and service contracts deliverables are accounted for separately from the delivered product elements as the Company s undelivered products have value to its customers on a stand-alone basis and the Company has objective and reliable evidence of the fair value of such services. Accordingly, service revenue representing the fair value of services not yet performed at the time of product shipment is deferred and recognized as such services are performed.

Certain contracts require payments from the customer upon execution of the agreement that are included in customer deposits. Individual customer deposits are reduced by the amount of revenue recognized on the contract until a zero balance is reached. For all fixed price and long-term contracts, if a loss is anticipated on the contract, a provision is made in the period in which such losses are determined.

Under the terms of certain of its cost reimbursement contracts, the Company is not permitted to bill customers a specified portion of the contract value until completion. Such retainages result from both commercial contract retentions and government contract withholdings generally for up to 15% of fees, as well as the difference between the actual and provisional indirect cost billing rates. Retainages are included in the accompanying consolidated balance sheets as components of unbilled costs and fees. The accuracy and appropriateness of the Company s direct and indirect costs and expenses under these cost reimbursement contracts and its accounts receivable recorded pursuant to such contracts, are subject to regulation and audit, including by the U.S. Defense Contract Audit Agency ( DCAA ) or by other appropriate agencies of the U.S. Government. Such agencies have the right to challenge the Company s cost estimates or allocations with respect to any government contract. Additionally, a portion of the payments to the Company under government contracts are provisional payments that are subject to potential adjustment upon audit by such agencies. Historically, such audits have not resulted in any significant disallowed costs. Although the Company can give no assurances, in the opinion of management, any adjustments likely to result from inquiries or audits of its contracts will not have a material adverse impact on the Company s financial condition or results of operations.

The Company recognizes sales for its systems that are produced in a standard manufacturing operation, have minimal customer site installation requirements and have shorter order to delivery cycles when title passes and when other revenue recognition criteria are met. Management believes the customer s post-delivery acceptance provisions and installation requirements on these systems are perfunctory and inconsequential and the costs of installation at the customer s site are accrued at the time of revenue recognition. The Company has demonstrated a history of customer acceptance subsequent to shipment and installation of these systems. For systems which entail more significant installation efforts and site work and/or have non-standard customer acceptance provisions, revenue recognition is deferred until installation is complete and customer acceptance has occurred.

Service revenues are recognized on time and materials engagements as the services are provided. Service contract revenues are recognized on a straight-line basis over the length of the contract which reasonably approximates the period service revenues are earned.

The Company records billed shipping and handling fees and billed out-of-pocket expenses as revenue and the associated costs as cost of goods sold in the accompanying consolidated statements of operations.

***Inventories and Related Allowance for Obsolete and Excess Inventory:*** Inventories consist of material, labor and manufacturing overhead and are recorded at the lower of cost or net realizable value. Excessive manufacturing overhead costs such as idle facility expense, freight, handling costs and wasted material (spoilage) attributable to abnormally low volumes (levels that materially differ from budgeted production plans due primarily to changes in customer demand) are excluded from inventory and recorded as an expense in the period incurred. The Company regularly reviews inventory quantities on hand and records a provision for excess and obsolete inventory based primarily on the estimated forecast of product demand over the next twelve to eighteen months. Demand for products can fluctuate significantly. A significant increase in the demand for the Company s products could result in a short-term increase in inventory balances, while a significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. Additionally, inventory reserves require estimates of future product demand, which may materially impact the provision required for excess and obsolete inventory. In the future, if inventory were determined to be overvalued, the Company would be required to recognize such costs in its cost of goods sold at the time of such determination. Likewise, if inventory is determined to be undervalued, the Company may have over-reported costs of goods sold in previous periods and would be required to recognize such additional operating income at the time of sale. Therefore, although the Company makes every effort to ensure the accuracy of forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of its inventory and reported operating results.

***Stock-Based Compensation:*** On April 1, 2006, the Company adopted Statement of Financial Accounting Standards No. 123(R) (SFAS 123(R)) Accounting for Stock-Based Compensation , which requires the measurement and recognition of all compensation costs for all stock based awards made to employees and the Board of Directors based upon fair value over the requisite service period for awards expected to vest. Prior to adoption, the Company accounted for stock options under the intrinsic value method set in accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees, and related interpretations, and provided the required pro forma disclosures prescribed by SFAS No. 123, Accounting for Share-based Compensation , as amended.

SFAS 123(R) requires the Company to estimate the fair value of share-based awards on the date of grant using an option pricing model. The Company adopted SFAS 123(R) using the modified prospective transition method which required the application of the accounting standard starting April 1, 2006, the first day of the Company s fiscal year 2007. Prior period information was not restated to reflect the fair value method of expensing share-based awards.

***Income Taxes:*** The Company accounts for income taxes in accordance with SFAS No. 109, Accounting for Income Taxes. Accordingly, the Company recognizes deferred income taxes based on the expected future tax consequences of differences

between the financial statement basis and the tax basis of assets and liabilities, calculated using enacted tax rates in effect for the year in which the differences are expected to be reflected in the tax return. The Company evaluates the need for a valuation allowance against its net deferred tax assets at year end based upon its three year cumulative income and its projections of future income, and records a valuation allowance against any net deferred tax assets if it is more likely than not that they will not be realized.

**New Accounting Pronouncements**

In September 2006, the FASB issued SFAS No. 157, Fair Value Measurements ( SFAS 157 ). SFAS 157 establishes a common definition for fair value to be applied, establishes a framework for measuring fair value in accordance with generally accepted accounting principles, and expands disclosure about such fair value measurements. In February 2007, the FASB issued SFAS No. 159, The Fair Value Option for Financial Assets and Financial Liabilities-including an amendment of FASB Statement No. 115 ( SFAS 159 ). SFAS 159 allows an entity the irrevocable option to elect fair value for the initial and subsequent measurement of certain financial assets and liabilities under an instrument-by-instrument election. SFAS 157 and SFAS 159 are both effective for fiscal years beginning after November 15, 2007. Management does not expect the adoption of SFAS 157 or SFAS 159 to have a material impact on the Company s financial position, results of operations and cash flows.

In December 2007, the FASB issued SFAS No. 141R, Business Combinations ( SFAS 141R ). SFAS 141R replaces SFAS 141 and establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in the acquiree and the goodwill acquired. This standard is effective for fiscal years beginning after December 15, 2008.

In December 2007, the FASB issued SFAS No. 160, Noncontrolling Interests in Consolidated Financial Statements ( SFAS 160 ). SFAS 160 establishes accounting and reporting standards for ownership interests in subsidiaries held by parties other than the parent, the amount of consolidated net income attributable to the parent and to the noncontrolling interest, changes in a parent s ownership interest and the valuation of retained noncontrolling equity investments when a subsidiary is deconsolidated. This standard is effective for fiscal years beginning after December 15, 2008.

**ITEM 7A. QUANTITIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

The Company is subject to interest rate risk on its credit facilities which have variable interest rates tied to the Prime Rate. As of March 31, 2008, the Company had no variable interest rate debt outstanding. See Note 3 of Notes to Consolidated Financial Statements for a discussion of our long-term indebtedness.

The cash accounts for the Company s operations in Hong Kong, England, and Abu Dhabi are maintained in Hong Kong dollars, pounds sterling and dirhams, respectively. Foreign currency accounts are marked to market at current rates that resulted in immaterial translation adjustments to stockholders equity. The gains and losses from foreign currency transactions are included in the statement of operations for the period and were also immaterial. A hypothetical 10% change in foreign currency rates would not have a material impact on the Company s results of operations or financial position.

As of March 31, 2008, the Company holds short-term investments and cash equivalents consisting of commercial paper, money market funds, corporate debentures/bonds and certificates of deposit. The Company s primary objective with its investment portfolio is to invest available cash while preserving principal and meeting liquidity needs. These investments have an average interest rate of approximately 3.4% and are subject to interest rate risk. As a result of the average maturity and conservative nature of the investment portfolio, a sudden change in interest rates would not have a material adverse effect on the value of these investments. To minimize this risk, we maintain a significant portion of our cash balances in money market funds. In general, money market funds are not subject to interest rate risk because the interest paid on such funds fluctuates with the prevailing interest rate.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The financial statements and supplementary financial information listed in the Index to Consolidated Financial Statements on page 25 are filed as part of this Annual Report on Form 10-K and are incorporated into this item by reference.

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

None.

**ITEM 9A. CONTROLS AND PROCEDURES**

**Evaluation of Disclosure Controls and Procedures**

As of the end of the period covered by this report, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, the Company reviewed and evaluated the effectiveness of the Company s disclosure controls and procedures pursuant to Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 as amended (the Exchange Act ). Based upon their evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2008 to ensure that information required to be disclosed by the Company in the reports filed and submitted by it under the Exchange Act is recorded, processed, summarized and reported within the time period specified in the Securities and Exchange Commission s rules and forms, and to provide reasonable assurance that information required to be disclosed by the Company in such reports is accumulated and communicated to the Company s management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

**Management s Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management conducted an evaluation of the effectiveness of our internal control over financial reporting using the framework in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation under the criteria established in Internal Control Integrated Framework , our management concluded that the Company s internal control over financial reporting was effective as of March 31, 2008. Vitale, Caturano & Company, Ltd., our independent registered public accounting firm, has audited the effectiveness of our internal control over financial reporting as of March 31, 2008, and has issued their report thereon which is included herein.

**Changes in Internal Controls over Financial Reporting**

There have been no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act, during the quarter ended March 31, 2008 that have materially affected, or are reasonably likely to materially affect, the Company s internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION**

None.

**PART III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

**Code of Conduct**

The Company has adopted a Code of Conduct that applies to our Board of Directors, Chief Executive Officer, Chief Financial Officer, and all employees of the Company. The Company s Code of Conduct is posted on our website at www.as-e.com and may be accessed in the Corporate Governance section of the Investor Information page. The Company intends to satisfy the disclosure requirement under Item 10 of Form 8-K, regarding an amendment to, or waiver from, our Code of Conduct, by posting such information on our website at the location specified above.

The other information called for by this item is hereby incorporated by reference from the Registrant s Definitive Proxy Statement relating to the 2008 Annual Meeting of Stockholders, which Proxy Statement will be filed with the Securities and Exchange Commission on or about July 29, 2008.

**ITEM 11. EXECUTIVE COMPENSATION**

The information called for by this item is hereby incorporated by reference from the Registrant s Definitive Proxy Statement relating to the 2008 Annual Meeting of Stockholders, which Proxy Statement will be filed with the Securities and Exchange Commission on or about July 29, 2008.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information called for by this item is hereby incorporated by reference from the Registrant s Definitive Proxy Statement relating to the 2008 Annual Meeting of Stockholders, which Proxy Statement will be filed with the Securities and Exchange Commission on or about July 29, 2008.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information called for by this item is hereby incorporated by reference from the Registrant s Definitive Proxy Statement relating to the 2008 Annual Meeting of Stockholders, which Proxy Statement will be filed with the Securities and Exchange Commission on or about July 29, 2008.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information called for by this item is hereby incorporated by reference from the Registrant s Definitive Proxy Statement relating to the 2008 Annual Meeting of Stockholders, which Proxy Statement will be filed with the Securities and Exchange Commission on or about July 29, 2008.

**PART IV**

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

The financial statements listed in the Index to Consolidated Financial Statements on page 26 are filed as part of this report, and such Index is incorporated in this item by reference.

The exhibits listed in the Exhibit Index on page 49 are filed as part of this report, and such Index is incorporated in this item by reference.

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

(Submitted in answer to Item 8, Item 9A and Item 15 of Form 10-K, Securities and Exchange Commission)


| | PAGE |
|---|---|
| **CONSOLIDATED FINANCIAL STATEMENTS** | |
| Report of Independent Registered Public Accounting Firm | 27 |
| Consolidated Balance Sheets March 31, 2008 and 2007 | 28 |
| Consolidated Statements of Operations for the Years Ended March 31, 2008, 2007, and 2006 | 29 |
| Consolidated Statements of Stockholders Equity and Comprehensive Income for the Years Ended March 31, 2008, 2007, and 2006 | 30 |
| Consolidated Statements of Cash Flows for the Years Ended March 31, 2008, 2007, and 2006 | 31 |
| Notes to Consolidated Financial Statements | 32 |
| **CONSOLIDATED SUPPLEMENTARY FINANCIAL INFORMATION** | |
| Unaudited Quarterly Consolidated Financial Data for the Years Ended March 31, 2008 and 2007 | 47 |


Financial statement schedules have been omitted because of the absence of conditions under which they are required or because the required information is given in the financial statements or notes thereto.

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Stockholders

of American Science and Engineering, Inc.

We have audited the accompanying consolidated balance sheets of American Science and Engineering, Inc. and subsidiary ( the Company ) as of March 31, 2008 and 2007 and the related consolidated statements of operations, stockholders equity and comprehensive income, and cash flows for each of the years ended March 31, 2008, 2007 and 2006. We also have audited American Science and Engineering, Inc. and subsidiary s internal control over financial reporting as of March 31, 2008, based on criteria established in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company s internal control over financial reporting based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audit of the financial statements included 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of American Science and Engineering, Inc. and subsidiary as of March 31, 2008 and 2007 and the results of their operations and their cash flows for each of the three years in the period ended March 31, 2008 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, American Science and Engineering, Inc. maintained, in all material respects, effective internal control over financial reporting as of March 31, 2008 based on criteria established in *Internal Control Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

As discussed in Note 1 to the consolidated financial statements, the Company adopted SFAS No. 123(R), Share-Based Payment, effective April 1, 2006.

/s/ Vitale, Caturano & Company, Ltd.

VITALE, CATURANO & COMPANY, LTD.

June 11, 2008
Boston, Massachusetts

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**CONSOLIDATED BALANCE SHEETS**

**MARCH 31, 2008 AND 2007**

(Amounts in thousands, except share and per share amounts)

| | 2008 | 2007 |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 52,418 | $ 69,650 |
| Restricted cash and investments | 319 | 202 |
| Short-term investments | 72,687 | 66,086 |
| Accounts receivable, net of allowances of $230 in 2008 and $224 in 2007 | 27,583 | 23,366 |
| Unbilled costs and fees | 6,114 | 5,841 |
| Inventories | 40,107 | 20,140 |
| Prepaid expenses and other current assets | 4,815 | 6,730 |
| Deferred income taxes | 1,577 | 3,087 |
| **Total current assets** | 205,620 | 195,102 |
| Building, equipment and leasehold improvements, net | 22,201 | 23,054 |
| Restricted cash and investments | 2,204 | 2,599 |
| Deferred income taxes | 5,231 | 970 |
| Other assets | 278 | |
| **Total assets** | $ 235,534 | $ 221,725 |
| **Liabilities and Stockholders Equity** | | |
| Current liabilities: | | |
| Accounts payable | $ 12,660 | $ 8,117 |
| Accrued salaries and benefits | 2,935 | 7,241 |
| Accrued warranty costs | 1,671 | 1,997 |
| Deferred revenue | 23,120 | 4,321 |
| Customer deposits | 6,547 | 11,554 |
| Current portion of lease financing liability | 1,134 | 1,263 |
| Warrant liability | | 634 |
| Other current liabilities | 8,097 | 4,290 |
| **Total current liabilities** | 56,164 | 39,417 |
| Lease financing liability, net of current portion | 9,540 | 10,379 |
| Other long term liabilities | 3,758 | 4,231 |
| **Total liabilities** | 69,462 | 54,027 |
| Commitments and contingencies (Notes 2 and 8) | | |
| Stockholders equity: | | |
| Preferred stock, no par value | | |
| Authorized 100,000 shares | | |
| Issued None | | |
| Common stock, $0.662/3 par value | | |
| Authorized 20,000,000 shares | | |
| Issued and outstanding 8,945,633 shares in 2008 and 9,186,975 shares in 2007 | 5,963 | 6,125 |
| Capital in excess of par value | 91,544 | 105,036 |
| Accumulated other comprehensive income | 114 | 48 |
| Retained earnings | 68,451 | 56,489 |

| | | | | |
|---|---|---|---|---|
| **Total stockholders equity** | | 166,072 | | 167,698 |
| **Total liabilities and stockholders equity** | $ | 235,534 | $ | 221,725 |

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

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**CONSOLIDATED STATEMENTS OF OPERATIONS**

**FOR THE YEARS ENDED MARCH 31, 2008, 2007, AND 2006**

(Amounts in thousands except per share amounts)

| | | 2008 | 2007 | 2006 |
|---|---|---|---|---|
| **Net sales and contract revenues:** | | | | |
| Net product sales and contract revenues | | $ 103,165 | $ 101,140 | $ 128,076 |
| Net service revenues | | 63,568 | 52,046 | 35,528 |
| **Total net sales and contract revenues** | | 166,733 | 153,186 | 163,604 |
| | | | | |
| **Cost of sales and contracts:** | | | | |
| Cost of product sales and contracts | | 70,413 | 60,033 | 65,374 |
| Cost of service revenues | | 36,570 | 26,614 | 20,032 |
| **Total cost of sales and contracts** | | 106,983 | 86,647 | 85,406 |
| | | | | |
| **Gross profit** | | 59,750 | 66,539 | 78,198 |
| | | | | |
| Selling, general and administrative expenses | | 26,221 | 27,136 | 19,642 |
| Research and development costs | | 12,306 | 7,184 | 9,601 |
| Gain on sale of assets | | | | (336) |
| | | | | |
| **Operating expenses** | | 38,527 | 34,320 | 28,907 |
| | | | | |
| **Operating income** | | 21,223 | 32,219 | 49,291 |
| | | | | |
| **Other income (expense):** | | | | |
| Interest and investment income | | 6,842 | 5,621 | 2,513 |
| Interest expense | | (158) | (353) | (24) |
| Other, net | | (433) | 259 | 83 |
| Change in warrant valuation | | 11 | 2,270 | (6,094) |
| **Total other income (expense)** | | 6,262 | 7,797 | (3,522) |
| | | | | |
| **Income before provision for income taxes** | | 27,485 | 40,016 | 45,769 |
| **Provision for income taxes** | | 10,007 | 15,406 | 15,983 |
| **Net income** | | $ 17,478 | $ 24,610 | $ 29,786 |
| | | | | |
| **Income per share** | **Basic** | $ 1.92 | $ 2.70 | $ 3.48 |
| | **Diluted** | $ 1.87 | $ 2.38 | $ 3.27 |
| **Weighted average shares** | **Basic** | 9,114 | 9,117 | 8,555 |
| | **Diluted** | 9,347 | 9,368 | 9,113 |
| **Dividends declared per share** | | $ 0.60 | | |

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

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY AND COMPREHENSIVE INCOME**

**FOR THE YEARS ENDED MARCH 31, 2008, 2007, AND 2006**

(Amounts in thousands, except share amounts)

| | Common Stock | | Capital in Excess of Par Value | Retained Earnings (Accumulated Deficit) | Accumulated Other Comp. Income | Unearned Compensation | Total | Comprehensive Income |
|---|---|---|---|---|---|---|---|---|
| | Shares | Par Value | | | | | | |
| **Balance, March 31, 2005** | 8,341,480 | $ 5,560 | $ 54,098 | $ 2,093 | $ (12) | $ (169) | $ 61,570 | |
| Net income | | | | 29,786 | | | 29,786 | 29,786 |
| Exercise of stock options and warrants | 695,777 | 465 | 19,700 | | | | 20,165 | |
| Issuance of stock under employee compensation plans | 9,344 | 6 | 484 | | | | 490 | |
| Issuance of restricted stock | 24,078 | 16 | 2,135 | | | (2,151) | | |
| Tax benefit accrued on stock option exercises | | | 17,540 | | | | 17,540 | |
| Compensation expense on stock options | | | 104 | | | | 104 | |
| Translation adjustment | | | | | (3) | | (3) | (3) |
| Amortization of unearned compensation | | | | | | 547 | 547 | |
| Unrealized gain (loss) on available for sale securities, net | | | | | (1) | | (1) | (1) |
| | | | | | | | | |
| **Balance, March 31, 2006** | 9,070,679 | 6,047 | 94,061 | 31,879 | (16) | (1,773) | 130,198 | $ 29,782 |
| Net income | | | | 24,610 | | | 24,610 | 24,610 |
| Exercise of stock options and warrants | 67,130 | 45 | 2,912 | | | | 2,957 | |
| Issuance of stock under employee compensation plans | 10,530 | 7 | 631 | | | | 638 | |
| Issuance of restricted stock | 38,636 | 26 | (26) | | | | | |
| Tax benefit accrued on stock option exercises | | | 544 | | | | 544 | |
| Compensation expense on stock options | | | 7,186 | | | | 7,186 | |
| Compensation expense on restricted stock and restricted stock units | | | 1,501 | | | | 1,501 | |
| Translation adjustment | | | | | 16 | | 16 | 16 |
| Reversal of unearned compensation upon adoption of FAS 123(R) | | | (1,773) | | | 1,773 | | |
| Unrealized gain (loss) on available for sale securities, net | | | | | 48 | | 48 | 48 |
| | | | | | | | | |
| **Balance, March 31, 2007** | 9,186,975 | 6,125 | 105,036 | 56,489 | 48 | | 167,698 | $ 24,674 |
| Net income | | | | 17,478 | | | 17,478 | 17,478 |
| Repurchase of common stock | (473,303) | (316) | (24,852) | | | | (25,168) | |
| Exercise of stock options and warrants | 149,260 | 99 | 4,062 | | | | 4,161 | |
| Issuance of stock under employee compensation plans | 12,091 | 8 | 681 | | | | 689 | |
| Issuance of restricted stock | 70,640 | 47 | (47) | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Tax benefit accrued on stock option exercises | | | 1,350 | | | | 1,350 | |
| Compensation expense on stock options | | | 3,258 | | | | 3,258 | |
| Compensation expense on restricted stock and restricted stock units | | | 2,056 | | | | 2,056 | |
| Dividends declared | | | | (5,516) | | | (5,516) | |
| Translation adjustment | | | | | (8) | | (8) | (8) |
| Unrealized gain (loss) on available for sale securities, net | | | | | 74 | | 74 | 74 |
| **Balance, March 31, 2008** | 8,945,663 | $ 5,963 | $ 91,544 | $ 68,451 | $ 114 | $ | $ 166,072 | $ 17,544 |

The accompanying notes are an integral part of these consolidated financial statements

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**CONSOLIDATED STATEMENTS OF CASH FLOWS**

**FOR THE YEARS ENDED MARCH 31, 2008, 2007, AND 2006**

(Amounts in thousands)

| | 2008 | 2007 | 2006 |
|---|---|---|---|
| **Cash flows from operating activities:** | | | |
| Net income | $ 17,478 | $ 24,610 | $ 29,786 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | | |
| Depreciation and amortization | 4,123 | 2,425 | 989 |
| Provisions for contracts, inventory, and accounts receivable reserves | 380 | (203) | 2,673 |
| Write-down of note receivable | 1,608 | | |
| Gain on sale of assets | | | (336) |
| Change in fair value of warrants | (11) | (2,270) | 6,094 |
| Amortization of bond discount | (2,278) | (1,666) | (356) |
| Stock compensation expense | 5,314 | 8,687 | 651 |
| Deferred income taxes | (2,751) | 72 | 5,627 |
| Reversal of deferred tax asset valuation allowance relating to the utilization of tax net operating losses | | | (2,715) |
| Change in assets and liabilities: | | | |
| Accounts receivable | (4,236) | 2,621 | 2,408 |
| Unbilled costs and fees | (273) | (1,748) | (3,338) |
| Inventories | (20,328) | (3,206) | 5,248 |
| Prepaid expenses and other assets | 587 | 1,878 | (5,566) |
| Accounts payable | 4,543 | 1,458 | (84) |
| Deferred revenue | 18,326 | 4,591 | (212) |
| Customer deposits | (5,007) | 5,451 | (5,029) |
| Accrued expenses and other current liabilities | (136) | 2,154 | 4,358 |
| Non-current liabilities | | | (51) |
| Total adjustments | (139) | 20,244 | 10,361 |
| Net cash provided by operating activities | 17,339 | 44,854 | 40,147 |
| **Cash flows from investing activities:** | | | |
| Proceeds from maturities of short-term investments | 159,725 | 109,345 | 39,146 |
| Purchases of short-term instruments | (163,971) | (130,600) | (61,334) |
| Proceeds from sale of assets | | | 2,800 |
| Issuance of note receivable | (608) | (1,000) | |
| Purchases of property and equipment | (3,270) | (4,733) | (11,224) |
| Cash used for investing activities | (8,124) | (26,988) | (30,612) |
| **Cash flows from financing activities:** | | | |
| Decrease (increase) in restricted cash and investments | 278 | (2,703) | 257 |
| Proceeds from financing of leasehold improvements | 417 | 2,253 | 3,339 |
| Repurchase of shares | (25,168) | | |
| Payment of common stock dividend | (5,516) | | |
| Repayment of leasehold financing | (1,335) | (804) | (378) |
| Proceeds from exercise of warrants | 509 | 834 | 1,854 |
| Proceeds from exercise of stock options | 3,029 | 989 | 10,118 |
| Reduction of income taxes paid due to the tax benefit from employee stock option expense | 1,350 | 544 | 10,515 |

| | | | |
|---|---|---|---|
| Cash (used for) provided by financing activities | (26,436) | 1,113 | 25,705 |
| Foreign currency translation effect on cash | (11) | 16 | (3) |
| **Net increase (decrease) in cash and cash equivalents** | (17,232) | 18,995 | 35,237 |
| **Cash and cash equivalents at beginning of year** | 69,650 | 50,655 | 15,418 |
| **Cash and cash equivalents at end of year** | $ 52,418 | $ 69,650 | $ 50,655 |
| **Supplemental disclosures of cash flow information:** | | | |
| Interest paid | $ 158 | $ 353 | $ 24 |
| Income taxes paid | $ 11,417 | $ 12,495 | $ 7,598 |
| **Non-cash transactions:** | | | |
| Issuance of stock for 401K match | $ 689 | $ 638 | $ 490 |
| Issuance of restricted stock | $ | $ | $ 2,151 |
| Assumption of debt / lease financing receivable | $ | $ 2,029 | $ 2,303 |
| Fair value of warrants exercised | $ 623 | $ 1,134 | $ 8,193 |

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

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

## 1. NATURE OF OPERATIONS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

American Science and Engineering, Inc. (the Company ) is engaged in the development and manufacture of sophisticated X-ray inspection systems for critical detection and security screening solutions for sale primarily to U.S. and foreign government agencies.

### Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiary. All significant inter-company balances and transactions have been eliminated in consolidation.

### Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

### Cash and Cash Equivalents

The Company considers all investments with original maturities of 90 days or less to be cash equivalents. The Company maintains cash and cash equivalent balances with financial institutions that exceed federally insured limits. The Company has not experienced any losses related to these balances, and management believes its credit risk to be minimal. Cash and cash equivalents are carried at cost, which approximates fair market value at fiscal year-end 2008 and 2007.

### Restricted Cash and Investments

The Company s loan and security agreement with its bank require certain cash and investment balances to be restricted as collateral against outstanding standby letters of credit. The restricted cash amounts with Silicon Valley Bank are in the form of certificates of deposits that mature beyond 90 days. Restrictions that mature beyond one year are classified as long-term in the accompanying balance sheet.

**Short-term Investments and Cash Equivalents**

Short-term investments and cash equivalents consist of investments in money market funds, certificates of deposit, commercial paper and corporate debentures/bonds. These investments are classified as available-for-sale and are recorded at their fair market values using the specific identification method. The unrealized holding gains or losses on these securities are included as a component of comprehensive income in the Consolidated Statements of Stockholders Equity and Comprehensive Income.

| | Amortized Cost | Gross Unrealized Gains | Gross Unrealized Losses | Fair Value |
|---|---|---|---|---|
| **2008:** | | | | |
| Money market funds | $ 33,340 | $ | $ | $ 33,340 |
| Certificates of deposit | 7,000 | 2 | | 7,002 |
| Commercial paper | 45,098 | 37 | | 45,135 |
| Corporate debentures/bonds | 32,495 | 99 | (56) | 32,538 |
| Total | $ 117,933 | $ 138 | $ (56) | $ 118,015 |
| | | | | |
| Classified as: | | | | |
| Cash equivalents | | | | $ 45,328 |
| Short term securities | | | | 72,687 |
| | | | | $ 118,015 |
| | | | | |
| **2007:** | | | | |
| Money market funds | $ 6,240 | $ | $ | $ 6,240 |
| Certificates of deposit | 4,201 | | (1) | 4,200 |
| Commercial paper | 72,760 | 6 | (1) | 72,765 |
| Corporate debentures/bonds | 37,762 | 9 | (6) | 37,765 |
| U.S. Government agency bonds | 3,974 | | | 3,974 |
| Total | $ 124,937 | $ 15 | $ (8) | $ 124,944 |
| | | | | |
| Classified as: | | | | |
| Cash equivalents | | | | $ 58,858 |
| Short term securities | | | | 66,086 |
| | | | | $ 124,944 |

**Accounts Receivable and Unbilled Costs and Fees**

Accounts receivable are recorded at the invoiced amount. Amounts collected on trade accounts receivable are included in net cash provided by operating activities in the consolidated statements of cash flows. The Company maintains an allowance for doubtful accounts for estimated losses inherent in its accounts receivable portfolio. The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on known troubled accounts, historical experience, and other currently available evidence. Activity in the allowance for doubtful accounts is as follows:

| (In thousands) | Balance at Beginning of Year | Charged (Credited) to Costs and Expenses | Deductions / Write-offs Charged to Reserves | Balance at End of Year |
|---|---|---|---|---|
| **2008** | $ 224 | $ 19 | $ 13 | $ 230 |
| **2007** | $ 345 | $ (119) | $ 2 | $ 224 |
| **2006** | $ 501 | $ (106) | $ 50 | $ 345 |

In fiscal 2007 and 2006, the Company had a net credit to bad debt expense as it collected on certain accounts receivable balances which were significantly aged and deemed to be uncollectible at the prior year ends.

Included in accounts receivable and unbilled costs and fees at March 31, 2008 and 2007 are $20,822,000 and $23,976,000, respectively, attributable to both prime and subcontracts with federal and state governments. The Company establishes a reserve against unbilled costs and fees based on known troubled accounts or contracts, historical experience, and other currently available evidence. There was not activity in the reserve for unbilled costs and fees during fiscal 2008. Activity in the allowance for unbilled costs and fees for fiscal 2007 and 2006 is as follows:

| (In thousands) | Balance at Beginning of Year | Charged (Credited) to Costs and Expenses | Deductions/ Write-offs Charged to Reserves | Balance at End of Year |
|---|---|---|---|---|
| **2007** | $ 36 | $ (36) | $ | $ |
| **2006** | $ 76 | $ (28) | $ 12 | $ 36 |

**Inventories**

Inventories consist of material, labor and manufacturing overhead and are recorded at the lower of cost, using the weighted average cost method, or net realizable value. Excessive manufacturing overhead costs attributable to idle facility expenses, freight, handling costs and wasted material (spoilage) attributable to abnormally low production volumes (levels that materially differ from budgeted production plans due primarily to changes in customer demand) are excluded from inventory and recorded as an expense in the period incurred.

The components of inventories at March 31, 2008 and 2007 were as follows:

| (In thousands) | 2008 | 2007 |
|---|---|---|
| Raw materials, completed subassemblies and spare parts | $ 18,113 | $ 11,260 |
| Work-in-process | 12,163 | 6,681 |
| Finished goods | 9,831 | 2,199 |
| **Total** | $ 40,107 | $ 20,140 |

The Company periodically reviews quantities of inventory on hand and compares these amounts to expected usage of each particular product or product line. The Company records, as a charge to cost of sales, any amounts required to reduce the carrying value to net realizable value.

**Notes Receivable**

During fiscal 2007 and 2008, the Company loaned a potential acquisition target $1,608,000 million under an interest bearing note receivable. During fiscal 2008, the Company abandoned this acquisition and evaluated the collectibility of the note to determine if there was any risk of default. The Company determined that there was risk of default, and during the year ended March 31, 2008, the Company wrote off this note receivable and the related accrued interest receivable as an uncollectible debt. The write-off is included in general and administrative expense for the fiscal year ended March 31, 2008.

**Building, Equipment and Leasehold Improvements**

The Company provides for depreciation and amortization of its fixed assets on a straight-line basis over estimated useful lives of 3-11 years or remaining lease terms. Expenditures for normal maintenance and repairs are charged to expense as incurred. Significant additions, renewals or betterments that extend the useful lives of the assets are capitalized at cost. The cost and accumulated depreciation applicable to equipment and leasehold improvements sold, or otherwise disposed of, are removed from the accounts, and any resulting gain or loss is included in the consolidated statements of operations.

Building, equipment and leasehold improvements consisted of the following at March 31:

| (In thousands) | Estimated Useful Lives | 2008 | 2007 |
|---|---|---|---|
| Building and leasehold improvements | Lesser of 11 years or remaining lease term | $ 18,014 | $ 17,252 |
| Equipment and tooling | 3-10 years | 2,488 | 2,306 |
| Computer equipment and software | 3-5 years | 15,368 | 14,272 |
| Furniture and fixtures | 5-7 years | 1,476 | 1,319 |
| Demo and test equipment | 3-7 years | 4,193 | 3,120 |
| Motor vehicles | 3 years | 18 | 18 |
| Total | | 41,557 | 38,287 |
| Less accumulated depreciation and amortization | | (19,356) | (15,233) |
| Building, equipment and leasehold improvements, net | | $ 22,201 | $ 23,054 |

**Revenue Recognition**

The Company recognizes certain CargoSearch and Z Backscatter system sales and other product revenue, primarily ParcelSearch systems and after-market parts, in accordance with SEC Staff Accounting Bulletin ( SAB )No. 101, Revenue Recognition in Financial Statements modified by SAB No. 104 which requires that four basic criteria must be met before revenue can be recognized: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services rendered; (3) the fee is fixed and determinable; and (4) collectibility is reasonably assured.

Certain of the Company s contracts are multiple-element arrangements, which include standard products, custom-built systems or contract engineering projects, services, such as training and service contracts. In accordance with Emerging Issues Task Force Issue No. 00-21, Revenue Arrangements with Multiple Deliverables, ( EITF 00-21 ) revenue arrangements that include multiple elements are analyzed to determine whether the deliverables can be divided into separate units of accounting or treated as a single unit of accounting. The consideration the Company receives is allocated among the separate units of accounting based on their relative fair values determined based on prices of these elements as sold on a stand-alone basis, and the applicable revenue recognition criteria are applied to each of the separate units. There is no customer right of return in the Company s sales agreements. Revenues are allocated to a delivered product or service when all of the following criteria are met: (1) the delivered item has value to the customer on a standalone basis; (2) there is objective and reliable evidence of the fair value of the undelivered item; and (3) if the arrangement includes a general right of return relative to the delivered item, delivery or performance of the undelivered item is considered probable and substantially in our control.

Revenues for certain long-term, custom-built systems or contract engineering projects are recognized on a percentage of completion basis. The lengths of these contracts typically range from 9 to 24 months from order to delivery and acceptance. Percentages-of-completion are determined by relating the actual costs of work performed to date for each contract to its estimated final costs. Revisions in costs and profit estimates are reflected in the period in which the facts causing the revision become known.

Training and service contracts deliverables are accounted for separately from the delivered product elements as the Company s undelivered products have value to its customers on a stand-alone basis and the Company has objective and reliable evidence of the fair value of such services. Accordingly, service revenue representing the fair value of services not yet performed at the time of product shipment is deferred and recognized as such services are performed.

Certain contracts require payments from the customer upon execution of the agreement that are included in customer deposits. Individual customer deposits are reduced by the amount of revenue recognized on the contract until a zero balance is reached. Revenue recognized in excess of billings under the contracts is included in unbilled costs and fees in the accompanying balance sheet. Of the amounts in unbilled costs and fees at March 31, 2008, $6,040,000 (99%) is expected to be billed and collected during fiscal 2009.

For all fixed price and long-term contracts, if a loss is anticipated on the contract, a provision is made in the period in which such losses are determined.

Under the terms of certain of its cost reimbursement contracts, the Company is not permitted to bill customers a specified portion of the contract value until completion. Such retainages (approximately $74,000 and $46,000 at March 31, 2008 and 2007, respectively) result from both commercial contract retentions and government contract withholdings generally for up to 15% of fees, as well as the difference between the actual and provisional indirect cost billing rates. Retainages are included in the accompanying consolidated balance sheets as components of unbilled costs and fees. The accuracy and appropriateness of the Company s direct and indirect costs and expenses under these cost reimbursement contracts and its accounts receivable recorded pursuant to such contracts, are subject to regulation and audit, including by the U.S. Defense Contract Audit Agency ( DCAA ) or by other appropriate agencies of the U.S. Government. Such agencies have the right to challenge the Company s cost estimates or allocations with respect to any government contract. Additionally, a portion of the payments to the Company under government contracts are provisional payments that are subject to potential adjustment upon audit by such agencies. Historically, such audits have not resulted in any significant disallowed costs. Although the Company can give no assurances, in the opinion of management, any adjustments likely to result from inquiries or audits of its contracts will not have a material adverse impact on the Company s financial condition or results of operations.

The Company recognizes sales for its systems that are produced in a standard manufacturing operation, have minimal customer site installation requirements and have shorter order to delivery cycles when title passes and when other revenue recognition criteria are met. Management believes the customer s post-delivery acceptance provisions and installation requirements on these systems are perfunctory and inconsequential and the costs of installation at the customer s site are accrued at the time of revenue recognition. The Company has demonstrated a history of customer acceptance subsequent to shipment and installation of these systems. For systems which entail more significant installation efforts and site work and/or have non-standard customer acceptance provisions, revenue recognition is deferred until installation is complete and customer acceptance has occurred.

Service revenues are recognized on time and materials engagements as the services are provided. Service contract revenues are recognized on a straight-line basis over the length of the contract which reasonably approximates the period service revenues are earned.

The Company records billed shipping and handling fees and billed out-of-pocket expenses as revenue and the associated costs as cost of goods sold in the accompanying consolidated statements of operations.

**Warranty Costs**

The Company generally provides on certain of its products a one year parts and labor warranty with the purchase of domestic equipment, and a one year parts only warranty on international equipment. The anticipated cost for this one year warranty is accrued for at the time of the sale based upon historical experience and management s estimates of future liabilities, and is recorded as accrued warranty costs (See Note 5).

**Deferred Revenue**

The Company offers to its customers extended warranty and service contracts. These contracts typically have a coverage period of one to five years, and include advance payments that are recorded as deferred revenue. Revenue is recognized on a straight-line basis over the life of the contract, which reasonably approximates the period these revenues are earned. Costs associated with these extended warranty and service contracts are expensed to cost of goods sold as incurred.

**Impairment of Long-Lived Assets**

Long-lived assets are reviewed for possible impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable in accordance with SFAS No. 144, Accounting for the Impairment and Disposal of Long-Lived Assets.

Impairment is assessed by comparing the estimated undiscounted cash flows over the asset s remaining life to the carrying amount of the asset. If the estimated cash flows are insufficient to recover the asset, an impairment loss is recognized based on the difference between the carrying value of the asset and the fair value of the asset less any costs of disposal. No impairment costs were recorded in the fiscal years ended March 31, 2008, 2007 and 2006.

**Accrued Salaries and Benefits**

Accrued salaries and benefits at March 31, 2008 and March 31, 2007 include the following:

| (In thousands) | 2008 | 2007 |
|---|---|---|
| Accrued payroll and payroll related taxes | $ 656 | $ 510 |
| Accrued benefits | 236 | 212 |
| Accrued incentive compensation | 550 | 5,269 |
| Accrued vacation | 1,493 | 1,250 |
| | $ 2,935 | $ 7,241 |

**Customer Deposits**

For most international orders, the Company generally includes, as part of its terms and conditions, an advance deposit with order acceptance. For long-term international contracts, the Company will generally include milestone payments tied to a specific event and/or passage of time. These deposit amounts are recorded as a liability under Customer Deposits until reduced by revenue recognized against the specific contract.

**Research and Development**

Internally funded research and development costs including direct labor, material, subcontractor expenses and related overheads are expensed as incurred. Internally funded research and development costs were $12,306,000, $7,184,000, and $9,601,000 in fiscal 2008, 2007, and 2006, respectively. In addition, the Company recognized revenues of $13,978,000, $6,597,000, and $2,804,000, in fiscal 2008, 2007, and 2006, respectively related to government-sponsored research and development earned primarily on a cost reimbursement and fee basis as discussed above.

**Fair Value of Financial Instruments**

The Company s financial instruments consist primarily of cash and cash equivalents, short-term investments, accounts receivable, unbilled costs and fees, accounts payable, warrant liability and letters of credit. The recorded amounts of these instruments approximate fair value.

**Income per Common and Potential Common Shares**

Basic earnings per common share is computed by dividing net income available to common stockholders by the weighted average number of shares of common stock outstanding during the year. Diluted earnings per share include the dilutive impact of options, warrants, restricted stock and restricted stock units using the average share price of the Company s common stock for the period. For the years ended March 31, 2008, 2007, and 2006, respectively, common stock equivalents of 253,000, 108,000, and 72,000 are excluded from diluted earnings per share, as their effect is anti-dilutive.

| (In thousands except per share amounts) | Year Ended March 31, 2008 | March 31, 2007 | March 31, 2006 |
|---|---|---|---|
| **Earnings per Share Basic:** | | | |
| Net income | $ 17,478 | $ 24,610 | $ 29,786 |
| Weighted average number of common shares outstanding basic | 9,114 | 9,117 | 8,555 |
| Income per Share Basic | $ 1.92 | $ 2.70 | $ 3.48 |
| | | | |
| **Earnings per Share Diluted:** | | | |
| Net income | $ 17,478 | $ 24,610 | $ 29,786 |
| Adjustment to net income for change in warrant valuation | (11) | (2,270) | |
| Adjusted net income | $ 17,467 | $ 22,340 | $ 29,786 |
| Weighted average number of common shares outstanding basic | 9,114 | 9,117 | 8,555 |
| Assumed exercise of stock options, warrants, restricted stock and restricted stock units, using the treasury stock method | 233 | 251 | 558 |
| Weighted average number of common and potential common shares outstanding diluted | 9,347 | 9,368 | 9,113 |
| Income per share Diluted | $ 1.87 | $ 2.38 | $ 3.27 |

**Income Taxes**

The Company accounts for income taxes in accordance with Statement of Financial Accounting Standards ( SFAS ) No. 109, Accounting for Income Taxes. Accordingly, the Company recognizes deferred income taxes based on the expected future tax consequences of differences between the financial statement basis and the tax basis of assets and liabilities, calculated using enacted tax rates in effect for the year in which the differences are expected to be reflected in the tax return. The Company records a valuation allowance against any net deferred tax assets if it is more likely than not that they will not be realized.

**Concentrations of credit risk**

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of cash and cash equivalents, investments and accounts and unbilled receivables. At times, the Company maintains cash balances in excess of insured limits. The Company maintains its cash and cash equivalents with major financial institutions. The Company s credit risk is managed by investing its cash in high quality money market funds, commercial paper, investment grade corporate bonds and certificates of deposit.

The Company s largest customer, an agency of the U.S. Government, at March 31, 2008 comprised 24% of the total accounts receivable balance. The Company generally requires letters of credit and/or prepayments from higher-risk and international customers. The Company has not experienced any significant losses from uncollectible accounts.

**Stock-Based Compensation**

On April 1, 2006, the Company adopted Statement of Financial Accounting Standards No. 123(R) (SFAS 123(R)) Accounting for Stock-Based Compensation , which requires the measurement and recognition of all compensation costs for all stock based awards made to employees and the Board of Directors based upon fair value over the requisite service period for awards expected to vest. Prior to adoption, the Company accounted for stock options under the intrinsic value method set in accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees, and related interpretations, and provided the required pro forma disclosures prescribed by SFAS No. 123, Accounting for Share-based Compensation , as amended.

SFAS 123(R) requires the Company to estimate the fair value of share-based awards on the date of grant using an option pricing model. The Company adopted SFAS 123(R) using the modified prospective transition method which required the application of the accounting standard starting April 1, 2006, the first day of the Company s fiscal year 2007. Prior period information was not restated to reflect the fair value method of expensing share-based awards.

Stock- based compensation costs recognized for the years ended March 31, 2008 and 2007, includes compensation costs for awards granted prior to, but not yet vested as of April 1, 2006 (adoption date), as well as any new grants issued after April 1, 2006. The Company recognized $5,314,000 and $8,594,000 of share-based compensation costs in the consolidated statements of income for the year ended March 31, 2008 and 2007, respectively. The income tax benefit related to such compensation for the years ended March 31, 2008 and 2007 was approximately $818,000 and $1,140,000, respectively.

The following table summarizes share-based compensation costs included in the Company s consolidated statements of income:

| (In thousands) | Fiscal Year Ended March 31, 2008 | March 31, 2007 |
|---|---|---|
| Cost of revenues | $ 1,478 | $ 3,559 |
| Selling, general and administrative | 3,836 | 5,035 |
| Total share-based compensation expense before tax | $ 5,314 | $ 8,594 |

The Company had previously adopted the provisions of SFAS No. 123, Accounting for Share-based Compensation, as amended by SFAS No. 148, Accounting for Share-based Compensation Transition and Disclosure, through disclosure only. The following table illustrates the effect on net income and earnings per share for the fiscal year ended March 31, 2006 as if the Company had applied the fair value recognition provisions of SFAS No. 123 to share-based employee awards.

| (In thousands except per share amounts) | 2006 |
|---|---|
| Net income | |
| As reported | $ 29,786 |
| Add: Stock based compensation included in net income as reported | 651 |
| Less: Stock based compensation using fair value method for all awards | (9,234) |
| Pro forma net income | $ 21,203 |
| | |
| Income per share Basic | |
| As reported | $ 3.48 |
| Pro forma | $ 2.48 |
| Income per share Diluted: | |
| As reported | $ 3.27 |
| Pro forma | $ 2.34 |

Upon adoption of SFAS 123(R), in accordance with Staff Accounting Bulletins No. 107 and No. 110, the Company selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value for the stock awards. The Black-Scholes method of valuation requires several assumptions: (1) the expected term of the stock award, (2) the expected future stock volatility over the expected term and (3) risk-free interest rate. The expected term represents the expected period of time the Company believes the options will be outstanding based on historical information. Estimates of expected future stock price volatility are based on the historic volatility of the Company s common stock and the risk free interest rate is based on the U.S. Zero-Bond rate. The fair value of options at date of grant was estimated with the following assumptions:

| | Year Ended | | |
|---|---|---|---|
| | March 31, 2008 | March 31, 2007 | March 31, 2006 |
| **Assumptions:** | | | |
| Expected life | 3 years | 3 years | 3 years |
| Risk-free interest rate | 4.1% | 4.8% | 3.4% |
| Stock volatility | 51% | 56% | 53% |
| Dividend yield | 1.3% | 0% | 0% |

**New Accounting Pronouncements**

In September 2006, the FASB issued SFAS No. 157, Fair Value Measurements ( SFAS 157 ). SFAS 157 establishes a common definition for fair value to be applied, establishes a framework for measuring fair value in accordance with generally accepted accounting principles, and expands disclosure about such fair value measurements. In February 2007, the FASB issued SFAS No. 159, The Fair Value Option for Financial Assets and Financial Liabilities-including an amendment of FASB Statement No. 115 ( SFAS 159 ). SFAS 159 allows an entity the irrevocable option to elect fair value for the initial and subsequent measurement of certain financial assets and liabilities under an instrument-by-instrument election. SFAS 157 and SFAS 159 are both effective for fiscal years beginning after November 15, 2007. Management does not expect the adoption of SFAS 157 or SFAS 159 to have a material impact on the Company s financial position, results of operations and cash flows.

In December 2007, the FASB issued SFAS No. 141R, Business Combinations ( SFAS 141R ). SFAS 141R replaces SFAS 141 and establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in the acquiree and the goodwill acquired. This standard is effective for fiscal years beginning after December 15, 2008.

In December 2007, the FASB issued SFAS No. 160, Noncontrolling Interests in Consolidated Financial Statements ( SFAS 160 ). SFAS 160 establishes accounting and reporting standards for ownership interests in subsidiaries held by parties other than the parent, the amount of consolidated net income attributable to the parent and to the noncontrolling interest, changes in a parent s ownership interest and the valuation of retained noncontrolling equity investments when a subsidiary is deconsolidated. This standard is effective for fiscal years beginning after December 15, 2008.

**2. LEASE AGREEMENTS**

The Company leases certain equipment under operating lease arrangements and facilities under non-cancelable operating leases with various renewal options. For operating leases which contain fixed escalations in rental payments, the Company records the total rent payable on a straight-line basis over the original lease term as defined in SFAS 98 Accounting for Leases. The

Company incurred $269,000, $204,000, and $634,000 of operating rent expense in 2008, 2007, and 2006 respectively. In conjunction with the Company s lease for its headquarters, the Company has issued security in the form of a standby letter of credit in the amount of $300,000 with an original expiration date of March 1, 2006 and contains automatic extensions through May 15, 2016.

In March 2005, the Company renewed its lease agreement for its corporate headquarters and manufacturing facilities in Billerica, Massachusetts. As part of the lease agreement, the Company s landlord agreed to certain renovations to the Billerica facility including the construction of additional high bay manufacturing space. The Company was responsible for a portion of the construction costs and was deemed to be the owner of the building during the construction period under EITF 97-10 The Effect of Lessee Involvement in Asset Construction . In January 2007, the Company amended this lease agreement to expand its lease to include the remaining available space in the building. During the year ended March 31, 2007, the Company capitalized $2,029,000 to record the facility on its books with an offsetting credit to the Lease Financing Liability. In addition, amounts paid for construction were recorded as construction in progress and the landlord construction allowances of $5,642,000 in 2006 and $367,000 in 2008 were recorded as additional lease financing liability.

At the completion of the construction of the initial renovations in February 2006, the lease was reviewed for potential sale-leaseback treatment in accordance with SFAS No. 98. Based on this review, it was determined that the lease did not qualify for sale-leaseback treatment in accordance with SFAS No. 98. As a result, building and tenant improvements and associated lease financing liabilities remained on the Company s books. The Lease Financing Liability is being amortized over the lease term based on the payments designated in the agreement and the building and tenant improvement assets are being depreciated on a straight line basis over their useful lives.

Future minimum rental payments under the Company s non-cancelable leases, excluding real estate taxes, insurance and operating costs paid by the Company, required over the initial terms of the leases are as follows (in thousands):

| Year Ending March 31, | Operating Leases | Capital Leases |
|---|---|---|
| 2009 | $ 194 | $ 1,278 |
| 2010 | 185 | 1,291 |
| 2011 | 185 | 1,412 |
| 2012 | 185 | 1,412 |
| 2013 | 185 | 1,424 |
| Thereafter | 541 | 4,498 |
| Total payments | $ 1,475 | 11,315 |
| Imputed interest | | (641) |
| Lease financing liability | | $ 10,674 |
| Less: Current portion of lease financing liability | | 1,134 |
| Lease financing liability, net of current portion | | $ 9,540 |

**3. LINE OF CREDIT**

On November 16, 2006, the Company modified its domestic loan and security agreement with Silicon Valley Bank East which was scheduled to expire on November 29, 2006. The Company increased its domestic facility from $5.0 million to $20.0 million to support the Company s routine working capital needs. The Company s $10.0 million export loan and security facility, guaranteed by the Export-Import Bank of the United States, expired as of November 29, 2006. Maximum amount available for borrowings under the domestic facility is (a) if the Company s unrestricted cash is greater than or equal to $30.0 million, $20.0 million minus the amount of all outstanding letters of credit less certain reserves, and minus the outstanding principal balance of any advances or (b) if the Company s unrestricted cash is less than $30.0 million for a period of 30 consecutive days, the lesser of (i) the $20.0 million, or ii) 85% of eligible domestic accounts receivable minus the amount of

outstanding letters of credits adjusted for certain reserves and minus the principal balance of any advances. The modification of the domestic loan and security agreement extended this credit facility through November 14, 2008.

The credit facility bears an interest rate of the greater of 4.0% or the Silicon Valley Bank prime rate (5.25% at March 31, 2008). The credit agreement is collateralized by certain assets of the Company and contain certain restrictions, including limitations on the amount of distributions that can be made to stockholders, and the disposition or encumbrances of assets, and require the maintenance of certain financial covenants. As of March 31, 2008, the Company was in compliance with these covenants.

At March 31, 2008, there were no borrowings outstanding against this credit facility. Under the terms of the credit agreement, the Company was required to pay certain one-time facility fees which are being amortized over the lives of the facilities and is required to pay a fee of 0.50% quarterly on unused amounts under the line of credits. Total expenses incurred related to these fees were $157,000, $202,000, and $172,000 in fiscal 2008, 2007, and 2006, respectively.

In the normal course of business, the Company may provide certain customers and potential customers with performance guarantees, which are generally backed by standby letters of credit. In general, the Company would only be liable for the amount of these guarantees in the event of default in the performance of our obligations, the probability of which is remote in management s opinion. The Company had outstanding $6,091,000 in stand-by letters of credit against the domestic facility with $13,909,000 remaining availability. Of the outstanding letters of credit, $300,000 relates to the Company s building lease and the remainder is guaranteeing performance on certain international projects. No amounts have been drawn against these letters of credit. In addition at March 31, 2008, the Company had a restricted cash balance of $2,523,000 related to certain bank required deposits for outstanding letters of credits, bid bonds, and other bank-related fees.

**4. INCOME TAXES**

The provision for income taxes for the years ended March 31, 2008, 2007, and 2006 consisted of the following:

| **(In thousands)** | **2008** | **2007** | **2006** |
|---|---|---|---|
| Current: | | | |
| Federal | $ 12,040 | $ 13,909 | $ 11,388 |
| State | 680 | 1,419 | 1,653 |
| Foreign | 40 | 30 | 30 |
| | 12,760 | 15,358 | 13,071 |
| Deferred | | | |
| Federal | (2,713) | (204) | 5,090 |
| State | (40) | 252 | 537 |
| Change in Valuation Allowance | | | (2,715) |
| | (2,753) | 48 | 2,912 |
| Total | $ 10,007 | $ 15,406 | $ 15,983 |

The difference between the total expected provision for income taxes computed by applying the statutory federal income tax rate to income before provision for income taxes and the recorded provision for income taxes for the three years in the period ended March 31, is as follows:

| **(In thousands)** | **2008** | **2007** | **2006** |
|---|---|---|---|
| Provision for income taxes at statutory rate | $ 9,620 | $ 14,005 | $ 16,019 |
| State tax provision net of federal effect | 416 | 1,085 | 1,424 |
| Permanent tax differences for stock warrant | (4) | (795) | 2,133 |
| Non-deductible stock based compensation | 242 | 1,369 | |
| Research tax credits | (191) | (30) | (226) |
| Effect of ETI exclusion | | (229) | (678) |
| Change in valuation allowance | | | (2,715) |
| Qualifying manufacturing credits | (179) | (206) | (189) |
| Other | 103 | 207 | 215 |
| | | | |
| Provision for income taxes | $ 10,007 | $ 15,406 | $ 15,983 |

During fiscal 2006, the deferred tax valuation allowance at March 31, 2005 of $9,740,000 was reversed, due to the determination by the Company that the benefits of the deferred tax asset will more likely than not be realized in the current and future years. This valuation allowance was established by a combination of prior year operating activities and the exercise of non-qualified stock options and disqualifying dispositions of incentive stock options by employees. The amount that related to prior year operating activities totaled $2,715,000 and was recorded as a reduction of the fiscal 2006 income tax expense. The amount that related to the exercise of stock options of $7,025,000 was recorded as a component of the tax benefit accrued on stock option exercises in equity in accordance with the provisions of APB No. 25 and

SFAS No. 109.

The significant components of the net deferred tax assets at March 31, 2008 and 2007 are as follows:

| | 2008 | | 2007 | |
|---|---|---|---|---|
| **(In thousands)** | **Current** | **Non-current** | **Current** | **Non-current** |
| Assets: | | | | |
| Net operating loss carry forwards | $ | $ | $ | $ 3 |
| Accounts receivable and unbilled costs and fees | | 84 | 83 | |
| Inventory | 104 | 797 | 814 | |
| Deferred revenue | | 1,522 | | 276 |
| Accrued vacation | 489 | | 326 | |
| Accrued warranty costs | 620 | | 733 | |
| Depreciation | | 304 | | 468 |
| Unearned compensation | 343 | 2,524 | 1,103 | 223 |
| Other | 21 | | 28 | |
| Deferred income tax assets | 1,577 | 5,231 | 3,087 | 970 |
| Valuation allowance | | | | |
| Net deferred income taxes | $ 1,577 | $ 5,231 | $ 3,087 | $ 970 |

In June 2006, the FASB issued Interpretation No. 48, Accounting for Uncertainty in Income Taxes, an interpretation of FASB Statement 109 ( FIN 48 ). This statement clarifies the criteria that an individual tax position must satisfy for some or all of the benefits of that position to be recognized in a company s financial statements. FIN 48 prescribes a recognition threshold of more-likely than-not, and a measurement attribute for all tax positions taken or expected to be taken on a tax return, in order for those tax positions to be recognized in the financial statements. Effective April 1, 2007, the Company adopted the provisions of FIN 48 and there has been no material effect on the financial statements. As a result, there was no cumulative effect related to adopting FIN 48 and no interest or penalties related to uncertain tax positions was accrued.

The Company is currently open to audit under the statute of limitations by the Internal Revenue Service and state taxing authorities for the years ending March 31, 2005 through 2008. There are no federal or state income tax examinations that are currently being performed. The Company believes that there are no uncertain tax positions as of March 31, 2008.

**5. WARRANTY OBLIGATIONS**

Certain of the Company s products carry a one-year warranty, the costs of which are accrued for at time of shipment or delivery. Accrual rates are based upon historical experience over the preceding twelve months and management s judgment of future exposure. Warranty experience for the years ended March 31, 2008 and 2007 is as follows:

| (In thousands) | 2008 | 2007 |
|---|---|---|
| Warranty accrual at beginning of period | $ 1,997 | $ 3,606 |
| Accruals for warranties issued during the period | 2,826 | 2,585 |
| Adjustment of preexisting accrual estimates | (2,020) | (2,735) |
| Warranty costs incurred during period | (1,132) | (1,459) |
| Warranty accrual at end of period | $ 1,671 | $ 1,997 |

**6. STOCKHOLDERS EQUITY**

**Preferred Stock**

The Company s articles of organization authorize its Board of Directors to issue up to 100,000 shares of preferred stock in one or more series, to determine and fix certain relative rights and preferences of the shares of any series, to fix the number of shares constituting any such series, and to fix the designation of any such series, without further vote or action by its shareholders. The Company has no present plans to issue shares of preferred stock. In 1998, the Company designated a series of Preferred Stock (the Series A Preferred Stock ) to be issued upon the exercise of Rights issued under the Company s Shareholder Rights Plan. Under the Shareholder Rights Plan, adopted in 1998 and reissued upon its expiration in April 2008, its stockholders are entitled to purchase shares of its Series A Preferred Stock under certain circumstances. These circumstances include the purchase of 15% or more of the outstanding shares of common stock by a person or group, or the announcement of a tender or exchange offer to acquire 15% or more of the outstanding common stock.

**Common Stock and Warrant Offering**

On May 28, 2002, the Company closed on a private placement offering of common stock and warrants. A total of 1,115,000 shares were sold to accredited investors at a price of $17.64 each. In addition, warrants to purchase an additional 295,475 shares of common stock at a price of $23.52 were issued. Proceeds to the Company approximated $18.4 million, net of approximately $1.3 million of issuance costs of which $3.1 million was assigned to the warrants issued. The warrants were immediately vested and had a five-year life which expired in May of 2007. Due to certain conversion features of these warrants that provided that the holder could opt for a cash settlement in certain instances, including a merger, a sale of all or substantially all of the Company s assets, or a tender offer or exchange offer of shares of the Company s stock, a liability equal to the Black-Scholes valuation of the warrants at the deal closing date was recorded on the Company s balance sheet. The mark to market change in the warrants valuation of ($11,000), ($2,270,000), and $6,094,000, was recorded as other (income) expense for the years ended March 31, 2008, March 31, 2007, and March 31, 2006, respectively. The liability of $634,000 representing the fair market value of outstanding warrants at period end is recorded as a current liability at March 31, 2007. In May of 2007, all remaining warrants were exercised and no liability for these warrants remains at March 31, 2008.

During fiscal 2008, 2007 and 2006, warrants to purchase 21,625, 35,450 and 78,825 shares of common stock were exercised resulting in total proceeds received of $509,000, $834,000 and $1,854,000, respectively. In addition, in fiscal 2006 the Company issued 61,998 shares of common stock upon the cashless exercise of warrants to purchase 85,475 shares of common stock. The fair market value of the warrants at the date of exercise totaled $623,000, $1,134,000 and $8,193,000 in fiscal 2008, 2007 and 2006, respectively. The cash proceeds and the fair value of the liability were recorded as additional paid in capital at March 31, 2008 and March 31, 2007.

**Share Repurchase Program**

On May 17, 2007, the Board of Directors approved a Stock Repurchase Program which authorized the Company to repurchase up to $35 million of shares of its common stock from time to time on the open market. During the fiscal year ended March 31, 2008, the Company repurchased 473,303 shares of common stock at an average price of $53.17. As of March 31, 2008, the maximum dollar value of shares that may yet be purchased under the program totaled $9,832,000.

On May 8, 2008 the Board of Directors approved an additional Stock Repurchase Program which authorizes the Company to repurchase up to $35 million of shares of its common stock from time to time on the open market.

**Common Stock Dividends**

On May 21, 2007, the Company announced a quarterly dividend plan for fiscal year 2008. Three quarterly dividends of $0.20 per common share each were declared and paid during fiscal year 2008. On May 13, 2008, the Company declared another quarterly dividend of $0.20 for holders of record on May 19, 2008 to be paid June 6, 2008.

**Stock Option and Other Compensation Plans**

The Company has various stock option and other compensation plans for directors, officers, and employees. The Company had the following stock option plans outstanding as of March 31, 2008: the 1995 Combination Plan, the 1997 Non-Qualified Option Plan, the 1998 Non-Qualified Option Plan, the 1999 Combination Plan, the 2000 Combination Plan, the 2002 Combination Plan, the 2003 Stock Plan for Non-Employee Directors and the 2005 Equity and Incentive Plan. There are 3,480,000 shares authorized under these plans. Vesting periods are at the discretion of the Board of Directors and typically range between one and three years. Certain of the options granted vest upon the achievement of certain performance based goals as well as service time incurred. Options under these plans are granted at fair market value and have a term of five or ten years from the date of grant.

***Stock Options:*** A summary of the Company s stock option activity is as follows:

| | 2008 | | 2007 | | 2006 | |
|---|---|---|---|---|---|---|
| | Number of Shares | Weighted Average | Number of Shares | Weighted Average | Number of Shares | Weighted Average |

| | | Exercise Price | | Exercise Price | | Exercise Price |
|---|---|---|---|---|---|---|
| Options outstanding, beginning of year | 887,573 | $ 37.43 | 878,470 | $ 36.79 | 1,065,964 | $ 20.66 |
| Options granted | 76,970 | 63.21 | 60,670 | 48.23 | 378,010 | 55.23 |
| Options exercised | (127,635) | 23.73 | (31,680) | 31.23 | (554,954) | 18.23 |
| Options canceled or expired | (8,845) | 59.71 | (19,887) | 51.94 | (10,550) | 44.44 |
| Options outstanding, end of year | 828,063 | $ 41.70 | 887,573 | $ 37.43 | 878,470 | $ 36.79 |
| Options exercisable, end of year | 712,356 | $ 38.74 | 639,219 | $ 33.88 | 265,778 | $ 18.80 |
| Options available for grant | 145,691 | | 320,865 | | 440,835 | |
| Weighted average fair value per share of options granted during the year | | $ 22.60 | | $ 20.09 | | $ 20.99 |

The following summarizes certain data for options outstanding and exercisable at March 31, 2008:

| | Number of Shares | Range of Exercise Prices | Weighted Average Exercise Price | Weighted Average Remaining Contractual Life |
|---|---|---|---|---|
| Options outstanding: | 169,203 | $6.50 $20.00 | $ 11.91 | 4.88 |
| | 97,563 | 20.01 30.00 | 27.56 | 6.39 |
| | 64,532 | 30.01 40.00 | 38.93 | 6.68 |
| | 126,866 | 40.01 50.00 | 45.74 | 7.58 |
| | 201,391 | 50.01 60.00 | 53.64 | 7.28 |
| | 168,508 | 60.01 66.45 | 63.54 | 7.84 |
| | 828,063 | | $ 41.70 | 6.80 |
| | | | | |
| Options exercisable: | 169,203 | $6.50 $20.00 | $ 11.91 | |
| | 97,563 | 20.01 30.00 | 27.56 | |
| | 64,532 | 30.01 40.00 | 38.93 | |
| | 118,599 | 40.01 50.00 | 45.97 | |
| | 184,254 | 50.01 60.00 | 53.69 | |
| | 78,205 | 60.01 66.45 | 64.39 | |
| | 712,356 | | $ 38.74 | |

The total intrinsic value, representing the difference between market value on the date of exercise and the option price, of stock options exercised during fiscal 2008, 2007 and 2006 was $4,892,000, $904,000 and $29,650,000, respectively. Nonvested stock option awards are subject to the risk of forfeiture until the fulfillment of specified conditions. As of March 31, 2008 there was $1,426,000 of total unrecognized compensation cost related to nonvested stock option awards granted under the Company s stock plans. This cost is expected to be recognized over a weighted average period of three years.

The Company realizes a tax deduction upon the exercise of non-qualified stock options and disqualifying dispositions of incentive stock options due to the recognition of compensation expense in the calculation of its taxable income. The amount of the compensation recognized for tax purposes is based on the difference between the market value of the common stock and the option price at the date the options are exercised and/or sold. These tax benefits are credited to additional paid-in capital if it is considered more likely than not that they will be realized. No tax benefits were recorded in fiscal 2005 as available tax benefits of $5,115,000 were offset by valuation allowances in accordance with SFAS 109. During fiscal 2008, 2007 and 2006, a tax benefit of $1,350,000, $544,000 and $10,515,000, respectively, was recorded to additional paid-in capital for exercises and/or sales of stock options or stock and an additional $7,025,000 was recorded in fiscal 2006 for prior year exercises and/or sales upon the reversal of the valuation allowance on deferred tax assets.

On April 22, 2005 American Science and Engineering, Inc. announced that its Board of Directors had accelerated the vesting of certain unvested stock options previously awarded to employees. The accelerated options were issued under various equity incentive plans maintained by the Company. The acceleration of outstanding unvested options was immediately effective on a fully-vested basis. Options held by the Chief Executive Officer, the Chief Financial Officer, all other members of management, and any other employees participating in incentive or commission compensation plans were not included in the acceleration plan. Options held by members of the Board of Directors were also excluded from the vesting acceleration. Options to purchase approximately 193,553 shares of common stock were subject to acceleration. The Company effected this acceleration in order to provide a deserved reward to relevant employees for their significant contributions in connection with the outstanding performance of the Company. The Board of Directors determined that such action was also in the best interests of the shareholders as it believed that such plan would engender loyalty, promote equity ownership, and encourage increased future performance by the subject employee population. The Company recorded compensation expense of $64,000 during the year ended March 31, 2006 related to these accelerated options for options exercised by individuals who terminated employment prior to the original option vesting date.

***Restricted Stock and Restricted Stock Units:*** The Company has instituted long term incentive plans for certain key employees. These plans call for the issuance of restricted stock which vest upon the achievement of certain performance based goals as well as service time incurred. Restricted stock and restricted stock units may also be granted to other employees with vesting periods that range from one to three years. In addition, annually on January 10th the Board of Directors is granted restricted stock. These restricted stock shares vest on a pro-rata basis on

service time incurred in the upcoming calendar year. The fair values of these restricted stock awards are equal to the market price per share of the Company s common stock on the date of grant.

Nonvested restricted stock and stock unit awards are subject to the risk of forfeiture until the fulfillment of specified conditions. As of March 31, 2008 there was $4,480,000 of total unrecognized compensation cost related to nonvested restricted stock and stock unit awards granted under the Company s stock plans. This cost is expected to be recognized over a three year period.

A summary of the Company s restricted stock and stock unit activity is as follows:

| | 2008 | | 2007 | | 2006 | |
|---|---|---|---|---|---|---|
| | Number of Shares | Weighted Average Exercise Price | Number of Shares | Weighted Average Exercise Price | Number of Shares | Weighted Average Exercise Price |
| Restricted stock and units outstanding, beginning of year | 49,538 | $ 54.52 | 23,125 | $ 54.92 | 4,889 | $ 34.52 |
| Granted | 72,970 | 60.80 | 49,538 | 54.52 | 24,077 | 55.32 |
| Vested | (9,807) | 56.77 | (23,125) | 54.92 | (5,841) | 39.50 |
| Forfeited | (2,400) | 60.62 | | | | |
| Restricted stock and units outstanding, end of year | 110,301 | $ 58.34 | 49,538 | $ 54.52 | 23,125 | $ 54.92 |

**7. BUSINESS SEGMENT INFORMATION**

In accordance with the provisions of SFAS No. 131 Disclosures about Segments of an Enterprise and Related Information, the Company has determined that it has only one operating segment, the X-ray product segment. This includes X-ray detection and imaging products used primarily for the detection of illegal drugs, weapons and explosives, and smuggled goods. The equipment is purchased by sophisticated government and commercial clients focused on the detection of organic material in complex backgrounds and the ability to see the contents of containers with precision.

**Geographical Data**

All of the Company s export sales originate from the United States. At March 31, 2008, approximately 4.3% of the Company s assets were in foreign countries. The majority of these foreign assets were inventory in international depots for field replacements or systems shipped internationally but not accepted by fiscal year end.

The following table shows the breakdown of net sales and contract revenues to foreign and domestic customers and the major regions of international activity based upon customer country of domicile:

***Net Sales and Contract Revenues***

| (Dollars in thousands) | Fiscal Year 2008 | | 2007 | | 2006 | |
|---|---|---|---|---|---|---|
| Domestic | $ 107,021 | 64% | $ 111,335 | 73% | $ 141,491 | 86% |
| International | 59,712 | 36% | 41,851 | 27% | 22,113 | 14% |
| Net Sales and Contract Revenues | $ 166,733 | 100% | $ 153,186 | 100% | $ 163,604 | 100% |
| Percent of International Revenue by Major Region: | | | | | | |

| | | | |
|---|---|---|---|
| Middle East & Africa | 70% | 66% | 50% |
| Pacific Rim | 14% | 20% | 37% |
| Europe | 14% | 14% | 11% |
| All Other | 2% | % | 2% |

***Major Customers:*** Sales to major customers (representing in excess of 10% of consolidated revenues) consisted of the following:

*Fiscal 2008*: $20,325,000 and $16,602,000, respectively to two customers.

*Fiscal 2007*: $48,142,000 and $22,894,000, respectively, to two customers.

*Fiscal 2006*: $48,722,000 and $43,485,000, respectively, to two customers.

Domestically, the Company s primary client base is comprised of agencies of the U.S. Government. Approximately 55%, 70%, and 77%, of the Company s sales in fiscal 2008, 2007, and 2006 respectively, were derived from either (i) contracting directly with the U.S. Government, or (ii) contracting with contractors working directly with the U.S. Government. Certain of the Company s contracts with the U.S. Government provide the U.S. Government with the standard unilateral right to terminate these contracts for convenience. To date, the Company has not experienced any material losses as a result of this contractual provision.

One customer at March 31, 2008 had accounts receivable balances representing in excess of 10% of consolidated accounts receivable. This customer, an agency of the U.S. Government, had receivables totaling $6,726,000 (24%) at March 31, 2008. Two customers at March 31, 2007 had accounts receivable balances representing in excess of 10% of consolidated accounts receivable.

These customers, both agencies of the U.S. Government, had receivables totaling $6,322,000 (26%) and $3,535,000 (14%) at March 31, 2007.

Included in unbilled costs and fees at March 31, 2008 was $5,783,000 related to five customers, which is expected to be billed and collected during fiscal 2009. Included in unbilled costs and fees at March 31, 2007 was $5,074,000 related to three customers, which was billed and collected during fiscal 2008.

**8. SALES OF ASSETS**

In January 2005, the Company completed an agreement to sell certain assets, comprised of inventory, fixed assets, intellectual property, and certain revenue producing contracts of its High Energy Systems Division to Accuray, Incorporated ( Accuray ). The sales price for these assets totaled $8,300,000 of which $5,500,000 was received in cash and $2,800,000 in the form of a promissory note, $2,000,000 of which was secured by a letter of credit. The note receivable bore an interest rate of 7% and matured in January of 2006. The Company recognized a gain on the sale of these assets of $5,442,000, which was included in income from operations in the year ended March 31, 2005. During fiscal 2006, upon expiration of the warranty period for material sold, the unused warranty reserve of $336,000, established at the time of sale, was reversed and is included as additional gain on sale of assets for the year ended March 31, 2006. In conjunction with this sale, certain employees of the High Energy Systems Division were employed by Accuray and the Company entered into a license agreement and a supply agreement for linear accelerators with Accuray.

**9. COMMITMENTS AND CONTINGENCIES**

**Deferred Compensation**

The Company had an unfunded deferred compensation plan, originally adopted in 1976 and amended at various times, for certain retired directors. This plan is closed such that no other directors are qualified for compensation under this plan. This plan provides for periodic payments beginning at age 65, the amount of which depends on the director s length of service. The Company paid $17,000 per year in the years ended March 31, 2008, 2007 and 2006 under this deferred compensation plan. At March 31, 2008 and March 31, 2007, $61,000 and $69,000, respectively, was accrued for under this plan.

**Lease Liability**

In conjunction with the sale of the High Energy Systems division in fiscal 2005 (see Note 8), the lease for the California operations of the High Energy Systems Division was assigned to Accuray. The Company remains secondarily liable for the remaining lease payments in the event of default by Accuray during the lease term which expires in February 2011. Remaining lease payments at March 31, 2008 totaled $1,140,000. No accrual for this contingent liability has been recorded at March 31, 2008 as payment of this expense is considered remote.

**Litigation**

On October 3, 2007, the Company commenced litigation in the United States District Court for the Eastern District of Virginia against AutoClear, LLC, and its affiliates Control Screening, LLC, and Scan-Tech Security, LP, for infringement of the Company s United States Patent No. 5,313,511, seeking damages and injunctive relief. The parties have recently begun discovery in this matter.

On September 4, 2007, the Company received a notice from the United States Environmental Protection Agency (the EPA ) that it may potentially be liable for certain costs related to the proposed clean-up at the Sutton Brook Disposal Area Superfund Site located in Tewksbury, Massachusetts. The Company is one of approximately 45 entities identified by the EPA as a Potentially Responsible Party ( PRP ) in connection with alleged historical disposal of waste materials for the period from 1958 through the mid-1980s, the timeframe under investigation by the EPA. The Company has denied liability, and has initiated participation in the global negotiation and settlement processes with the EPA and with other PRPs. Such negotiation processes are ongoing. The Company is not able to estimate any potential cost associated with this claim.

The Company is also subject to various legal proceedings and claims that arise in the ordinary course of business. At the present time, it is not possible to predict the outcome of these matters; however, the Company currently believes that resolving these matters will not have a material adverse impact on its financial condition, results of operations or cash flows.

**Purchase Commitments**

In the normal course of business, the Company enters into purchase orders with its vendors for the purchase of materials or services to meet its production needs. At March 31, 2008, the Company had $29,965,000 of open purchase orders which are

expected to be fulfilled primarily within the next 2 years. Certain single source vendors or vendors producing custom material require significant lead times from order to delivery of their material. Should the demand for the Company s products decline significantly, or should there be a significant shift in the mix of products being demanded, the Company may incur cancellation charges related to these commitments, that could be material to the Company s results of operations. To date, the Company has not experienced any material losses related to cancellation penalties.

**Employment Agreements**

On September 15, 2005, the Company s Board of Directors approved a Change of Control and Termination for Convenience program for the Company s Chief Executive Officer and other members of the Company s executive staff, including its Chief Financial Officer. The program was amended on February 8, 2007 by the Company s Board of Directors. Under this program, as amended, the Company s Chief Executive Officer, in the event termination pursuant to a change of control, is eligible to receive a payment equal to three times his average base salary plus his annual target bonus, the continuation of health benefits for a period of three years and the vesting of all options and restricted stock. In the event of qualifying termination not pursuant to a change of control, the Chief Executive Officer is eligible for a payment equal to two times his average base salary and the continuation of health benefits for a period of eighteen months. The Company s other executive staff, in the event of a change of control, are eligible to receive a payment equal to two year s average base salary plus his or her annual target bonus, the continuation of health benefits for a period of three years and the vesting of all options and restricted stock. In the event of qualifying termination not pursuant to a change of control, the members of the executive staff are eligible to receive a payment equal to one times his or her average base salary and the continuation of health benefits for one year.

**Retirement Savings Plan**

The Company maintains a 401(k) Retirement Savings Plan for all employees. Employees are eligible to participate on the first of the month following date of employment. The Plan is funded by elective employee contributions of up to 100% of their compensation up to IRS limits. Under the Plan the Company at its discretion matches 50% of the first 6% of employee contributions for each participant in the form of Company common stock. Expenses under the Plan, consisting of Company contributions which were made in Company stock and Plan administrative expenses paid by the Company, totaled $731,000, $660,000, and $520,000, in 2008, 2007, and 2006 respectively.

**AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARY**

**UNAUDITED QUARTERLY CONSOLIDATED FINANCIAL DATA**
**FOR THE YEARS ENDED MARCH 31, 2008 AND MARCH 31, 2007**

| | 2008 by quarter | | | | 2007 by quarter | | | |
|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th |
| | (In thousands, except per share amounts) | | | | | | | |
| Net sales and contract revenues | $ 44,471 | $ 37,627 | $ 42,615 | $ 42,020 | $ 29,882 | $ 29,588 | $ 47,797 | $ 45,919 |
| Gross profit | 17,401 | 14,078 | 15,184 | 13,087 | 13,497 | 13,529 | 21,938 | 17,575 |
| Operating income | 8,161 | 5,454 | 4,427 | 3,181 | 5,553 | 6,067 | 12,559 | 8,040 |
| Net income | 6,172 | 4,515 | 4,002 | 2,789 | 5,995 | 4,753 | 8,072 | 5,790 |
| Net income per share | | | | | | | | |
| Basic | $ 0.67 | $ 0.49 | $ 0.44 | $ 0.31 | $ 0.66 | $ 0.52 | $ 0.89 | $ 0.63 |
| Diluted | $ 0.66 | $ 0.48 | $ 0.43 | $ 0.30 | $ 0.41 | $ 0.49 | $ 0.86 | $ 0.60 |

**SIGNATURES**

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

AMERICAN SCIENCE AND ENGINEERING, INC.

DATED: June 12, 2008 By: /s/ ANTHONY R. FABIANO

Anthony R. Fabiano
President and Chief Executive Officer

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 and in the capacities and on the dates indicated:

| Signature | Title | Date |
|---|---|---|
| /s/ ANTHONY R. FABIANO<br>Anthony R. Fabiano | Director and President and Chief Executive Officer (Principal Executive Officer) | June 12, 2008 |
| /s/ KENNETH J. GALAZNIK<br>Kenneth J. Galaznik | Chief Financial Officer and Treasurer (Principal Financial Officer) | June 12, 2008 |
| /s/ DENIS R. BROWN<br>Denis R. Brown | Chairman of the Board, Director | June 12, 2008 |
| /s/ ROGER P. HEINISCH<br>Roger P. Heinisch | Director | June 12, 2008 |
| /s/ HAMILTON W. HELMER<br>Hamilton W. Helmer | Director | June 12, 2008 |
| /s/ ERNEST J. MONIZ<br>Ernest J. Moniz | Director | June 12, 2008 |
| /s/ MARK S. THOMPSON<br>Mark S. Thompson | Director | June 12, 2008 |
| /s/ CARL W. VOGT<br>Carl W. Vogt | Director | June 12, 2008 |

**EXHIBIT INDEX**

| Exhibit Number | | Description of Exhibit (and Statement) of Incorporation by Reference, If Applicable) | Page Number (If Filed) |
|---|---|---|---|
| (3)(a) | | Restated Articles of Organization of the Company (filed as an Exhibit to the Company s Annual Report on Form 10-K for the year ended September 30, 1967 and incorporated herein by reference) | |
| (3)(b) | | Articles of Amendment to Restated Articles of Organization of Company (filed as Exhibit 2(a)(ii)(B) to the Company s Registration Statement on Form S-7, No. 2-56452, filed May 25, 1976 and incorporated herein by reference) | |
| (3)(c) | | Articles of Amendment to Restated Articles of Organization of Company (filed as Exhibit 12 to the Company s Annual Report on Form 10-K for the year ended March 31, 1976, and incorporated herein by reference) | |
| (3)(d) | | By-laws of Company, as amended (filed as Exhibit 2(a)(iii) to the Company s Registration Statement on Form S-7, No. 2-56452, filed May 25, 1976 and incorporated herein by reference) | |
| (3)(e) | | Amended and Restated By-laws of the Company (filed as Exhibit 3.2 to the Company s Quarterly Report on Form 10-Q for the quarter ended December 31, 2003, and incorporated herein by reference) | |
| (4) | | Shareholders Rights Plan (filed as Exhibit to the Company s filing on Form dated, 1992 and incorporated herein by references) | |
| (4)(a) | | Shareholder Rights Agreement, dated April 17, 1998, between the Company and American Stock Transfer & Trust Company (filed as Exhibit 1 to the Company s filing on Form 8-A12B filed on April 15, 1998 and incorporated herein by reference) | |
| (4)(c) | | Rights Agreement, dated April 17, 2008, between the Company and American Stock Transfer & Trust Company (filed as Exhibit 4.1 to the Company s filing on Form 8-A12B filed on April 18, 2008 and incorporated herein by reference) | |
| (10)(b)(xii) | | 1997 Non-Qualified Stock Option Plan (filed as Exhibit 99 to the Company s Registration Statement on Form S-8, File No. 333-27927, filed on May 28, 1997 and incorporated herein by reference) | |
| (10)(b)(xiii) | | 1998 Non-Qualified Stock Option Plan (filed as Exhibit (10)(b)(xiii) to the Company s Annual Report on Form 10-K for the year ended March 31, 1998 and incorporated herein by reference) | |
| (10)(c)(i) | | Lease of Billerica property (filed as Exhibit 10(c) to the Company s Annual Report on Form 10-K for the year ended March 31, 1995 and incorporated herein by reference) | |
| (10)(c)(ii) | | Amendment to Lease of Billerica property (filed as Exhibit 10(c)(ii) to the Company s Annual Report on Form 10-K for the year ended March 28, 1997 and incorporated herein by reference) | |
| (10)(c)(iv) | | 1999 Combination Stock Option Plan (filed as Exhibit 99 to the Company s Registration Statement on Form S-8, File No. 333-91801, filed on November 30, 1999 and incorporated herein by reference) | |
| (10)(c)(v) | | 2000 Combination Stock Option Plan (filed as Exhibit A to the Definitive Proxy Statement on Schedule 14A filed on August 18, 2000 and incorporated herein by reference) | |
| (10)(c)(vi) | | 2002 Combination Stock Option Plan (filed as Exhibit 99.1 to the Company s Registration Statement on Form S-8, No. 333-102338, filed on January 3, 2003 and incorporated herein by reference) | |
| (10)(c)(xv) | | Lease of Mountain View, California facility for High Energy Systems Division (filed as Exhibit 10(c)(xv) to the Company s Quarterly Report on Form 10-Q for the quarter ended June 30, 2003 and incorporated herein by reference) | |
| (10)(c)(xvi) | * | Employment Offer Letter between the Company and Anthony R. Fabiano dated August 21, 2003 (filed as Exhibit 10(c)(xv) to the Company s Quarterly Report on Form 10-Q for the quarter ended September 30, 2003 and incorporated herein by reference) | |
| (10)(c)(xvii) | | Second Amendment of Lease of 829 Middlesex Turnpike, Billerica, Massachusetts (filed as Exhibit 10(c)(vii) to the Company s Quarterly Report on Form 10-Q for the quarter ended | |

| | |
|---|---|
| | December 31, 2004 and incorporated herein by reference) |
| (10)(c)(xviii) | Amendment of 2002 Combination Stock Option Plan (filed as Exhibit 99.1 to the Company s Registration Statement on Form S-8, No. 333-102338, filed on January 3, 2003 and incorporated herein by reference) |
| (10)(c)(xix) | 2003 Stock Plan for Non-Employee Directors (filed as Exhibit 4.1 to the Company s Registration Statement on Form S-8, File No. 333-117843, filed on July 30, 2004 and incorporated herein by reference) |
| (10)(c)(xx) | Amendment to 2003 Stock Plan for Non-Employee Directors (filed as Exhibit 10(c)(xx) to the Company s Annual Report on Form 10-K for the year ended March 31, 2005 and incorporated herein by reference) |
| (10)(c)(xxi) | 2005 Equity and Incentive Plan (filed as Exhibit 4.1 to the Company s Registration Statement on Form S-8, No. 333-129851, filed on November 21, 2005 and incorporated herein by reference) |

| | | |
|---|---|---|
| (10)(c)(xxii) | * | Change in Control & Severance Benefit Agreement between the Company and Anthony Fabiano dated November 3, 2005 (filed as Exhibit 10(c)(xxii) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| (10)(c)(xxiii) | * | Form of Change in Control & Severance Benefit Agreement between the Company and Named Executives (filed as Exhibit 10(c)(xxiii) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| (10)(c)(xxiv) | | Form of Restricted Stock Agreement (Performance) under the AS&E 2005 Equity and Incentive Plan (filed as Exhibit 10(c)(xxiv) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| (10)(c)(xxv) | | Form of Stock Option Agreement (Performance) under the AS&E 2005 Equity and Incentive Plan (filed as Exhibit 10(c)(xxv) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| (10)(c)(xxvi) | | Form of Stock Option Agreement (ISO) under the AS&E 2005 Equity and Incentive Plan (filed as Exhibit 10(c)(xxvi) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| (10)(c)(xxvii) | | Form of Stock Option Agreement (NQ) under the AS&E 2005 Equity and Incentive Plan (filed as Exhibit 10(c)(xxvi) to the Company s Annual report on Form 10-K for the year ended March 31, 2006 and incorporated herein by reference) |
| 10(c)(xxviii) | | Third Amendment of Lease of 829 Middlesex Turnpike, Billerica, Massachusetts (filed as Exhibit 10(c)(xxviii) to the Company s Annual Report on Form 10-K for the year ended March 31, 2007 and incorporated herein by reference) |
| 10(c)(xxix) | * *** | Employment Agreement between the Company and Anthony R. Fabiano dated February 2, 2008 (filed herewith) |
| (10)(d)(xi) | | Loan and Security Agreement between the Company and Silicon Valley Bank East dated August 11, 2003 (filed as Exhibit 10(d)(xi) to the Company s Quarterly Report on Form 10-Q for the quarter ended September 30, 2003 and incorporated herein by reference) |
| (10)(d)(xii) | | Export Import Bank Loan and Security Agreement between the Company and Silicon Valley Bank East dated August 11, 2003 (filed as Exhibit 10(d)(xii) to the Company s Quarterly Report on Form 10-Q for the quarter ended September 30, 2003 and incorporated herein by reference) |
| (10)(d)(xiii) | ** | Asset Purchase Agreement between Accuray Incorporated and the Company dated December 11, 2004 (filed as Exhibit 10(d)(xiii) to the Company s Annual Report on Form 10-K for the year ended March 31, 2005 and incorporated herein by reference) |
| (10)(d)(xix) | | Third Loan Modification Agreement between Silicon Valley Bank and the Company dated November 15, 2006 (filed as Exhibit 10(d)(xiii) to the Company s Quarterly Report on Form 10-Q for the quarter ended December 31, 2006 and incorporated herein by reference) |
| (21.1) | | Identification of Company s subsidiary, AS&E Global, Inc., incorporated in Massachusetts (filed as Exhibit 22.1 to the Company s Annual Report on Form 10-K for the year ended March 31, 2003 and incorporated herein by reference) |
| (23.1) | | Consent of Independent Registered Public Accounting Firm |
| (31.1) | | Certification of Chief Executive Officer pursuant to Rule 13a-14(a) |
| (31.2) | | Certification of Chief Financial Officer pursuant to Rule 13a-14(a) |
| (32.1) | | Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| (32.2) | | Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |

* Contract with Management

** The Registrant agrees to furnish a supplemental copy of the schedules to this agreement to the SEC upon request

*** Filed herewith