

2011



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**OUR THIRD
RECORD-BREAKING
YEAR IN A ROW**

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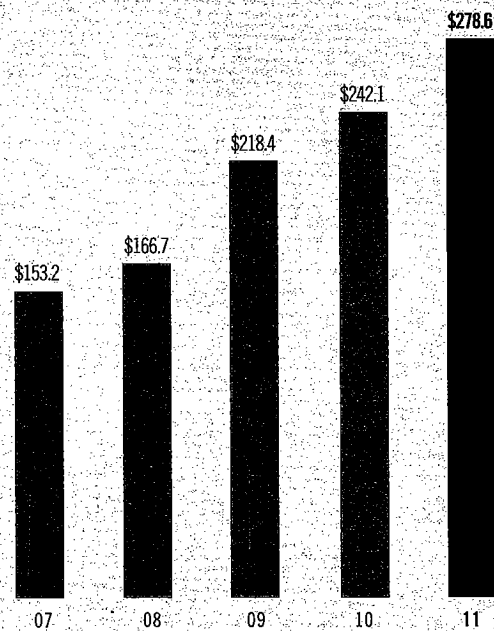
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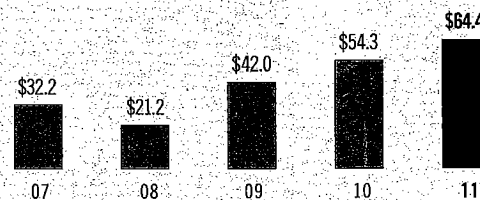
Z Portal® system: a breakout year

22 sold this year; 60 booked to date page 5

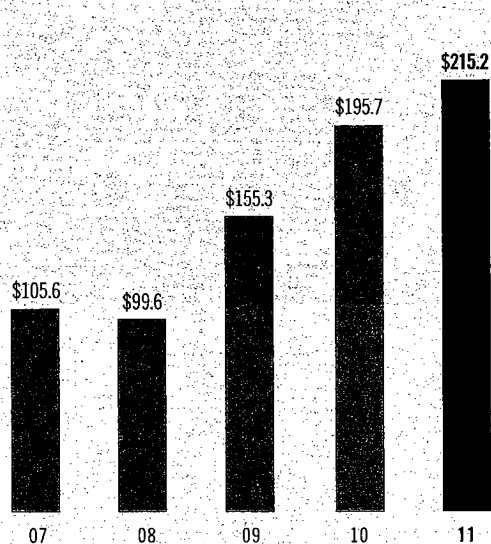
Photo: The Z Portal® system in use at a critical infrastructure facility in the Middle East, as seen from the control room.



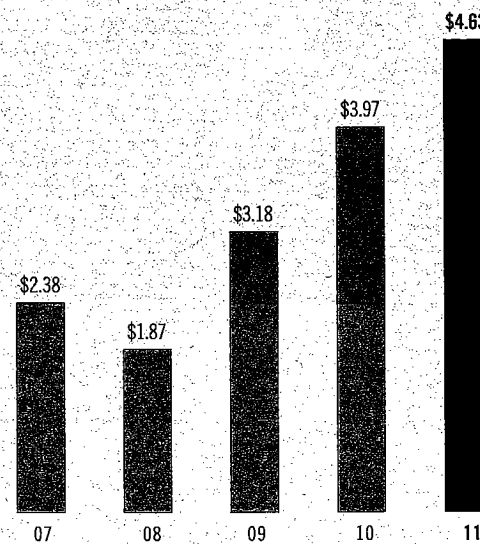
REVENUE (IN MILLIONS)



OPERATING INCOME (IN MILLIONS)



BACKLOG (IN MILLIONS)



EARNINGS PER SHARE

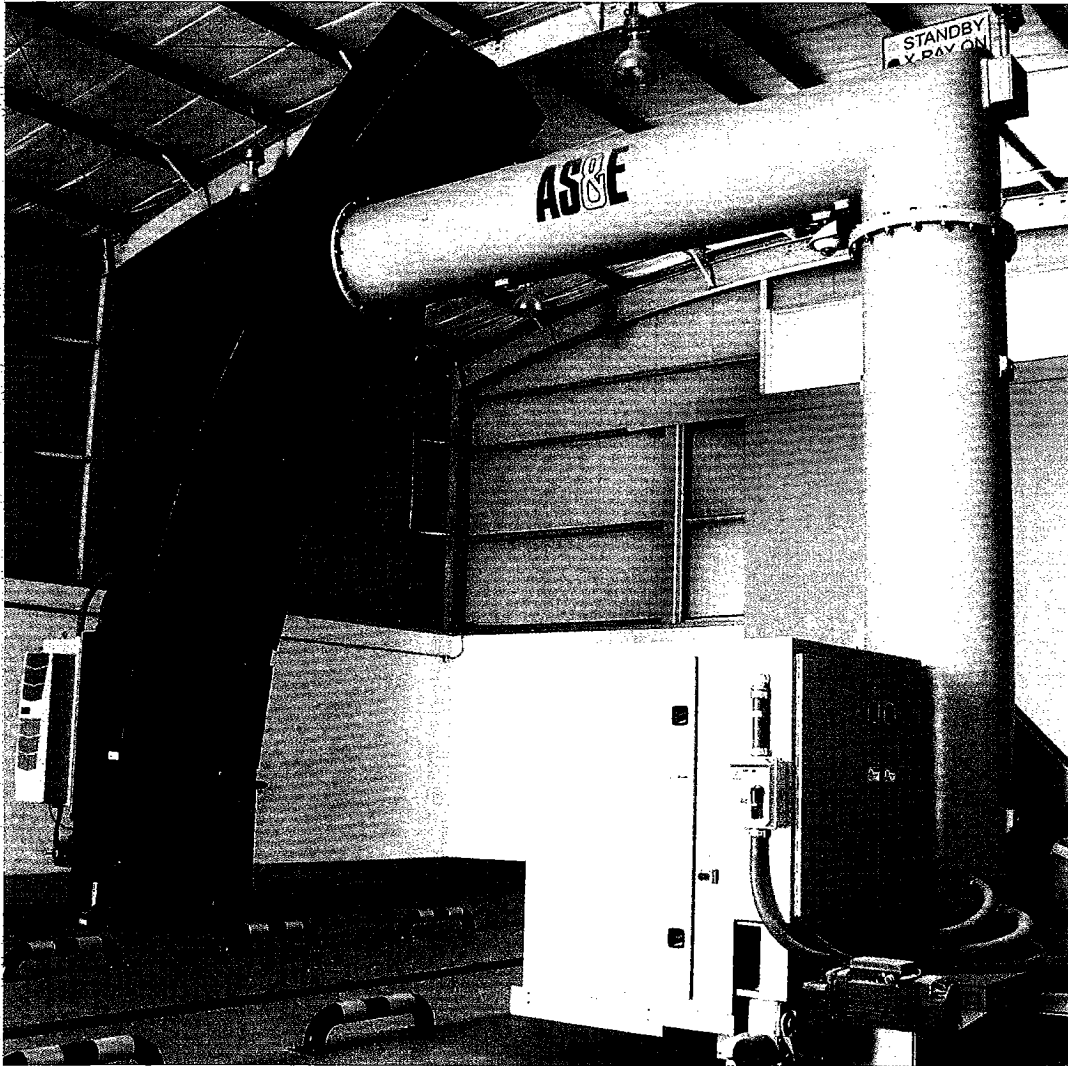
FISCAL YEAR 2011 FINANCIAL REVIEW

- AS&E reported **record revenue, net income, EPS, year-end backlog, and bookings** in FY 2011.
- **Revenue** for FY 2011 was \$278.6 million as compared to \$242.1 million for FY 2010, an increase of 15%.
- **Net income** for FY 2011 increased by 18% to \$42.8 million versus \$36.2 million in FY 2010 with **EPS** for FY 2011 of \$4.63, up 17% from FY 2010 of \$3.97.
- **Backlog** at year-end was \$215.2 million, up 10% over FY 2010 year-end backlog of \$195.7 million.
- **Bookings** for FY 2011 were \$298.1 million, an increase of 6% over FY 2010 bookings of \$282.5 million.
- **IRAD** investment increased 14% over FY 2010 to \$22.6 million, focused on developing new products, technologies and applications, and enhancing existing products.
- The Company paid four quarterly **dividends** of \$0.30 per share in FY 2011.
- AS&E appeared for the sixth consecutive year on The Boston Globe "**Globe 100**" list of top performing public companies in Massachusetts.

Three consecutive years of double-digit revenue growth. Four years in a row of record bookings. Records in revenue, net income, earnings per share, and year-end backlog.

In FY 2011, AS&E once again proved we are not only a leader and innovator in the X-ray inspection industry, but an exceptional company poised for further breakthroughs and success.

How did we do it? By following a proven roadmap of aggressive growth strategies, innovation, outstanding teamwork, and an unwavering focus on our mission.



The OmniView Gantry installed in the Middle East. The system creates a high-quality, detailed X-ray image (right).



What makes OmniView Gantry a best-in-class system?

A POWERFUL SYSTEM
THAT OFFERS
SUPERIOR IMAGING

The sleek, newly redesigned OmniView™ Gantry is a high-energy, high-performance cargo inspection system with the technology to penetrate 400-plus millimeters of steel that sets a new standard in the X-ray detection industry. Add optional Z Backscatter™ imaging, and it truly is best in its class for overall detection.

OmniView Gantry's unique design minimizes X-ray scatter in order to create high-quality, detailed X-ray

images, displayed on high-resolution monitors. Its state-of-the-art detectors provide superior image contrast and resolution that customers tell us surpasses anything they have seen before.

The first redesigned OmniView Gantry systems have been installed in the Middle East and have passed rigorous site acceptance testing in record time.

innovative systems

We continue to innovate our Z Backscatter and transmission systems to gain market share in the X-ray detection industry.



THE ZBV MILITARY TRAILER MEETS A COMPELLING NEED

With 36 systems booked in the fiscal year to the Department of Defense and to an international military organization, the ZBV™ Mil Trailer has proven itself time and again in theater, with customer reports that its bomb detection capability is saving lives.



ZBV seizures: explosives (left) and alcohol (right)

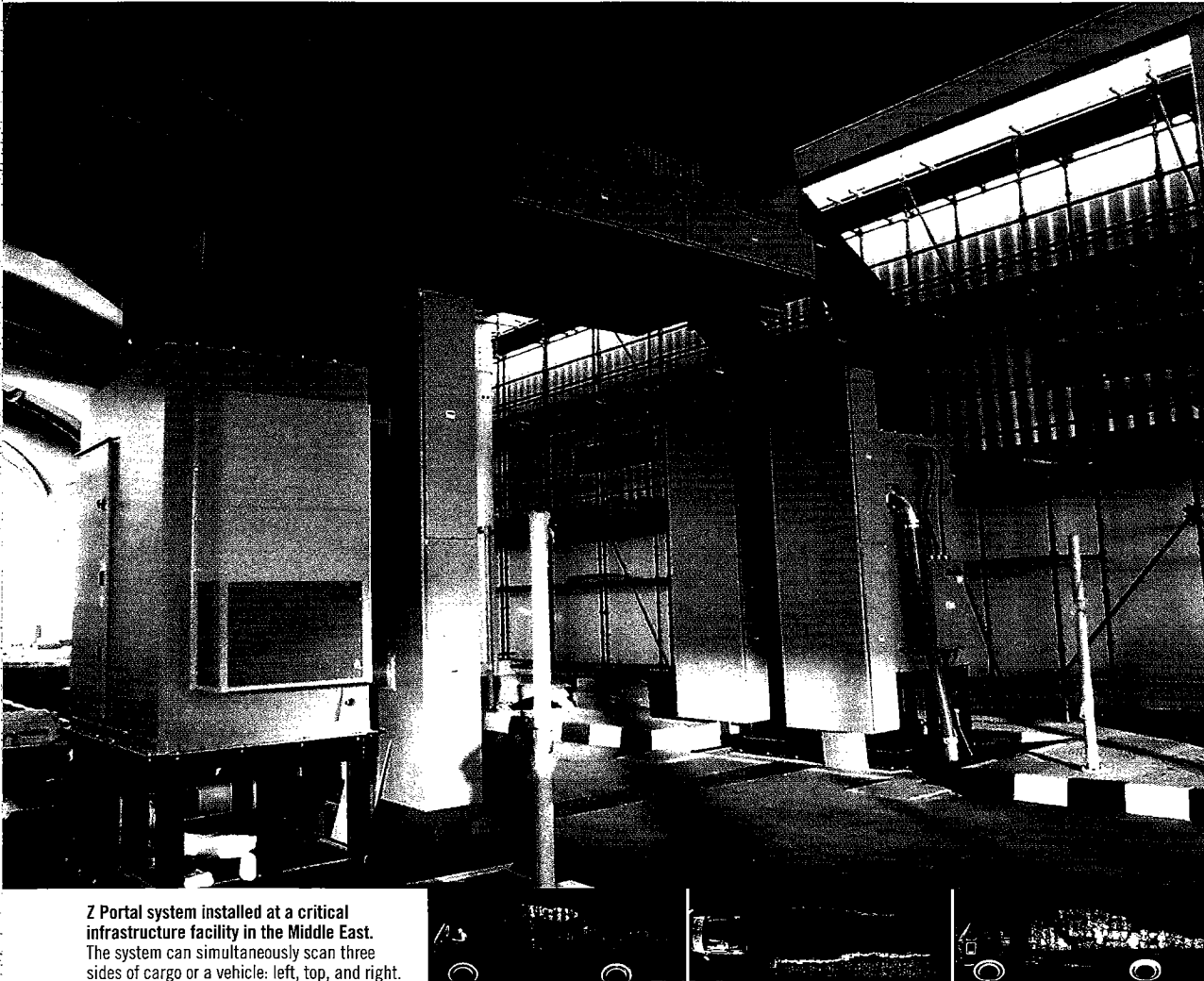


THE REMARKABLE ZBV SYSTEM: NUMBER ONE SELLING CARGO AND VEHICLE X-RAY INSPECTION SYSTEM

We are the innovators of, and experts in, Z Backscatter™ technology. Our Z Backscatter Van (ZBV) system validates this fact: More versatile than any other system on the market, the highly effective ZBV system is the mobile security system of choice around the world.

Since its introduction in 2004, over 550 ZBV systems have been sold to 108 customers in 51 countries, making the easy-to-use and highly mobile ZBV system the top-selling cargo and vehicle inspection system.

The bottom line is its effectiveness: The ZBV system has been credited with countless threat and contraband seizures. In fact, four of our customers reported cumulative seizures of 80,265 pounds of drugs and 812 smuggled humans since the beginning of FY 2011.



Z Portal system installed at a critical infrastructure facility in the Middle East. The system can simultaneously scan three sides of cargo or a vehicle: left, top, and right.

**60 Z PORTAL
SYSTEMS SOLD
TO DATE**

The year of the Z Portal system: Worldwide demand continues to grow

In FY 2011, AS&E's Z Portal® system had a breakout year, with 22 systems sold — 60 since its introduction.

The high-throughput, highly effective Z Portal system is used in a wide range of applications, including port and border security for Abu Dhabi Customs and U.S. DHS, critical infrastructure protection at high-threat facilities and a water treatment plant, vehicle screening

for airport security in Latin America, and military base security for NATO's C3 Agency.

Customers find that the Z Portal system is uniquely capable of meeting security requirements while ensuring that commerce keeps flowing because it is the only multi-view, drive-through vehicle screening system available to scan cars, cargo containers, tankers, and large vehicles.

a trusted partner

SEC Mail Processing
Station
AUG 01 2011
WASHINGTON, DC

AS&E is committed to creating lasting relationships with customers, working together to provide the best solutions for their inspection needs.



DESIGNING SOLUTIONS FOR CUSTOMERS' NEEDS

Working collaboratively with Customs and Security organizations, AS&E has designed and implemented checkpoint solutions for high-volume traffic crossings at borders and critical infrastructure facilities. AS&E's project managers engage stakeholders to design the most effective detection solution for their application. Focused on our clients' requirements, AS&E project managers evaluate critical elements related to site layout, traffic flow, and the impact on future expansion to optimize the flow of cargo and vehicles at the checkpoints.



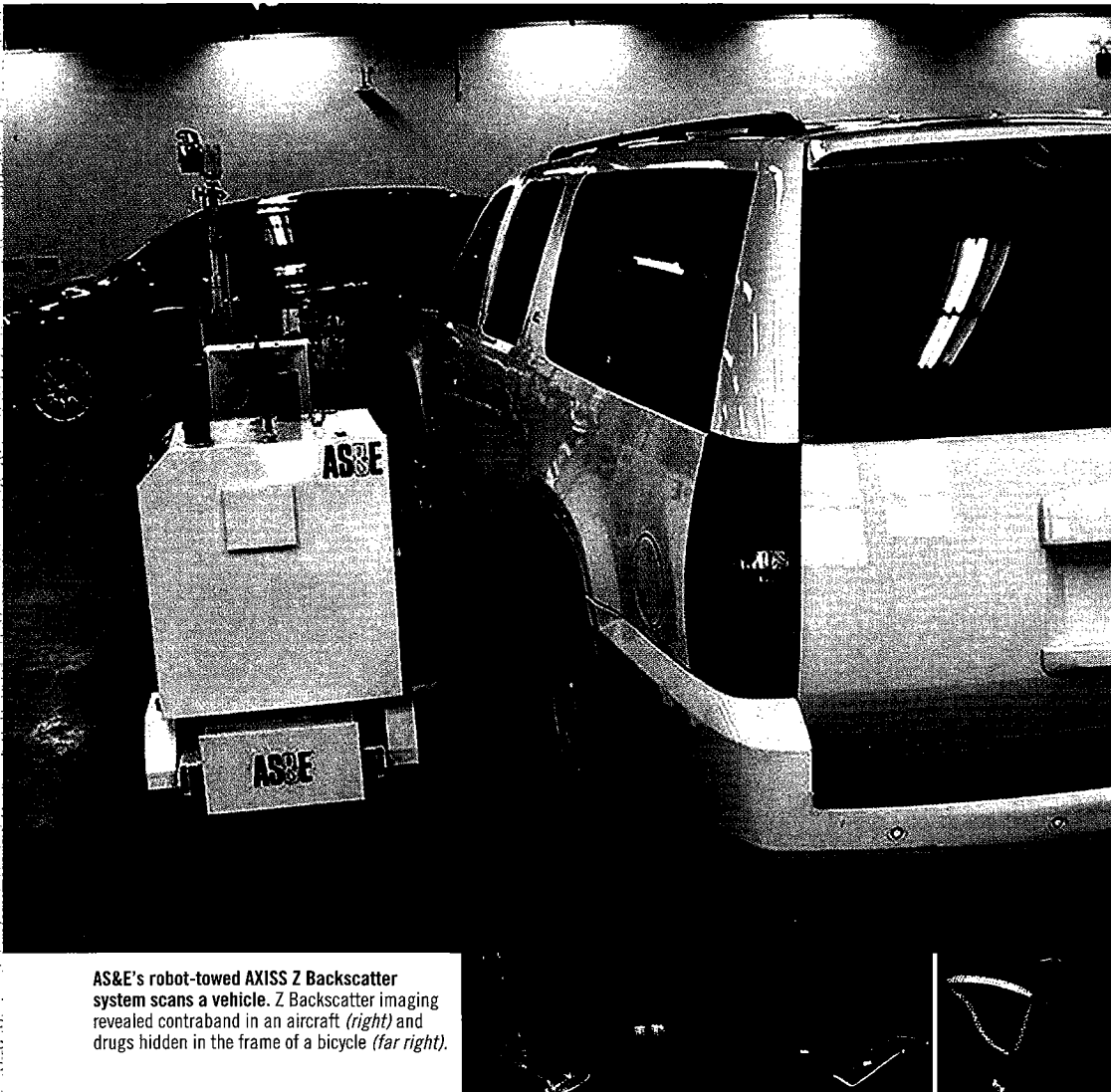
MEETING REAL-WORLD REQUIREMENTS WITH UNIQUE AND EFFECTIVE SOLUTIONS

Committed to supporting customers from purchase to installation and service, AS&E prides itself on working as a trusted partner. Before an order is placed, we assess a customer's requirements and work with them to determine the ideal inspection system for their security challenge.

When a new client, a Middle East Customs organization, approached AS&E about an urgent need to find explosive threats at seaports and border crossings, we responded immediately and delivered four ZBV systems without delay. Because of the time requirement involved in meeting the client's critical needs, training was expedited to ensure immediate deployment. And the exceptionally versatile and maneuverable ZBV systems were put to work as quickly as possible, screening trucks and vehicles for explosive threats.



AS&E cargo systems come in a variety of configurations — mobile (left), gantry (middle), and drive-through (right) — to meet our clients' real-world operational needs.



AS&E ADAPTS ITS
UNIQUE TECHNOLOGY
FOR NEW APPLICATIONS

AS&E's robot-towed AXISS Z Backscatter system scans a vehicle. Z Backscatter imaging revealed contraband in an aircraft (right) and drugs hidden in the frame of a bicycle (far right).

AXISS systems: miniaturized Z Backscatter imaging systems for bomb detection

Our newest innovations are the AXISS systems.* They are smaller and more flexible Z Backscatter™ systems and were created for bomb squads and explosive ordnance disposal teams for the detection of VBIEDs (vehicle-borne improvised explosive devices) and IEDs. Developed under a program with the Technical Support Working

Group (TSWG), the national interagency research and development program for combating terrorism requirements at home and abroad, the robot-towed AXISS can perform searches of vehicles and packages for contraband and explosive devices. It can also detect contraband hidden in unusual places, such as the support tubing on a bicycle (see X-ray image above right).



* In development under TSWG BAA 05-Q-4782 — Miniaturized X-ray Backscatter Imaging System. Approved for Public Release. Distribution is Unlimited.

groundbreaking R&D

What makes AS&E® systems the most comprehensive inspection tools available today? The Company's dedication to continued research and development.

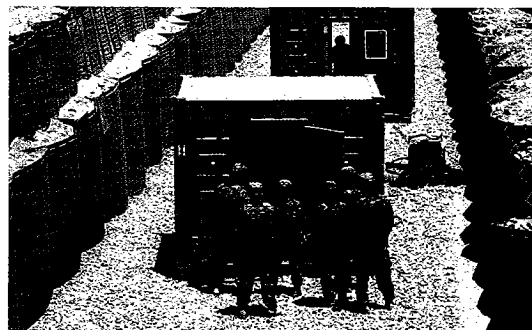


CRAD: INNOVATIVE SOLUTIONS FOR CUSTOMERS' DETECTION CHALLENGES

Consider the number of general aviation aircraft there are in the United States, and you can understand the importance and value of one of AS&E's most recent Contract Research and Development (CRAD) projects, the General Aviation Aircraft Z Backscatter™ screening system. The U.S. Department of Homeland Security, Science and Technology Directorate Borders and Maritime Security Division, awarded AS&E a contract* to design and build a prototype to screen general aviation aircraft for threats and contraband entering the U.S. (see X-ray image on opposite page and image above). This prototype builds on work already in progress at AS&E to miniaturize Z Backscatter screening systems and is transferrable for use in nearly every X-ray scanning or inspection mission. The project is another example of how AS&E adapts and integrates its innovative technologies for new applications to help resolve the serious security concerns of our customers.

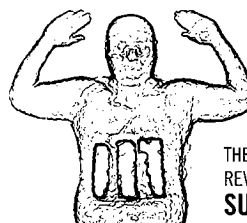
*Development funded by U.S. Department of Homeland Security, Science and Technology Directorate Borders and Maritime Security Division, Contract D11PC20001 for portable, non-intrusive single-sided X-ray scanning of general aviation aircraft.

Approved for Public Release. Distribution is Unlimited.



IRAD: SIM HT PERSONNEL SYSTEM FOR HARSH ENVIRONMENTS

Looking for a system that provides a fast and reliable way to screen people in remote locations and harsh environments, the U.S. government turned to AS&E for a version of its SmartCheck® personnel system that can be used in war zones. AS&E developed the SmartCheck Inspection Module (SIM) and its companion SIM™ HT, a high-throughput version, which incorporates a dual configuration of the SmartCheck system in a rugged ISO container for easy relocation and operator safety. In the last fiscal year, AS&E received a \$23 million order for SIM systems from the U.S. government and its first order from a European Military Army Corps.



THE SIM SYSTEM
REVEALED THIS
SUICIDE VEST

DEAR FELLOW SHAREHOLDERS:

In fiscal year 2011, we at Team AS&E continued on our strong, dynamic path, once again proving ourselves as a trusted, experienced leader and innovator in the X-ray threat and contraband detection industry. It was a year in which our aggressive growth strategies, advances in innovations, vigorous execution, and the increasingly high level of customer satisfaction “all clicked.”

We delivered on all financial metrics, again setting records. It was our third consecutive year of double-digit revenue increases and fourth consecutive year of record bookings. We set records in revenue, net income, earnings per share, and year-end backlog as well.

Despite a challenging worldwide economic climate, our revenue increased by 15 percent, to a new record of \$278.6 million. Record revenue was driven by strong contributions from a diversified product mix and increases in all business areas. Gross profit also reached record highs, increasing to \$129.2 million in FY 2011 from \$111.1 million in FY 2010. Fully diluted earnings per share also set a record, reaching \$4.63 — \$0.66 higher than the prior year’s \$3.97, which itself was a record. Bookings reached a record high as well — \$298 million, thanks to key orders in the military, critical infrastructure, and ports and borders market verticals with contributions from most of our targeted regions around the world.

HOW DID WE DO IT?

By continuing to follow a proven, successful roadmap: strong market gains, robust sales of existing and new products, technological breakthroughs, a diversified product mix, quality improvement, and continued focus on customer service and customer satisfaction.

A TRUSTED PARTNER

One of the key metrics that we follow closely is customer satisfaction. An excellent measure of this is the repeat orders we receive from strategic customers, including U.S. government agencies, the U.S. military, NATO, and other key international accounts. Our percentage of repeat orders is growing annually and is contributing significantly to our strong bookings results.

In FY 2011, we increased investment in sales and marketing, putting more “feet on the street,” conducting more customer demos, and expanding our global presence in targeted regions. These efforts build strong relationships with current customers and increase our visibility in the marketplace to attract new accounts.

But, as I have emphasized over the years, we don’t rest when we win a new customer. We strive for, and attain, extremely high levels of customer satisfaction and on-time delivery. In fact, we met customer contract delivery schedules 99 percent of the time in FY 2011 — quite an achievement.

THE ZBV SYSTEM: STILL THE BEST-SELLING CARGO AND VEHICLE INSPECTION SYSTEM IN THE MARKETPLACE

Not surprisingly, increases in bookings for FY 2011 were driven by key orders for the Z Backscatter™ Van (ZBV™) and the ZBV Military Trailer (ZBV Mil Trailer). First, the Z Backscatter Van, with 95 booked for the year — a marked increase from last fiscal year — continues to be a remarkable product.

OUR STRATEGY PAYS OFF.

We delivered on all financial metrics, again setting records. It was our third consecutive year of double-digit revenue increases and fourth consecutive year of record bookings. We set records in revenue, net income, earnings per share, and year-end backlog as well.



Top: The ZBV system scans cargo at an airport in Europe. **Middle:** The Z Portal system at a border crossing in the Middle East. **Bottom:** The ZBV system scanning vehicles in China.

Since its introduction in 2004, we've sold over 550 ZBV™ systems to 108 different clients in 51 countries around the world, clearly making it the best-selling cargo and vehicle X-ray detection system in the marketplace.

In FY 2011, among the highlights of our ZBV system's sales success were multiple orders to U.S. Customs, which has deployed the versatile system at many U.S. border checkpoints. We received several orders from countries in Latin America — a significant sign of the traction that the system is gaining within the region. Our valued customer, Abu Dhabi Customs, placed follow-on orders for multiple ZBV and Gemini™ systems to secure their strategic borders from smuggling, trade fraud, and other threats. There has been a continued trend of new customers buying a single ZBV unit and, after successful deployment, purchasing additional units. In addition, the system's capabilities and performance record attract new customers that often purchase other products.

Working closely with our customers, we gain a very clear understanding of their Concepts of Operations, or CONOPS. This allows us to provide them with creative and innovative solutions to use their ZBV systems most effectively for their specific application. Customers continue to challenge us with complex requirements, and that is driving us to add design improvements and new options that are taking the Z Backscatter™ Van and our other systems to higher levels of performance and reliability.

ZBV MIL TRAILER: HIGHLY EFFECTIVE BOMB DETECTION

Adding to the success of our Z Backscatter systems in the last year has been the ZBV Mil Trailer, with 36 systems booked in the year to the Department of Defense (DoD) and to an international military organization.

The ZBV Mil Trailer is a highly effective bomb detection system — customer reports validate this — and we are very proud of the proven results in theater, where it protects the lives of soldiers in the field and has a bomb detection capability that is unsurpassed.

There continues to be a compelling need for this product, and we believe that we have continued opportunities with various branches of the DoD and more opportunities with other military organizations around the world.

THE Z PORTAL SYSTEM: A BREAKOUT YEAR

As for the Z Portal® system, FY 2011 was its breakout year.

I consider the Z Portal system to be one of our core high-growth products. There clearly is strong demand for this cost-effective, unique, multi-view vehicle screening system in all regions of the world.

In FY 2011, we penetrated new markets and expanded existing ones with the Z Portal system, booking a total of 22 systems for the year and 60 systems since its introduction. In the last year, the system was purchased for multiple applications, including Customs applications for port and border security, critical infrastructure protection at high-threat facilities, vehicle screening for airport security, and military base security in the continental United States and in war zones.

During the fiscal year, U.S. Customs and Border Protection placed a milestone order for Z Portal systems. It was an order that should open more doors with other international Customs organizations and positively influence decisions on international orders that we are already pursuing.

Also in the fiscal year, we announced orders from two new customers for Z Portal systems in Latin America. We also received our first order from a new Middle Eastern customer, expanding our installed base in this strategic region.

In addition, NATO C3 Agency placed a follow-on order for a Z Portal® system, showing the agency's satisfaction with this unique and highly effective product.

The military and Customs organizations that have deployed our cargo products — including the ZBV™, ZBV Mil Trailer, and Z Portal systems — are reporting significantly improved field performance using our unique technology for their counterterrorism and Customs applications, as evidenced by their increasing number of seizures.

PERSONNEL AND PARCEL SYSTEMS FOR CRITICAL CHECKPOINTS

In our Parcel and Personnel business area, we received a \$23 million non-aviation order from the DoD for our new SmartCheck® Inspection Module (SIM™) and the SIM HT system, a double-sided, high-throughput version. To meet the DoD's war zone requirements, we developed a ruggedized, high-speed personnel inspection system that incorporates AS&E's proven SmartCheck screening system with Z Backscatter™ technology. The systems are built in ISO containers and allow for easy relocation and remote operation and give security officials a fast and reliable way to screen people for a wide variety of threats in remote locations and harsh environments.

The sizable DoD order once again demonstrates the value and versatility of our core technology for critical counterterrorism missions, and our ability to provide unique and flexible solutions to meet our customers' real-world detection requirements. The systems have been deployed in theater, and reports indicate that the systems are performing very well in their mission to detect suicide bombers at checkpoints.

Sales of our Gemini™ parcel screening systems continued with modest growth in key regions. Domestically, we saw bookings increase for protecting high-threat government facilities and critical infrastructure, including nuclear power plants.

We continue to make gains with customers that value the detection advantages of the Gemini systems' multi-technology platform for explosives and contraband detection.

THE SERVICE "TOLL BRIDGE"

As it has been for several years, Worldwide Service and Support continues to be a very strong segment of our business, with a continued high level of customer satisfaction and contribution to the bottom line.

As I noted in a previous letter to shareholders, Service is one of the cornerstones of our profitable and growing business. It is our "toll bridge business," in the words of Warren Buffett, a business that has provided a steady, growing annual revenue stream.

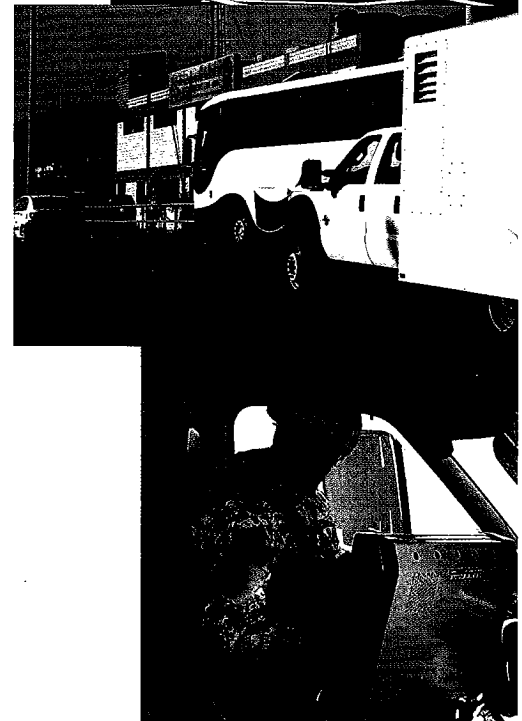
As our installed base of products continues to grow, our Service business grows with it, consequently boosting annual revenue in this key area of our business.

HARNESSING CORE AND NEW TECHNOLOGIES

Contract Research and Development (CRAD) is becoming increasingly valuable to future growth. We are winning more projects that align with our strategic plan and offer us opportunities to broaden the applications of our leading-edge technologies.

The ZBV Mil Trailer is a good historical example of a very successful product that started as a CRAD program and has provided the military with a critical tool for counterterrorism and force protection applications.

A key CRAD project awarded in the last fiscal year came from the Department of Homeland Security's Science and Technology Directorate, which asked us to design and build a prototype Z Backscatter X-ray system to screen general



Top: The Z Portal system scanning vehicles at a Middle East border crossing. Middle: The ZBV system in South America. Bottom: Soldier viewing real-time images on ZBV system monitor.

ANOTHER YEAR OF MILESTONES.
In FY 2011, Team AS&E delivered yet another year of unparalleled performances — from record-setting revenues, earnings per share, and bookings to a stronger-than-ever line of products and nearly flawless customer satisfaction ratings.

aviation aircraft for drugs and contraband. General aviation refers to all private and commercial flights in the United States, other than military, scheduled airline, and cargo flights. The project presents another exciting opportunity that utilizes our core technology for new applications in the marketplace — just consider the number of private aircraft in the United States, and you can see why it is a serious concern for the government, and why it is something that AS&E is eager to help resolve.

IRAD: A PRIORITY IN FY 2011

In FY 2011, we increased Internal Research and Development (IRAD) investment by 14 percent over last year. Innovating new Z Backscatter™ and transmission systems and related software was an IRAD priority, as we work to gain market share in our target market verticals and to tie into new verticals.

This investment allowed us to introduce additional new products, enhance existing products with new features and options, and accelerate the development cycle to bring new technologies into our portfolio.

If we look at where we invested our IRAD dollars, we split IRAD funding among the addition of new products, upgrades of our systems and technologies to meet strategic customers' new requirements, and continued research and development.

Some key IRAD projects developed in FY 2011 were:

— Redesign of our OmniView™ Gantry (*see photo, page 2*). The OmniView Gantry is a sleek new system that provides high-performance, high-energy cargo inspection with optional Z Backscatter imaging for best-in-class overall detection. The unique arc structure which houses the detector modules was designed to minimize X-ray scatter and create a more uniform image. The state-of-the-art detector design provides superior image contrast and resolution, which our customers tell us surpasses anything they have seen. We're extremely excited about this advanced cargo inspection product. With an improved price point and 400-plus millimeter penetration of steel, the OmniView Gantry is not just a gap closer, it's a "leap frog." The industry has set the 400 millimeter benchmark for penetration, and with the development of the newly redesigned OmniView Gantry, we have not only been able to meet it, but surpass it.

— The SIM™ HT. As I mentioned before, we introduced and sold multiple units of this high-throughput, double-sided SmartCheck® system.

— ASE Connect is an excellent example of how we are meeting the future demands and expectations of customers. ASE Connect is a networking solution for our suite of X-ray inspection products that allows for the centralized management of X-ray images and associated data by a common software application. This capability opens up new opportunities for customers requiring multiple X-ray systems that need networking solutions.

ANOTHER YEAR OF MILESTONES

In FY 2011, Team AS&E delivered yet another in a string of unparalleled performances, by all financial and operational metrics. From record-setting revenues, earnings per share, and bookings to a stronger-than-ever line of products and nearly flawless customer satisfaction ratings, it was another year of milestones for our company.

Yet another indicator of our success is our dividend program. I'm pleased to report that our Board of Directors voted to reward our loyal shareholders with a \$0.30 per share cash dividend in each quarter in FY 2011.

Despite turmoil in the world, and increasing order variability from quarter-to-quarter, we find that the need for our unique technology remains compelling

among new and current customers. In the last year, we once again showed our ability to succeed, even in challenging environments. We continue to add new talent, innovate new products and product enhancements, and develop technologies that will broaden our offerings even further, both in existing and new market verticals.

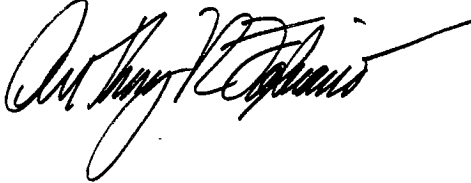
We are very proud of the repeat orders we receive from loyal customers, and it is most encouraging to see the broader market recognition of AS&E's differentiated products and customer service advantages. As always, we focus on driving down costs in all areas of the business to optimize shareholder value. But above all, we continue to identify marketplace opportunities and deliver viable, real-world solutions that are exceeding customer expectations.

TEAM AS&E

Before I close, I want to thank our hard-working, self-motivated employees, who continue to make these record-breaking results happen. AS&E is a challenging and exciting place to work. We set the performance bar high in all areas, and I am proud to say that our people are continuing to step up and meet the challenges. Their accomplishments are most praiseworthy.

We have an unwavering focus on financial strength, quality improvement, innovative new products, technological breakthroughs, and customer service and satisfaction. The result of that focus — along with great teamwork, confidence in meeting our goals and improving our core technologies and products — is an exceptional company, positioned for further breakthroughs and success.

Sincerely,



Anthony R. Fabiano
President and CEO
American Science and Engineering, Inc.
July 2011



Top: The OmniView™ Gantry at the Port of Venice.
Middle: The Sentry™ Portal system. *Bottom:* The Gemini™ parcel screening system in use in China.



Detect the **difference**.

AS&E CODE OF BUSINESS CONDUCT AND ETHICS

We... strive to foster a culture of honesty and accountability. Our commitment to the highest level of ethical conduct should be reflected in all of the Company's business activities ... One of our Company's most valuable assets is our reputation for integrity, professionalism, and fairness. We ... recognize that our actions are the foundation of our reputation and adhering to this Code and applicable law is imperative. (To review the complete Code, please go to "Investor Information" on our Web site, www.as-e.com.)

AS&E VALUES

People The men and women of AS&E are the core of our success. We value and respect each individual regardless of their race, religion, ethnic background, or position in the company. We value a fair and safe environment where each of us can perform to the best of our ability. We recognize that we are all engaged in this enterprise together — each of us an individual, all of us a team.

Shareholders Our shareholders have entrusted us with building a company that will deliver superior growth over time. We value the vision, leadership, and sound business practices that result in profitable growth. We will build our reputation by executing crisply and conducting all business dealings to the highest ethical standards.

Customers We are customer focused. They are the reason for our existence. We strive to provide technologically advanced products and services to meet and exceed our customers' expectations for capability, quality, and price. We listen carefully to what our customers tell us and respond with innovation and best-in-class support.

Operations We value teamwork and lean, efficient operations. We value clear roles and responsibilities that enable accountability and the ability to adapt quickly to change throughout our Company. We will continuously improve our products by pro-actively designing in quality upfront. We value professionalism, productivity, and personal safety in all operations.

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

FORM 10-K

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

For the fiscal year ended March 31, 2011

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
(State or other jurisdiction of
incorporation or organization)

04-2240991
(IRS Employer Identification No.)

**829 Middlesex Turnpike,
Billerica, Massachusetts**
(Address of principal executive offices)

01821
(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
Common Stock (\$.66 ^{2/3} par value)

Name of each exchange on which registered
NASDAQ Stock Market

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 No

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

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

Large accelerated filer Accelerated filer
Non-accelerated filer (do not check if smaller reporting company) Smaller reporting company

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

The aggregate market value of voting stock held by non-affiliates of the registrant, computed using the closing sale price of common stock of \$73.65 on September 30, 2010 was \$644,895,000.

9,198,852 shares of registrant's common stock were outstanding on June 1, 2011.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive Proxy Statement pursuant to Regulation 14A not later than 120 days after the registrant's fiscal year end of March 31, 2011. 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, 2011
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Z Backscatter™, ZBV™, MobileSearch™, Shaped Energy®, AS&E®, Gemini™, Omniview™, Sentry™, SmartCheck®, Z Portal® and all AS&E product names and AS&E logos are either registered trademarks or trademarks of American Science and Engineering, Inc. in the United States and/or other countries. Other product and company names mentioned herein may be the trademarks of their respective owners.

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”, “intends”, “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 subsidiaries.

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 detection products for homeland security and other targeted markets. AS&E provides maintenance, warranty, engineering, and training services related to these products.

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 throughout the world to a variety of customers, including:

- authorities responsible for port and border security;
- customs agencies;
- military organizations;
- high threat commercial and government facilities;
- aviation security agencies; and
- law enforcement agencies.

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 around the world. The Company believes that homeland defense, force protection and military security initiatives will continue to provide new opportunities, with additional growth in the seaports and borders, federal and military facilities, critical infrastructure and corporate security markets.

The Company’s objective is to distinguish itself from its competitors by offering innovative products which provide customers with superior threat detection and/or improved operating efficiencies. To achieve this objective, 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 applications. Z Backscatter is a unique X-ray imaging technique that has distinct advantages for the detection of organic or low atomic number (Z) or “low 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, high-energy transmission technology and Radioactive Threat Detection (RTD).

X-ray imaging devices contain these basic subsystems: X-ray sources, detectors and image formation/ processing software. The source generates an X-ray beam that is directed at the object to be scanned (baggage, container, or similar object). When the source X-rays encounter the object, they are either absorbed by the object, pass directly through the object, or scatter from the object. Dense materials, typically composed of atoms having a high atomic number (Z), tend to absorb X-rays. Materials that are less dense and that are typically composed of low Z atoms 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 dependent upon the energy of the X-ray source and the composition and quantity of the material in the path of the X-ray beam. Transmission X-ray images are useful for seeing "through" the object of interest. A transmission image, however, is a shadow-gram that superimposes the X-ray transmission characteristics of all objects in the path on the beam and can therefore be difficult to interpret.

Z Backscatter Technology: Many of the Company's X-ray systems utilize Z Backscatter technology applications covered under AS&E's patents. The term "Backscatter" refers to those X-rays that *scatter back* from molecules in the object under examination *back* toward the X-ray source. Z Backscatter detectors capture these scattered X-rays which are then used to create easily readable, photo-like images.

Many threat items are organic in nature and have correspondingly 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 the operator more information about the contents of the baggage or container by differentiating higher Z 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 and MobileSearch HE (High-Energy) products. Radioactive Threat Detection (RTD) is a technology which is used to detect radioactive materials in vehicles, simultaneously with the creation of a Z Backscatter image, and is an option on selected AS&E detection systems.

Products and Systems

The Company's products and services can be grouped into five different areas: Cargo Inspection Systems, Z Backscatter Systems, Parcel and Personnel Screening Inspection Systems, Contract Research and Development, and Service and Support.

Cargo Inspection Systems: The Cargo Inspection 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, airports, and cargo and transportation hubs. The Cargo Inspection systems are designed to combat trade fraud, drug trafficking, weapons smuggling, and terrorism. The Cargo Inspection systems include:

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. The OmniView Gantry System 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 and reducing the need for extensive exclusion zones. High energy 6 MeV transmission X-rays can penetrate almost 16 inches (400 mm) of steel, a capability that enables inspection of the overwhelming majority of cargo containers. The Z Backscatter images, on the other hand, 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 over 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 facilities.

Z Portal System: a multi-view, high throughput, drive-through inspection system capable of scanning cargo and vehicles for threats and contraband. The Z Portal System is available in two basic configurations: a large tunnel version for screening trucks, buses, and cargo containers; and a small tunnel version for scanning passenger vehicles. The relocatable Z Portal System can be installed with one, two or three Z Backscatter X-ray modules, allowing for left, right and/or top-side imaging of the vehicle under examination. The images produced by the Z Portal System are ideal for the detection of organic materials including explosives, drugs, alcohol, tobacco, and stowaways. The Z Portal System is well-suited for scanning vehicles at border crossings, high threat facilities, and other vehicle entry checkpoints.

Z Gantry System: a multi-view Z Backscatter inspection system capable of scanning cars, vans, trucks, and their cargo for concealed threats and contraband in a gantry configuration. The relocatable Z Gantry System is configured with three Z Backscatter imaging modules, allowing a left, right, and top view of the vehicle under examination. The rail-mounted Z Gantry System moves over vehicles and cargo while scanning for threats and contraband such as stowaways, explosives, drugs, and alcohol.

Sentry Portal System: a high-throughput drive through transmission X-ray inspection system designed to screen cargo for security threats and contraband. The Sentry Portal System enables high volume scanning while producing a transmission image able to penetrate 12 inches (300 mm) of steel, sufficient for the inspection of even densely loaded cargo containers. The system employs an advanced cargo sensing subsystem that begins scanning only after the cab has passed to maintain a safe environment for vehicle drivers.

MobileSearch HE (High-Energy): a mobile inspection system for scanning trucks, cargo containers, and vehicles which utilizes both high energy transmission imaging and Z Backscatter imaging for superior contraband and threat detection, along with flexible scan modules for added versatility. MobileSearch HE's transmission imaging offers penetration of up to 12 inches (300 mm) of steel while the complementary backscatter imaging highlights organic materials for improved detection of explosives, drugs and other contraband. Together, transmission and backscatter imaging provide the most information about the contents of the cargo. The system can be used as a conventional mobile cargo scanner that drives past vehicles or containers to be scanned or in backscatter-only mode, which allows MobileSearch HE to scan oversized or oddly-shaped cargo and to scan vehicles as they are driven past the system.

Z Backscatter Systems: Z Backscatter Systems include single-sided imaging systems that use Z Backscatter imaging only.

Z Backscatter Van (ZBV): a mobile X-ray screening system built into a commercially available chassis. ZBV 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 on a variety of chassis in several versions.

ZBV Military Trailer: a rugged X-ray screening system built onto a standard 5-ton military trailer. With Z Backscatter X-ray imaging, security officials can use ZBV Military Trailer for screening vehicles, containers, and other cargo for terrorist threats and contraband — simply by towing the trailer past the subjects, or by remaining stationary while vehicles drive past the trailer.

Parcel and Personnel Screening Inspection Systems: Parcel Inspection 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.

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 bombers, 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.

Gemini System: 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 devices (IEDs). 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. The Gemini system is offered in a range of tunnel sizes to suit a range of customer applications.

SmartCheck System: a personnel screening system for the effective screening for contraband and threats hidden under a person's clothing. The SmartCheck system 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. Smartcheck's 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. The SmartCheck system employs proprietary advanced image processing algorithms to enhance privacy, while maintaining a high level of threat detection. The SmartCheck system is also available in a ruggedized container configuration called the SmartCheck Imaging Module (SIM) for deployment in harsh environments.

Contract Research & Development: AS&E engages in a variety of contract research and development (CRAD) programs, primarily 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 ("FSE") 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/or computers. FSEs are available 7 days a week, 24 hours a day, and are located at AS&E sites in Asia, Europe, the Middle East, Africa and North and South America. In addition, Technical Support is provided at the Company's headquarters in Billerica, Massachusetts. AS&E provides comprehensive, cost-effective spare parts customized for each system. The Company maintains an inventory of field-replaceable components in various depots around the world 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 service and maintenance training, and other customized training courses are provided aftermarket to interested customers.

Component Availability

Critical material and subsystems are procured from both domestic and global supply partners. These supply sources may be single sources for certain components 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 currently does not expect to experience sustained difficulties in securing required material and subsystems to support its future business operations.

Intellectual Property

The Company relies on a combination of patent, copyright, trademark, and trade secret laws, and contractual provisions to protect its intellectual property. 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. As of March 31, 2011, the Company has in excess of 45 active patents issued by the United States Patent and Trademark Office and multiple pending applications directed to a variety of technologies. The Company also has been granted patents or has pending applications in over 30 countries outside of the United States. A significant number of our patents have been issued in the last five years.

Generally, if pending on June 8, 1995, a patent issued in the United States is effective for the longer of 17 years from the date of issue or 20 years from the United States filing date of the earliest non-provisional application upon which the patent is based. If filed after June 8, 1995, a patent is generally effective for a term of 20 years from the United States filing date of the earliest non-provisional application upon which the patent is based. 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 also has various trademarks registered and pending registration with the United States Patent and Trademark Office, as well as marks registered and pending registration in various jurisdictions around the world. Company patents and trademarks are reviewed regularly, and those with no foreseeable commercial value are abandoned to eliminate costly maintenance fees. The Company has ongoing research and development efforts and expects to seek additional intellectual property protection in the future.

Although the Company believes the ownership of such patents and trademarks, and its copyrights, is an important factor in its business and that its success depends in part on the ownership thereof, the Company also relies on the innovative skills, technical competence, and marketing abilities of its personnel for its business success.

In addition to patents and pending patent applications, the Company uses trade secrets and proprietary know-how in our products. Any of our know-how or trade secrets not protected by a patent could be disclosed to, or independently developed by, a competitor.

The Company believes that its patents, proprietary technology, trade secrets, 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. We monitor the activities of other parties with respect to their use of intellectual property. In addition, we require our employees, consultants, outside collaborators, and certain distributors and suppliers to execute confidentiality and, where appropriate, non-compete agreements upon commencing employment or other relationships with us. 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.

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 65%, 63%, and 56%, of the Company's total sales in the fiscal year ended March 31, 2011 ("fiscal 2011"), the fiscal year ended March 31, 2010 ("fiscal 2010"), and the fiscal year ended March 31, 2009 ("fiscal 2009"), 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. A significant number 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. In fiscal 2011 one of the Company's contracts, in 2010 one of the Company's contracts and in fiscal 2009 two of the Company's contracts with the U.S. government were terminated in whole or in part for convenience by the U.S. Government. These terminations did not result in any material losses to the Company. The Company is heavily dependent upon sales to agencies of the U.S. government and systemic 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 32%, 32%, and 37% of the Company's total sales in fiscal 2011, 2010, and 2009 respectively, and continue to be a high priority for the Company as part of its long-term growth strategy. International sales often 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. The Company manages its overseas risk in a number of ways, including actively pursuing multiple opportunities at a time 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, balanced against the cost of such contracts. In fiscal 2010, the Company entered into one foreign currency option contract to hedge currency risk in one region. This hedge contract was closed in fiscal 2011 and the Company entered into no further hedges in fiscal 2011. There were no hedging activities in fiscal 2009.

In fiscal 2011, the Company had sales to three major customers, two of which are agencies of the U.S. government and one international customer. These customers accounted for 30%, 12% and 11% of total sales, respectively. In fiscal 2010, the Company had sales to two major customers, both agencies of the U.S. government, which accounted for 24% and 12% of total sales, respectively. In fiscal 2009, the Company had sales to two major customers, one agency of the U.S. government and one international government, which accounted for 18% and 16% of total sales, respectively. The loss of these significant customers could substantially reduce our revenues and our business and prospects could be harmed.

Sales Backlog

The Company's sales backlog was \$215,228,000, \$195,729,000, and \$155,349,000 at March 31, 2011, March 31, 2010, and March 31, 2009, respectively. We define sales backlog as the value of orders for which funding is authorized, appropriated and contractually obligated by the customers, less the cumulative amount of sales recognized on such orders. We do not include negotiated contracts for which funding has not been appropriated or otherwise authorized, unexercised options or potential indefinite-delivery/ indefinite-quantity (IDIQ) orders in our backlog.

A significant number of the Company's contracts with the U.S. government contain clauses permitting the government to terminate the contract for convenience or make changes to the contract, upon certain terms and conditions, including payment to the Company for work performed. This right was exercised in fiscal 2011 by one U.S. government agency, in fiscal 2010 by one U.S. government agency and in fiscal 2009 by two U.S. government agencies.

Total contracts with U.S. Government agencies and subcontractors in the backlog were \$151,507,000, \$89,610,000, and \$71,545,000 at March 31, 2011, 2010 and 2009, respectively. It is estimated that approximately 74% of the 2011 backlog will be converted to revenue within the fiscal year ending March 31, 2012.

Sales and Marketing

The Company's 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.

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. AS&E competes with at least five other companies, who compete using a variety of methods including price, warranty coverage, and product performance. 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 competing systems. The Company believes that its patented and proprietary technology gives 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, such as Z Backscatter and Radiation Threat Detection, and/or competitive pricing place it in a strong position with regard to its sales of X-ray inspection systems. However, a number of companies have developed products that compete with the Company's X-ray inspection products. (See "Item 1A. Risk Factors" below.)

Research and Development

The Company spent approximately \$22,619,000 of its own funds for research and development during fiscal 2011, compared to \$19,764,000 and \$18,070,000 in fiscal 2010 and 2009, respectively. The fiscal 2011 research and development efforts were focused on new product development, researching new technologies, the development of new applications, and design modifications and enhancements to existing products.

In addition, the Company conducted government-sponsored research primarily focused on advances in X-ray systems, image analysis and integrated system development for security inspection problems. The Company recognized revenues of \$4,821,000, \$2,306,000, and \$12,524,000 in fiscal 2011, 2010, and 2009, 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.

ISO 9001 Certification

In August 2009, the Company's Quality Management System was recertified and upgraded to the ISO 9001:2008 Standard of the International Organization for Standardization. American Science and Engineering has been an ISO 9001 registered company since 2000. 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 enhance its competitive edge.

Personnel

As of March 31, 2011 the Company had 420 employees as compared to 395 employees at March 31, 2010. It is the Company's policy to have employees sign a non-compete and non-disclosure agreement as a condition of employment. None of the Company's employees are represented by labor unions.

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 based upon the customer's country of domicile and the major regions of international activity. 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 1.6% of the Company's assets at March 31, 2011).

Net Sales and Contract Revenues

(Dollars in thousands)	Fiscal Year					
	2011		2010		2009	
Domestic	\$ 190,769	68%	\$ 163,873	68%	\$ 138,240	63%
International	87,807	32%	78,220	32%	80,127	37%
Net Sales and Contract Revenues	\$ 278,576	100%	\$ 242,093	100%	\$ 218,367	100%

Percent of International Revenue by Major Region:

Middle East & Africa	84%	81%	85%
Pacific Rim	7%	8%	7%
Europe	7%	9%	8%
All Other	2%	2%	—%

Our foreign operations involve certain risks, as discussed under “Item 1A. Risk Factors” under the risk factor entitled “We conduct our business worldwide, which exposes us to a number of difficulties in coordinating our international activities and dealing with multiple regulatory environments, as well as risks associated with geopolitical and economic instability.”

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 are subject to the informational requirements of the Securities Exchange Act of 1934 (the “Exchange Act”), and, accordingly, we file reports, proxy statements, and other information with the Securities and Exchange Commission (the “SEC”). 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 Exchange Act 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, and are also available from the SEC’s website at www.sec.gov. Information regarding the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330.

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, our business, financial condition and operating results could be materially adversely affected.

Our reliance on a small number of customers for a large portion of our revenues could harm our business and prospects. A number of contracts held by those customers may be terminated, or the scope and funding reduced, at the customer’s discretion.

Our business is dependent on sales to a small number of customers, which include agencies of the U.S. government. During fiscal 2011, three customers accounted for 53% of our total revenues. During fiscal 2010, two customers accounted for 36% of our total revenues. We can provide no assurance that our existing customers will increase or maintain their level of demand for our products.

A significant number of our government contracts may be terminated at the government’s discretion. During fiscal 2011, one of our contracts with the U.S. government was terminated for convenience by the U.S. government. During fiscal 2010, one of our contracts with the U.S. government was terminated for convenience by the U.S. government. During fiscal 2009, two of our contracts with the U.S. government were partially terminated for convenience by the U.S. government. Although these terminations did not result in material losses to us, future contract terminations could negatively impact our results of operations. The termination of our relationship with one or more of our significant customers or the reduction or delay of orders of our systems by these customers would substantially reduce our revenues, and our business and prospects may be harmed.

Our results of operations are affected by the overall economy and governmental spending.

Our results of operations may be materially adversely affected by the conditions in the global economy, global political climate and the impact of those conditions on U.S. and foreign government spending. The global economic recession has caused extreme volatility and disruptions in the capital and credit markets, including a significant reduction in the availability of capital resources to many business enterprises. U.S. and foreign economies have experienced significant declines in employment, spending, household wealth and lending. Businesses have faced, and may continue to face, weakened demand for their products

and services, difficulty obtaining access to financing, increased funding costs, and barriers to expanding operations. U.S. and foreign government spending for programs involving products such as ours may be reduced or delayed, now or in the future, due to reduced tax revenues and other spending imperatives, including financial institution support and economic stimulus programs. Economic and market conditions may continue to worsen and could negatively impact our results of operations.

Our business is dependent upon governmental policies and appropriations.

Our largest customers are government agencies, in the U.S. and abroad, and demand for our products is dependent upon national priorities and governmental initiatives. These priorities and initiatives are subject to change from time to time in response to the economic and political environment. In addition, political uprisings have created uncertainty in the continuity of certain regimes who are potential purchasers of our products and services. We are also exposed to budget approval and appropriation decisions and processes which are driven by numerous factors, including geo-political events and macroeconomic conditions which are beyond our control. While the overall level of U.S. defense spending has increased in recent years for numerous reasons, 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. In addition, changes to political leadership in other countries can delay or curtail our results of operation.

Our lengthy sales cycle requires us to incur significant expenses with no assurance that we will generate revenue or recover such expenses.

A substantial portion of our 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 our product sales is subject to delays associated with the lengthy approval processes that often accompany such capital expenditures. During these approval periods, we expend significant financial and managerial resources in anticipation of future orders that may not occur. If we fail to receive an order after expending these resources, we may be unable to generate sufficient revenue to recover the costs incurred and our business and prospects may be harmed.

We use estimates in recognizing revenues and if we make changes to estimates used in recognizing revenues, our profitability may be adversely affected.

Revenues for certain of our contracts are recognized using the percentage-of-completion method based on progress towards completion, which requires estimates of total costs at completion. Estimating costs at completion on our long-term contracts, particularly due to the technical nature of the services being performed, is complex and involves significant judgment. Adjustments to original estimates are often required as work progresses and additional information becomes known, even though the scope of the work required under the contract may not change. Any adjustment as a result of a change in estimate is recognized as events become known. Changes in the underlying assumptions, circumstances or estimates could result in adjustments that may adversely affect future financial results.

We conduct our business worldwide, which exposes us to a number of difficulties in coordinating our international activities and dealing with multiple regulatory environments, as well as risks associated with geopolitical and economic instability.

The continued threat of terrorist activity and other acts of war or hostility have created uncertainty in the foreign markets and have significantly increased the political, economic and social instability of some of the geographic areas in which we operate. Acts of terrorism could create further uncertainties and instability. To the extent this results in disruption or delays in the sale or shipments of our products, our business, operating results and financial condition could be adversely affected. Our revenues from international customers accounted for approximately 32%, 32% and 37% of our net revenues for the fiscal years ended March 31, 2011, March 31, 2010 and March 31, 2009, respectively, and a significant number of domestic customer orders require shipments to, and services provided in, overseas locations. In addition, we transact business internationally with a number of our key suppliers. As a result of our worldwide business operations, we are 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;
- preference towards local suppliers;
- governmental currency controls;
- interruption of transportation flow for delivery of parts to us and finished goods to our customers;
- currency exchange rate fluctuations; and
- tariff regulations.

Although our 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 us to compete with foreign manufacturers on price or otherwise have a material adverse effect on our sales and operating results.

Changes in governmental regulations may reduce demand for our products or increase our expenses.

We compete in markets in which we or our customers must comply with federal, state, local and foreign regulations, such as health and safety regulations. We develop, configure and market our products to meet our customers' needs created by these regulations. Any significant change in these regulations could reduce demand for our products or increase our costs to comply with new regulations, both of which may adversely affect our operating results.

We could be prohibited from shipping our products to certain countries if we are unable to obtain U.S. government authorization regarding the export of our products, or if current or future export laws limit or otherwise restrict our business.

We must comply with U.S. laws regulating the export of our products. In some cases, explicit authorization from the U.S. government is needed to export our products. The export regulations and the governing policies applicable to our business are subject to change. We cannot provide assurance that such export authorizations will be available for our products in the future. If we cannot obtain required government approvals under applicable regulations, we may not be able to sell our products in certain international jurisdictions.

Our reliance on a limited number of suppliers for some key components and subsystems for our products could harm our business and prospects.

We rely on a number of suppliers to provide materials and subsystems for our products. We are reliant on a limited 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 we change any of our suppliers, a qualification process would need to be completed and the affected product may require redesign, creating potential delays in product shipments.

Increases in the cost for certain commodity materials or commodity components may increase our costs of manufacturing and transporting products and may result in lower operating margins if we are unable to find ways to mitigate these increased costs.

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 critical materials. There is also the possibility that a key single source supplier may be acquired by or form a strategic alignment with a competitor, which could impact our ability to secure required materials. If our supply of materials is disrupted, we cannot ensure that we would be able to find another supplier on a timely basis.

We depend on our 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. We do not expect to experience sustained difficulties in securing required material and subsystems to support forward business operations.

Fluctuations in our operating results and unanticipated contract terminations may cause our stock price to fluctuate.

Given the nature of the markets in which we participate, and given the right of key customers to terminate contracts at their discretion or otherwise reduce the scope of contracts, we cannot reliably predict future revenue and profitability. A high proportion of our costs are fixed, due in part to our significant sales, research and development, and manufacturing costs. As a result of our fixed costs, declines in revenue could disproportionately affect our operating results and stock price at any time. Factors that may affect our quarterly operating results and the market price of our common stock include:

- demand for and market acceptance of our X-ray inspection systems;
- lengthy sales cycles and the effect of large orders;
- termination of contracts and contractual awards at the customer's convenience;
- changes in political agendas or national priorities;
- adverse changes in the level of economic activity in regions in which we do business;
- political unrest in the regions where we transact business;
- adverse changes in industries on which we are particularly dependent;
- competitive pressures resulting in lower selling prices for our products;
- delays or problems in the introduction of new products;
- our competitors' announcement or introduction of new products, services or technological innovations;
- variations in our product mix;
- the timing and amount of our expenditures in anticipation of future sales;
- increased costs of raw materials or supplies; and
- changes in the volume or timing of product orders.

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

If our X-ray inspection systems fail to detect the presence of bombs, explosives, weapons, contraband or other threats to personal safety, we could be subject to product and other liability claims and negative publicity, which could result in increased costs, reduced sales, and a decline in the market price of our common stock. There are many factors beyond our control that could result in the failure of our 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 our equipment. The failure of our 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 us.

Our insurance may be insufficient to protect us from product liability claims.

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

We may not be able to fund our research and development activities.

We generate funds for our research and development activities from operations, private sources and the government. We may be unable to generate the funds necessary to support our research and development activities if we do not generate sufficient funds from operations, other potential private sources, or the government. We 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 2011, 2010, and 2009, we recorded \$4,821,000, \$2,306,000, and \$12,524,000, respectively, for government-sponsored research and development. There is no guarantee that we will receive funds for government-sponsored research in the future. If we are unable to fund our research and development activities through our operations or from outside sources, we may be unable to continue to innovate or bring our innovations to market on a timely or cost effective basis, or our innovations may be surpassed by other competitors or new technologies.

Our success depends on new product development.

Our continuing research and development program is designed to develop new products and to enhance and improve our current products. We plan to expend significant resources on the development of our new products. The successful development of our 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, we cannot assure that our product development efforts will be successful on a timely basis or within budget, if at all. Our failure to develop new products and product enhancements on a timely basis or within budget would harm our business and prospects.

Our success depends upon our ability to adapt to rapid changes in technology and customer requirements.

The market for our products has been characterized by rapid technological changes, frequent product introductions and evolving industry standards and customer requirements. We believe that these trends are expected to continue into the foreseeable future. Our success will depend, in part, upon our ability to enhance our existing products, successfully develop new products that meet changing customer and regulatory requirements and gain market acceptance. If we fail to do so, our products may be rendered obsolete or noncompetitive by new industry standards or changing technology, in which case our revenue and operating results would suffer. In developing any new product, we may be required to make a substantial investment before we can determine the commercial viability of the new product. If we fail to accurately foresee our customers' needs and future activities, we may invest heavily in research and development of products that do not lead to significant revenue.

We may not be able to compete successfully.

A number of companies have developed products that compete with our X-ray inspection products. Many of our competitors are larger and have greater financial resources. Some of our competitors have more extensive research, marketing and manufacturing capabilities and greater technical and personnel resources, and may be better positioned to continue to improve their technology in order to compete in an evolving industry. Our failure to compete successfully could decrease demand for our products or make our 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, we must develop new products and periodically enhance our existing products in a timely manner. We recognize that we may have to adjust the prices of some of our 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.

Our business could be harmed if we are unable to protect our intellectual property.

We rely on a combination of trade secrets, patents, trademarks, copyrights and confidentiality procedures to protect our technology. Despite our efforts, the steps we have taken to protect our technology may be inadequate. Existing trade secret, patent, trademark and copyright laws offer only limited protection. Our 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 our products, thereby substantially reducing the value of our proprietary rights. The laws of some foreign countries in which our products are or may be manufactured or sold may not protect our products or intellectual property rights to the same extent as do the laws of the United States. We cannot assure that the steps we have taken to protect our intellectual property will be adequate to prevent misappropriation of our technology. Our inability to protect our intellectual property could have a negative impact on our operations and financial results.

Our business may be materially and adversely affected by infringement claims initiated by us or our competitors.

Initiating or defending against the enforcement of our intellectual property rights may result in significant, protracted, and costly litigation. We have previously been involved in various litigations involving our intellectual property and have been successful in protecting such interests to date. We expect intellectual property disputes to be an ordinary part of our business for the foreseeable future. We may initiate claims or litigation against third parties for infringement of our intellectual property rights, or to establish the validity of our property rights. There can be no assurance that we will prevail in any such action. Litigation by or against us 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 us. In the event of an adverse result in any such litigation, we 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, we cannot assure that we would be able to obtain one on commercially reasonable terms, if at all. We cannot assure that we will be successful in developing non-infringing technology or that the cost or time required to develop such technology will be reasonable.

We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology could harm our ability to effectively operate our business.

Our ability to effectively manage and maintain our inventory and internal reports, and to ship products to customers and invoice them on a timely basis depends significantly on our enterprise resource planning, production management, and other information systems. The failure of these systems to operate effectively or to integrate with other systems, or a breach in security of these systems could cause delays in product fulfillment and reduced efficiency of our operations, and it could require significant capital investments to remediate any such failure, problem or breach.

Our success depends on our ability to attract and retain qualified management professionals.

Our future success depends in large measure upon the continued contributions of our 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.

We may require additional capital to finance continuing operations. We cannot assure that operations will continue to be profitable, that we will generate levels of revenues and cash flows sufficient to fund operations, or, if necessary, that we 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 our cash needs or may not be available in the future, or, if available, at a cost that we believe is reasonable.

Future sales of our common stock by existing stockholders could depress the market price of our common stock.

Substantially all of our 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. Nevertheless, sales of substantial amounts of common stock by our stockholders, or even the potential for such sales, may cause the market price of our common stock to decline and could impair our ability to raise capital through the sale of our equity securities.

The volatility of our stock price could adversely affect an investment in our common stock.

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

- announcements of developments related to our business;
- quarterly fluctuations in our actual or anticipated operating results and order levels;
- general conditions in the worldwide economy;
- announcements of technological innovations;
- new products or product enhancements by us or our competitors;
- developments in patents or other intellectual property rights and litigation; and
- developments in our relationships with our customers and suppliers.

In recent years the stock market in general, and the markets for shares of small capitalization and “high-tech” companies, 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 our common stock.

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

Provisions in our articles of organization and our shareholder rights plan may have the effect of discouraging or preventing a change in control. These provisions could limit the price that acquirers might be willing to pay in the future for shares of our common stock. Specifically, our articles of organization authorize our 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 our 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 our common stock. We have no present plans to issue shares of preferred stock. We have in place a shareholder rights plan, which was renewed in April of 2008, under which our stockholders are entitled to purchase shares of our 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.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The Company leases an 186,000 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.

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. [REMOVED AND RESERVED]

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

Fiscal Year	Quarter Ended	High	Low
2011	March 31, 2011	\$ 94.90	\$ 83.29
	December 31, 2010	\$ 87.42	\$ 72.43
	September 30, 2010	\$ 80.95	\$ 69.73
	June 30, 2010	\$ 81.00	\$ 66.29
2010	March 31, 2010	\$ 84.49	\$ 72.81
	December 31, 2009	\$ 81.59	\$ 63.01
	September 30, 2009	\$ 71.29	\$ 60.00
	June 30, 2009	\$ 69.99	\$ 53.66

Holdings

As of June 1, 2011, there were approximately 564 holders of record of the Company's common stock.

Common Stock Dividends

In May of 2007, the Company began declaring quarterly cash dividends for its common stock shareholders. Common stock cash dividends declared during the fiscal years ended March 31, 2011 and March 31, 2010 were as follows:

Date Declared	Dividend per common share	
May 11, 2010	\$	0.30
August 9, 2010		0.30
November 9, 2010		0.30
February 8, 2011		0.30
Fiscal year ended March 31, 2011	\$	1.20
May 13, 2009	\$	0.20
August 6, 2009		0.20
November 5, 2009		0.20
February 9, 2010		0.30
Fiscal year ended March 31, 2010	\$	0.90

On May 9, 2011, the Company declared another quarterly dividend of \$0.30 for holders of record on May 23, 2011 to be paid June 2, 2011. Future dividend payments will depend on our earnings, capital requirements, financial condition and capital needs and other factors considered relevant by our Board of Directors.

Securities Authorized for Issuance under Equity Compensation Plans

The following table provides information about the Company's equity compensation 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, 2011.

Plan Category	Number of securities to be issued upon exercise of outstanding options and rights as of March 31, 2011 (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, 2011 (excluding securities reflected in column (a)) (c)
1995 Combination Plan	500	\$ 13.08	—
1999 Combination Plan	12,417	14.76	—
2000 Combination Plan	12,000	37.91	—
2002 Combination Plan	52,021	29.80	1,300(1)
2003 Stock Plan for Non-Employee Directors	45,000	66.45	—
2005 Equity and Incentive Plan	329,669	61.55	300,432(2)
Equity compensation plans not approved by security holders:			
1997 Non-Qualified Option Plan	3,000	39.06	—
1998 Non-Qualified Option Plan	17,839	42.39	—
Total	472,446	\$ 55.77	301,732

- (1) Shares under the 2002 Combination Plan may be issued in the form of incentive stock options or non-qualified stock options.
- (2) Shares under the 2005 Equity and Incentive Plan may be issued in the form of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock and restricted stock units.

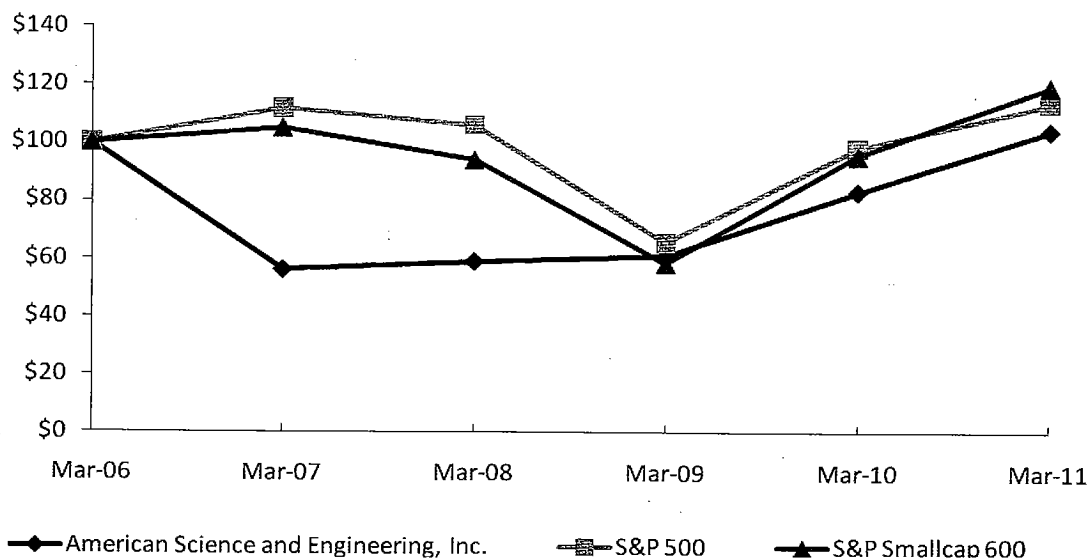
Purchases of Equity Securities

On May 13, 2008, the Board of Directors approved a Stock Repurchase Program which authorized the Company to repurchase up to \$35 million in shares of its common stock from time to time on the open market. As of March 31, 2011, the remaining balance available under the program to purchase shares was \$20,068,000. The Company made no repurchases of equity securities in the quarter ended March 31, 2011.

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 ("S&P500") and the S&P SmallCap 600 Index. The S&P SmallCap 600 Index is a published index which measures the performance of small-cap companies which meet certain financial metrics. The Company was added to the S&P SmallCap 600 Index in January of 2009.

Comparison of Cumulative Five Year Total Return



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 S&P SmallCap 600 Index.

The information included under the heading "Stock Performance Graph" in Item 5 of this Annual Report on Form 10-K is "furnished" and not "filed" and shall not be deemed to be "soliciting material" or subject to Regulation 14A, shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act.

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. The results below are not necessarily indicative of the results to be expected for any future periods.

(Dollars in thousands, except per share amounts)	Fiscal Year				
	2011	2010	2009	2008	2007
Net sales and contract revenues	\$ 278,576	\$ 242,093	\$ 218,367	\$ 166,733	\$ 153,186
Net income	\$ 42,817	\$ 36,176	\$ 28,353	\$ 17,478	\$ 24,610
Income per share—diluted	\$ 4.63	\$ 3.97	\$ 3.18	\$ 1.87	\$ 2.38
Total assets	\$ 336,574	\$ 299,853	\$ 268,287	\$ 235,534	\$ 221,725
Long-term obligations	\$ 9,069	\$ 14,380	\$ 13,125	\$ 13,298	\$ 14,610
Stockholders' equity	\$ 266,080	\$ 221,768	\$ 182,066	\$ 166,072	\$ 167,698
Dividends per common share	\$ 1.20	\$ 0.90	\$ 0.80	\$ 0.60	\$ —

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.

Overview American Science and Engineering, Inc. develops and manufactures state-of-the-art X-ray inspection systems for homeland security, force protection, and other critical defense applications. We provide maintenance, warranty, engineering, and training services related to these products.

Our primary technologies are Z Backscatter technology which is used to detect explosives, illegal drugs, and other contraband even when artfully concealed in complex backgrounds; and other technologies that expand the detection capability of our products beyond the material discrimination features of the Z Backscatter technology to include the penetration capability of high-energy transmission X-rays for dense cargos and/or other detection techniques, such as radioactive threat detection.

Net sales and contract revenues for fiscal 2011 increased by 15% to \$278,576,000 compared to fiscal 2010 revenues of \$242,093,000. We reported income before taxes of \$64,875,000 in fiscal 2011 compared to an income before taxes of \$54,846,000 in the previous fiscal year. Net income for fiscal 2011 was \$42,817,000 (\$4.63 per share, on a diluted basis) as compared to a net income of \$36,176,000 (\$3.97 per share, on a diluted basis) in fiscal 2010. Backlog at March 31, 2011 was \$215,228,000, a 10% increase from the year-end backlog of \$195,729,000 reported at March 31, 2010.

2011 Compared to 2010

Results of Operations Total net sales and contract revenues of \$278,576,000 in fiscal 2011 increased by \$36,483,000 or 15% from the previous year. Revenues related to product sales and contracts increased by \$27,108,000 or 16% due to the following factors. Z Backscatter system revenues increased by \$18,744,000, attributable to sales of both our ZBV Militarized Trailer system, which was introduced in fiscal 2009, and our Z Backscatter Van, which had an increase in number of units sold during the year to U.S. government and international customers. Parcel Inspection system sales increased by \$7,520,000 from the prior year due to an increase in the number of units delivered in the current year. Cargo Inspection system revenues increased by \$3,095,000 over the previous year as the volume of systems under construction and/or delivered increased over the previous year. Contract research and development (CRAD) revenues increased by \$2,515,000, which was attributable primarily to two contracts worked during the year. These revenue increases were offset by a decrease in aftermarket sales of \$4,764,000 due to a large spare parts order fulfilled in fiscal 2010 which was not repeated in fiscal 2011. Service revenues increased in fiscal 2011 by \$9,375,000 or 12% to \$85,758,000, due primarily to new service contracts entered into in the current year on the increased installed base.

In both fiscal 2011 and fiscal 2010, 68% of our revenues were from domestic (based upon the customer's country of domicile) customers. In fiscal 2011, we had sales to three customers which accounted for 53% of total sales. In fiscal 2010, we had sales to two customers which accounted for 36% of total sales.

Cost of sales and contracts of \$149,374,000 in fiscal 2011 increased by \$18,351,000 or 14% from the previous year. Cost of product sales and contracts of \$104,062,000 in fiscal 2011 increased by \$12,508,000 or 14% as compared to the prior year. Cost of product sales and contracts totaled 54% of revenues in fiscal 2011, as compared to 55% of revenues in fiscal 2010. This decrease in costs as a percentage of revenue is due primarily to an increase in shipments of higher margin Z Backscatter systems over the prior year and improved margins on both Cargo and Parcel Inspection systems as a result of increased volume. The cost of service revenues increased \$5,843,000 or 15% from the prior year. Cost of service revenues totaled 53% of revenues in fiscal 2011 as compared to 52% of revenues in fiscal 2010. This increase in costs as a percentage of revenue is due primarily to increased material and travel-related costs being incurred to service equipment under fixed price service contracts as compared to the prior year.

Selling, general and administrative expenses in fiscal 2011 increased by \$5,157,000 to \$42,139,000 as compared to fiscal 2010 and represented 15% of revenues in both fiscal 2011 and fiscal 2010. The increase in selling, general and administrative expenses over the prior period was primarily the result of: 1) an increase in payroll and payroll related costs of \$2,430,000 attributable to increased headcount; 2) an increase in legal fees of \$876,000 attributable primarily to due diligence activities on a potential acquisition that was abandoned earlier in the year and other routine business activities; 3) an increase in incentive compensation costs of \$761,000 as we achieved certain incentive compensation goals in the current year; 4) an increase in travel expenses of \$644,000 related to sales and marketing related efforts; and 5) an increase in marketing costs of \$456,000 related primarily to trade show and demonstration related costs.

Company-funded research and development spending increased by \$2,855,000 to \$22,619,000 in fiscal 2011 which is a 14% increase as compared to the \$19,764,000 spent in fiscal 2010. Research and development spending represented 8% of revenues in both fiscal 2011 and fiscal 2010. The fiscal 2011 research and development efforts were focused on new product development, new technologies, the development of new applications, and design modifications and enhancements to existing products.

Other income was \$431,000 in income in fiscal 2011 as compared to \$522,000 in income in fiscal 2010.

We reported pre-tax income of \$64,875,000 in fiscal 2011 as compared to a pre-tax income of \$54,846,000 in the previous fiscal year primarily due to the items noted above. We recorded income tax expense of \$22,058,000 in fiscal 2011 as compared to \$18,670,000 in the prior fiscal year. Our effective tax rate was 34.0% in both fiscal 2011 and in fiscal 2010, as decreases in fiscal 2011 state income tax credits were offset by increased usage of manufacturing and research and development credits.

We reported net income of \$42,817,000 in fiscal 2011 as compared to net income of \$36,176,000 in fiscal 2010.

2010 Compared to 2009

Results of Operations Total net sales and contract revenues of \$242,093,000 in fiscal 2010 increased by \$23,726,000 or 11% from the previous year. Revenues related to product sales and contracts increased by \$22,779,000 or 16% due to the following factors. Cargo Inspection system revenues increased by \$17,279,000 over the previous year as the volume of system installation and acceptances increased over the previous year. The number of customers receiving Cargo Inspection systems in fiscal 2010 also increased as the client base for these products expanded on increased orders. Z Backscatter system revenues increased by \$15,679,000, attributable to sales of our ZBV Militarized Trailer system introduced in fiscal 2009 and an increase in number of units sold to both international customers and to the U.S. government and the Department of Defense. These revenue increases were offset by a decrease in contract research and development (CRAD) revenues of \$9,925,000 as one large CRAD contract terminated in the fourth quarter of the fiscal 2009. Parcel Inspection system sales decreased \$936,000 from fiscal 2009 due to a decrease in the number of units delivered in fiscal 2010. Service revenues increased in fiscal 2010 by \$947,000 or 1% to \$76,383,000 due primarily to new service contracts entered into in fiscal 2010 on the increased installed base.

In fiscal 2010, 68% of our revenues were from domestic (based upon the customer's country of domicile) customers as compared to 63% in fiscal 2009. In fiscal 2010, we had sales to two customers which accounted for 36% of total sales. In fiscal 2009, we had sales to two customers which accounted for 34% of total sales.

Cost of sales and contracts of \$131,023,000 in fiscal 2010 increased by \$5,621,000 or 4% from the previous year. Cost of product sales and contracts of \$91,554,000 increased by \$8,480,000 or 10% as compared to the prior year. Cost of product sales and contracts totaled 55% of revenues in fiscal 2010 as compared to 58% of revenues in fiscal 2009. This decrease in costs as a percentage of revenue is due primarily to an increase in shipments of higher margin Z Backscatter systems over the prior year and improved margins on Cargo Inspection system projects with higher per unit revenues and decreased per unit costs as we overcame the learning curve and streamlined the production of the new products introduced in the past two years. The cost of service revenues decreased \$2,859,000 or 7% from the prior year. Cost of service revenues totaled 52% of revenues in fiscal 2010 as compared to 56% of revenues in fiscal 2009. This decrease in costs as a percentage of revenue is due primarily to improved performance of units under contract resulting in reduced replacement material costs from the prior year.

Selling, general and administrative expenses in fiscal 2010 increased by \$4,111,000 to \$36,982,000 as compared to fiscal 2009 and represented 15% of revenues in both fiscal 2010 and fiscal 2009. This increase in spending can be attributed to increased incentive compensation costs (\$2,100,000) as we achieved certain incentive compensation goals in fiscal 2010, increased payroll and payroll related costs (\$867,000) due to increased headcount, increased marketing and bid and proposal related costs (\$985,000) and increased consulting costs (\$433,000) as we utilized additional marketing consultants in fiscal 2010. These expenses were offset in part by a decrease in legal fees (\$509,000) due to the settlement in fiscal 2010 of some patent litigation, and a decrease in accounting fees (\$181,000) as we reduced certain outsourced accounting and compliance activities.

Company-funded research and development spending increased by \$1,694,000 to \$19,764,000 in fiscal 2010 which is a 9% increase as compared to the \$18,070,000 spent in fiscal 2009. Research and development spending represented 8% of revenues in both fiscal 2010 and fiscal 2009. The fiscal 2010 research and development efforts were focused on new product development, new technologies, the development of new applications, and design modifications and enhancements to existing products.

Other income (expense) was \$522,000 in income in fiscal 2010 as compared to \$1,676,000 in income in fiscal 2009. Interest and investment income decreased by \$1,687,000 due to reduced yields on all investments and a need to move to more conservative, shorter term, lower yield investments as a result of the economic recession.

We reported pre-tax income of \$54,846,000 in fiscal 2010 as compared to a pre-tax income of \$43,700,000 in fiscal 2009 primarily due to the items noted above. We recorded income tax expense of \$18,670,000 in fiscal 2010 as compared to \$15,347,000 in fiscal 2009. Our effective tax rate was 34.0% in fiscal 2010 as compared to 35.1% in fiscal 2009. This decrease in rate can be attributed to a decrease in state taxes attributable to changes in state apportionment and other state tax planning activities offset by an increase in non-deductible stock compensation expense and an establishment of a valuation reserve on certain state tax credits.

We reported net income of \$36,176,000 in fiscal 2010 as compared to net income of \$28,353,000 in fiscal 2009.

Liquidity and Capital Resources

Cash and cash equivalents at year-end increased by \$25,232,000 to \$60,144,000 at March 31, 2011 as compared to \$34,912,000 at March 31, 2010. In addition, we had \$110,141,000 and \$144,166,000 of short-term investments at March 31, 2011 and March 31, 2010, respectively.

Cash flow provided by operations of \$33,204,000 resulted from the following:

- Reported net income of \$42,817,000 adjusted for the following non-cash items:
 - Depreciation and amortization of \$4,961,000;
 - Stock compensation expense of \$5,216,000;
 - Increases in deferred income taxes of \$2,716,000;
 - The amortization of bond premiums of \$2,057,000; and
 - The provision for contracts, inventory and accounts receivable reserves of \$1,608,000.
- An increase in accrued expenses and other liabilities of \$4,344,000 from the prior year attributable primarily to increased accruals for incentive compensation and sales commissions.
- A decrease in prepaid expenses and other assets of \$3,048,000 from the prior year due to the utilization in fiscal 2011 of vendor prepayments and prepaid agent commissions outstanding at March 31, 2010.

These cash contributors were offset by:

- An increase in unbilled costs and fees of \$15,004,000 and a decrease in customer deposits of \$4,521,000 due to the timing of billing milestones and revenue recognition on projects in process at year end.
- An increase in inventories of \$3,139,000 due primarily to raw material component purchases for systems introduced in fiscal 2011.
- A decrease in accrued income taxes of \$2,267,000 due to the timing of the payment of estimated taxes in fiscal 2011.
- A decrease in deferred revenue of \$2,034,000 as certain service contracts, which were billed in fiscal 2010 at the outset of the contract period, were earned during fiscal 2011.
- A decrease in accounts payable of \$1,592,000 due to the timing of check runs at the respective fiscal year ends.

Net cash of \$26,683,000 was provided by investing activities in fiscal 2011. We purchased \$160,422,000 in short-term investments during the year, and had maturities of \$192,406,000 on short-term investments. Fiscal 2011 capital expenditures totaled \$5,304,000 versus \$3,266,000 for fiscal 2010. Investments in fixed assets were comprised primarily of information technology expenditures, leasehold improvements, and equipment used in production.

At March 31, 2011, short-term investments and cash equivalents were invested primarily in commercial paper, corporate debentures/bonds, treasury bills, government agency bonds, money market funds and certificates of deposit. We do 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 to 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 \$34,655,000 in fiscal 2011. We used \$29,425,000 to collateralize outstanding standby letters of credit upon the expiration of our Loan and Security Agreement (see below). In addition we made quarterly dividend payments totaling \$10,866,000 during the year and used \$3,736,000 to repurchase 51,269 shares as part of our Stock Repurchase Program. Cash provided by financing activities consisted primarily of the receipt of \$6,943,000 in proceeds from the exercise of employee stock options.

We had in place a Loan and Security Agreement with Silicon Valley Bank which provided a \$30.0 million facility to support routine letters of credit and working capital needs. The Loan and Security Agreement expired on November 12, 2010 and we decided not to renew this facility given the cash flows provided from operations and our available cash and investments balance. At the time of such decision, we had not drawn on this facility since June of 2002 and had used this credit facility exclusively to issue standby letters of credit.

Under the terms of this Loan and Security Agreement, we were required to pay certain one-time facility fees which were being amortized over the life of the facility and other unused credit fees. Total expenses incurred related to these fees were \$94,000, \$227,000 and \$214,000 in fiscal 2011, 2010, and 2009, respectively.

In the normal course of business, we may provide certain customers and potential customers with performance guarantees, which are generally backed by standby letters of credit. In general, we would only be liable for the amount of these guarantees in the event of default in the performance of its obligations, the probability of which is remote in management's opinion. At March 31, 2011, we had outstanding \$28,041,000 in standby letters of credit. Upon expiration of our Loan and Security Agreement as noted above, these outstanding standby letters of credit became cash-secured at amounts ranging from 105% to 110% of the value of outstanding letters of credit. This resulted in a restricted cash balance of \$29,460,000 at March 31, 2011 of which \$9,062,000 was considered long-term restricted cash due to the expiration date of the underlying letters of credit.

In recent years, we have funded our operations and capital expenditures with cash generated by operations, including deposits from customers on long-term projects and from proceeds received from option exercises. We currently have no line of credit facility and believe that our cash flows from operations, and cash and investments on hand are sufficient to meet the current and foreseeable operating requirements of our business.

Contractual Obligations: We lease certain facilities under non-cancelable leases. In addition, in the normal course of business, we enter into purchase orders with our vendors for the purchase of materials or services to meet our production needs. The following table summarizes our contractual obligations as of March 31, 2011.

(In thousands)	Payment due by period				
	Total	Less than 1 year	1-3 years	3-5 years	After 5 years
Recorded Contractual Obligations:					
Lease financing liability	\$ 7,076	\$ 1,321	\$ 2,841	\$ 2,914	\$ —
Other long-term obligations	34	8	17	9	—
Unrecorded Contractual Obligations:					
Operating leases	1,626	651	505	470	—
Purchase commitments	16,589	15,170	1,419	—	—
Total contractual obligations	\$ 25,325	\$ 17,150	\$ 4,782	\$ 3,393	\$ —

Inflation: We do not believe that inflation has had a material effect on our results of operations in each of fiscal 2011, 2010 and 2009. There can be no assurance, however, that our business will not be affected by inflation in the future.

Off-Balance Sheet Arrangements: During the fiscal year ended March 31, 2011 we did not have any material off-balance sheet arrangements.

Critical Accounting Policies

We consider certain accounting policies related to revenue recognition, inventories and related allowances for obsolete and excess inventory, and income taxes to be critical policies due to the estimation processes involved in each.

Revenue Recognition: We recognize certain Cargo Inspection, Z Backscatter, Parcel and Personnel Screening System and after-market part sales, in accordance with Financial Accounting Standards Board Accounting Standards Codification ("FASB ASC") 605-10, *Revenue Recognition*, 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) collectability is reasonably assured.

Infrequently, the Company receives requests from customers to hold product being purchased from us for a valid business purpose. We recognize revenue for such bill and hold arrangements provided the transaction meets, at a minimum, the following criteria: a valid business purpose for the arrangement exists; risk of ownership of the purchased product has been transferred to the buyer; there is a fixed delivery date that is reasonable and consistent with the buyer's business purpose; the product is ready for shipment; the Company has no continuing performance obligation in regards to the product and the products have been segregated from our inventories and cannot be used to fill other orders received. There were no products being held under these arrangements at March 31, 2011, March 31, 2010 or March 31, 2009.

Certain of our contracts are multiple-element arrangements, which include standard products, custom-built systems or contract engineering projects, services (such as training), and service and maintenance contracts. In accordance with FASB ASC 605-25, *Revenue Recognition – Multiple Element Arrangements* as amended by Accounting Standards Update No. 2009-13 adopted retroactively to April 1, 2009, 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 we receive is allocated among the separate units of accounting based on their relative selling prices 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. Generally, there is no customer right of return provision 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; and (2) 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 one to three years 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 our estimated final costs. Revisions in costs and profit estimates are reflected in the period in which the facts causing the revision become known.

We recognize sales for our 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 certain of these systems are perfunctory and inconsequential and the costs of installation at the customer's site are accrued at the time of revenue recognition. We have 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 as service is performed over the length of the contract which reasonably approximates the period service revenues are earned.

Training and service contracts deliverables are accounted for separately from the delivered product elements as our undelivered products have value to our customers on a stand-alone basis. Accordingly, service revenue is deferred and recognized as such services are performed.

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.

We record 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.

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, 2011, \$17,016,000 (99%) is expected to be billed and collected during fiscal 2012.

Under the terms of certain of our cost reimbursement contracts, we are not permitted to bill customers a specified portion of the contract value until completion. Such retainages (approximately \$76,000 and \$58,000 at March 31, 2011 and March 31, 2010, 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 our direct and indirect costs and expenses under these cost reimbursement contracts and our 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 we can give no assurances, in the opinion of management, any adjustments likely to result from inquiries or audits of our contracts will not have a material adverse impact on our financial condition or results 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. We regularly review inventory quantities on hand and record 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 our 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, we would be required to recognize such costs in our cost of goods sold at the time of such determination. Likewise, if inventory is determined to be undervalued, we 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 we make 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 our inventory and reported operating results.

Income Taxes: We account for income taxes in accordance with FASB ASC 740, *Income Taxes*. Accordingly, we recognize 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. We evaluate the need for a valuation allowance against our net deferred tax assets at year end based upon our three year cumulative income and our projections of future income, and record 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 October 2009, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update 2009-14, *Revenue Recognition (Topic 605)—Applicability of AICPA Statement of Position 97-2 to Certain Arrangements That Include Software Elements* (ASU 2009-14). ASU 2009-14 excludes tangible products containing software components and non-software components that function together to deliver the product’s essential functionality from the scope of FASB Accounting Standards Codification (“ASC”) 605-985, *Software-Revenue Recognition*. ASU 2009-14 shall be applied on a prospective basis to revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. Early adoption was permitted. Upon adoption, the Company must apply ASU 2009-14 retrospectively to the beginning of the fiscal year of adoption or to all periods presented. The adoption of ASU 2009-14 is not expected to have a material impact on the Company’s financial position, results of operations or cash flows.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The cash accounts for our operations in Hong Kong, England, the Netherlands, and Abu Dhabi are maintained in Hong Kong dollars, pounds sterling, Euros and dirham, respectively. The gains and losses from foreign currency transactions are included in the condensed consolidated statements of operations for the period and were immaterial. In the fourth quarter of fiscal 2010, we purchased a foreign currency put option which provided us with the option to exchange Euros for U.S. dollars at a fixed exchange rate such that, if the Euro were to depreciate against the U.S. dollar to predetermined levels as set by the contract, we could exercise our option and mitigate our foreign currency exchange losses. This put option was sold during the quarter ended September 30, 2010 at a price near cost resulting in no material gain or loss. A hypothetical 10 percent change in foreign currency rates would not have a material impact on our results of operations or financial condition.

As of March 31, 2011, we held short-term investments and cash equivalents consisting of commercial paper, corporate debentures/bonds, treasury bills, government agency bonds, money market funds and certificates of deposit. Our primary objective with our investment portfolio is to invest available cash while preserving principal and meeting liquidity needs. These investments have an average interest rate of approximately 0.3% 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.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The financial statements and supplementary financial information listed in the Index to Consolidated Financial Statements on page 40 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 Exchange Act. Based upon their evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of March 31, 2011 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 periods specified in the SEC'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 recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Management's Annual 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, 2011. McGladrey & Pullen, LLP, our independent registered public accounting firm, has audited the effectiveness of our internal control over financial reporting as of March 31, 2011, and has issued their report thereon which is included in this Annual Report on Form 10-K and incorporated herein by reference.

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, 2011 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 Business Conduct and Ethics that applies to our Board of Directors, Chief Executive Officer, Chief Financial Officer, and all employees of the Company. The Company's Code of Business Conduct and Ethics 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 5.05 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 our Definitive Proxy Statement relating to the 2011 Annual Meeting of Stockholders, which we expect to file with the Securities and Exchange Commission on or about July 29, 2011.

ITEM 11. EXECUTIVE COMPENSATION

The information called for by this item is hereby incorporated by reference from our Definitive Proxy Statement relating to the 2011 Annual Meeting of Stockholders, which we expect to file with the Securities and Exchange Commission on or about July 29, 2011.

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 our Definitive Proxy Statement relating to the 2011 Annual Meeting of Stockholders, which we expect to file with the Securities and Exchange Commission on or about July 29, 2011.

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

The information called for by this item is hereby incorporated by reference from our Definitive Proxy Statement relating to the 2011 Annual Meeting of Stockholders, which we expect to file with the Securities and Exchange Commission on or about July 29, 2011.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information called for by this item is hereby incorporated by reference from our Definitive Proxy Statement relating to the 2011 Annual Meeting of Stockholders, which we expect to file with the Securities and Exchange Commission on or about July 29, 2011.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The financial statements listed in the Index to Consolidated Financial Statements on page 40 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 63 are filed as part of this report, and such Index is incorporated in this item by reference.

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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

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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 sheet of American Science and Engineering, Inc. and subsidiaries ("the Company") as of March 31, 2011, and the related consolidated statements of operations, stockholders' equity and comprehensive income, and cash flows for the year ended March 31, 2011. We also have audited American Science and Engineering, Inc. and subsidiaries' internal control over financial reporting as of March 31, 2011, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's 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 included in the accompanying Management's Report on 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 audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (a) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (b) 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 (c) 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of American Science and Engineering, Inc. and subsidiaries as of March 31, 2011, and the consolidated results of its operations and its cash flows for the year ended March 31, 2011, 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, 2011, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ McGladrey & Pullen, LLP

Boston, Massachusetts
June 9, 2011

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 sheet of American Science and Engineering, Inc. and subsidiary ("the Company") as of March 31, 2010 and the related consolidated statements of operations, stockholders' equity and comprehensive income and cash flows for each of the years ended March 31, 2010 and 2009. Management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the 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 audits 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. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of American Science and Engineering, Inc. and subsidiary as of March 31, 2010, and the consolidated results of their operations, stockholders' equity and their cash flows for each of the two years in the period ended March 31, 2010 in conformity with accounting principles generally accepted in the United States of America.

/s/ CATURANO AND COMPANY, P.C.

Boston, Massachusetts
June 7, 2010

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
MARCH 31, 2011 AND 2010

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

	2011	2010
Assets		
Current assets:		
Cash and cash equivalents	\$ 60,144	\$ 34,912
Restricted cash and investments	20,398	35
Short-term investments, at fair value	110,141	144,166
Accounts receivable, net of allowances of \$334 at March 31, 2011 and \$330 at March 31, 2010	37,180	37,735
Unbilled costs and fees	17,082	2,078
Inventories	46,922	45,387
Prepaid expenses and other current assets	6,698	8,998
Deferred income taxes	3,469	2,389
Total current assets	302,034	275,700
Building, equipment and leasehold improvements, net	18,559	18,216
Restricted cash	9,062	—
Deferred income taxes	6,779	5,171
Other assets, net	140	766
Total assets	\$ 336,574	\$ 299,853
 Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 9,378	\$ 10,970
Accrued salaries and benefits	15,988	13,663
Accrued warranty costs	1,225	965
Accrued income taxes	1,936	4,203
Deferred revenue	16,924	14,975
Customer deposits	9,193	13,714
Current portion of lease financing liability	1,321	1,302
Other current liabilities	5,460	3,913
Total current liabilities	61,425	63,705
Lease financing liability, net of current portion	5,755	7,075
Deferred revenue	3,288	7,271
Other long term liabilities	26	34
Total liabilities	70,494	78,085
Commitments and contingencies (Notes 2 and 10)		
Stockholders' equity:		
Preferred stock, no par value		
Authorized—100,000 shares		
Issued—None	—	—
Common stock, \$0.66 ² / ₃ par value		
Authorized—20,000,000 shares		
Issued and outstanding— 9,169,965 shares at March 31, 2011 and 9,013,508 shares at March 31, 2010	6,113	6,008
Capital in excess of par value	110,087	97,819
Accumulated other comprehensive income (loss), net	21	33
Retained earnings	149,859	117,908
Total stockholders' equity	266,080	221,768
Total liabilities and stockholders' equity	\$ 336,574	\$ 299,853

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

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
FOR THE YEARS ENDED MARCH 31, 2011, 2010, AND 2009
(Amounts in thousands except per share amounts)

	<u>2011</u>	<u>2010</u>	<u>2009</u>
Net sales and contract revenues:			
Net product sales and contract revenues	\$ 192,818	\$ 165,710	\$ 142,931
Net service revenues	85,758	76,383	75,436
Total net sales and contract revenues	<u>278,576</u>	<u>242,093</u>	<u>218,367</u>
Cost of sales and contracts:			
Cost of product sales and contracts	104,062	91,554	83,074
Cost of service revenues	45,312	39,469	42,328
Total cost of sales and contracts	<u>149,374</u>	<u>131,023</u>	<u>125,402</u>
Gross profit	<u>129,202</u>	<u>111,070</u>	<u>92,965</u>
Operating expenses:			
Selling, general and administrative expenses	42,139	36,982	32,871
Research and development expenses	22,619	19,764	18,070
Total operating expenses	<u>64,758</u>	<u>56,746</u>	<u>50,941</u>
Operating income	<u>64,444</u>	<u>54,324</u>	<u>42,024</u>
Other income (expense):			
Interest and investment income, net	678	701	2,388
Interest expense	(110)	(136)	(144)
Other, net	(137)	(43)	(568)
Total other income	<u>431</u>	<u>522</u>	<u>1,676</u>
Income before provision for income taxes	<u>64,875</u>	<u>54,846</u>	<u>43,700</u>
Provision for income taxes	<u>22,058</u>	<u>18,670</u>	<u>15,347</u>
Net income	<u>\$ 42,817</u>	<u>\$ 36,176</u>	<u>\$ 28,353</u>
Income per share			
— Basic	\$ 4.73	\$ 4.06	\$ 3.26
— Diluted	\$ 4.63	\$ 3.97	\$ 3.18
Weighted average shares			
— Basic	9,045	8,900	8,692
— Diluted	9,247	9,107	8,928
Dividends declared per share	\$ 1.20	\$ 0.90	\$ 0.80

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

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE INCOME
FOR THE YEARS ENDED MARCH 31, 2011, 2010, AND 2009

(Amounts in thousands, except share amounts)

	Common Stock Shares	Common Stock Par Value	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comp. Income (Loss)	Total	Comprehensive Income
Balance, March 31, 2008	8,945,663	\$ 5,963	\$ 91,544	\$ 68,451	\$ 114	\$ 166,072	
Net income	—	—	—	28,353	—	28,353	\$ 28,353
Repurchase of common stock	(349,327)	(233)	(17,827)	—	—	(18,060)	—
Exercise of stock options	161,753	108	5,795	—	—	5,903	—
Issuance of stock under employee compensation plans	13,117	8	768	—	—	776	—
Issuances of restricted stock, net of forfeitures	39,554	27	(27)	—	—	—	—
Tax benefit accrued on stock option exercises	—	—	1,284	—	—	1,284	—
Compensation expense on stock options	—	—	1,458	—	—	1,458	—
Compensation expense on restricted stock and restricted stock units	—	—	3,482	—	—	3,482	—
Dividends declared	—	—	—	(7,041)	—	(7,041)	—
Other	—	—	—	—	(161)	(161)	(161)
Balance, March 31, 2009	8,810,760	5,873	86,477	89,763	(47)	182,066	\$ 28,192
Net income	—	—	—	36,176	—	36,176	\$ 36,176
Repurchase of common stock	(51,299)	(34)	(2,888)	—	—	(2,922)	—
Exercise of stock options	158,863	106	6,302	—	—	6,408	—
Issuance of stock under employee compensation plans	14,192	9	941	—	—	950	—
Issuances of restricted stock, net of forfeitures	80,992	54	(54)	—	—	—	—
Tax benefit accrued on stock option exercises	—	—	1,087	—	—	1,087	—
Compensation expense on stock options	—	—	1,264	—	—	1,264	—
Compensation expense on restricted stock and restricted stock units	—	—	4,690	—	—	4,690	—
Dividends declared	—	—	—	(8,031)	—	(8,031)	—
Other	—	—	—	—	80	80	80
Balance, March 31, 2010	9,013,508	\$ 6,008	\$ 97,819	\$ 117,908	\$ 33	\$ 221,768	\$ 36,256
Net income	—	—	—	42,817	—	42,817	42,817
Repurchase of common stock	(51,269)	(34)	(3,702)	—	—	(3,736)	—
Exercise of stock options	197,669	132	6,811	—	—	6,943	—
Issuance of stock under employee compensation plans	2,939	2	218	—	—	220	—
Issuances of restricted stock, net of forfeitures	7,118	5	(5)	—	—	—	—
Tax benefit accrued on stock option exercises	—	—	3,730	—	—	3,730	—
Compensation expense on stock options	—	—	1,703	—	—	1,703	—
Compensation expense on restricted stock and restricted stock units	—	—	3,513	—	—	3,513	—
Dividends declared	—	—	—	(10,866)	—	(10,866)	—
Net change in unrealized gains (losses) on investment securities, available-for-sale, net of tax	—	—	—	—	(12)	(12)	(12)
Balance, March 31, 2011	9,169,965	\$ 6,113	\$ 110,087	\$ 149,859	\$ 21	\$ 266,080	\$ 42,805

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

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED MARCH 31, 2011, 2010, AND 2009
(Amounts in thousands)

	2011	2010	2009
Cash flows from operating activities:			
Net income	\$ 42,817	\$ 36,176	\$ 28,353
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	4,961	4,538	4,294
Provisions for contracts, inventory, and accounts receivable reserves	1,608	1,170	2,790
Gain on sale of fixed assets	(3)	—	—
Amortization of bond premium (discount)	2,057	1,119	(384)
Stock compensation expense	5,216	5,954	4,940
Other	(122)	122	—
Deferred income taxes	(2,716)	(463)	(289)
Change in assets and liabilities:			
Accounts receivable	551	(835)	(9,622)
Unbilled costs and fees	(15,004)	4,238	(202)
Inventories	(3,139)	1,474	(10,409)
Prepaid expenses and other assets	3,048	(1,269)	(2,964)
Accrued income taxes	(2,267)	4,140	63
Accounts payable	(1,592)	331	(2,021)
Deferred revenue	(2,034)	(10,453)	5,873
Customer deposits	(4,521)	(1,104)	8,271
Accrued expenses and other current liabilities	4,344	1,138	6,483
Sale of leased equipment	—	—	116
Total adjustments	(9,613)	10,100	6,939
Net cash provided by operating activities	33,204	46,276	35,292
Cash flows from investing activities:			
Proceeds from sales and maturities of short-term investments	192,406	104,261	101,966
Purchases of short-term instruments	(160,422)	(213,157)	(65,347)
Proceeds from sale of fixed assets	3	—	—
Purchases of property and equipment	(5,304)	(3,266)	(2,350)
Net cash provided by (used for) investing activities	26,683	(112,162)	34,269
Cash flows from financing activities:			
Decrease in restricted cash and investments	(29,425)	—	2,488
Repurchase of shares of common stock	(3,736)	(2,922)	(18,060)
Payment of common stock dividend	(10,866)	(8,031)	(7,041)
Repayment of leasehold financing	(1,301)	(1,163)	(1,134)
Proceeds from exercise of stock options	6,943	6,408	5,903
Reduction of income taxes paid due to the tax benefit from employee stock option expense	3,730	1,087	1,284
Net cash used for financing activities	(34,655)	(4,621)	(16,560)
Net increase (decrease) in cash and cash equivalents	25,232	(70,507)	53,001
Cash and cash equivalents at beginning of year	34,912	105,419	52,418
Cash and cash equivalents at end of year	\$ 60,144	\$ 34,912	\$ 105,419
Supplemental disclosures of cash flow information:			
Interest paid	\$ 110	\$ 185	\$ 144
Income taxes paid	\$ 24,079	\$ 15,661	\$ 13,625
Non-cash transactions:			
Issuance of stock for 401K match	\$ 220	\$ 950	\$ 776

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

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. NATURE OF OPERATIONS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations and Basis of Presentation

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 products for sale primarily to U.S. and foreign government agencies.

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. 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 risk of loss to be minimal.

Restricted Cash and Investments

The Company's former loan and security agreement with its bank required certain cash and investment balances to be restricted as collateral against outstanding standby letters of credit if the Company exceeded its credit availability under this credit facility. Upon expiration of that loan and security agreement in November of 2010, all outstanding standby letters of credit became restricted cash-secured at amounts ranging from 105% to 110% of the outstanding letters of credit.

Short-term Investments and Cash Equivalents

Short-term investments and cash equivalents consist of investments in commercial paper, corporate debentures/bonds, treasury bills, government agency bonds, money market funds and certificates of deposit. These investments are classified as available-for-sale and are recorded at their fair 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.

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. It is the Company's policy to write off uncollectible receivables when management determines the receivable has become uncollectible. Activity in the allowance for doubtful accounts is as follows:

(In thousands)	Balance at Beginning of Year	Charged to Costs and Expenses	Deductions or Write- offs Charged to Reserves	Balance at End of Year
2011	\$ 330	\$ 4	\$ —	\$ 334
2010	\$ 286	\$ 56	\$ 12	\$ 330
2009	\$ 230	\$ 249	\$ 193	\$ 286

Included in accounts receivable and unbilled costs and fees at March 31, 2011 and 2010 are \$30,417,000 and \$23,952,000, 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 no activity in the reserve for unbilled costs and fees during fiscal 2011, 2010 and 2009.

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, 2011 and 2010, net of inventory reserves, were as follows:

<u>(In thousands)</u>	<u>2011</u>	<u>2010</u>
Raw materials, completed subassemblies and spares parts	\$ 27,436	\$ 19,821
Work-in-process	16,828	15,813
Finished goods	2,658	9,753
Total	\$ 46,922	\$ 45,387

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.

Activity in the reserve for excess or obsolete inventory is as follows:

<u>(In thousands)</u>	<u>Balance at Beginning of Year</u>	<u>Charged to Costs and Expenses</u>	<u>Deductions / Write-offs Charged to Reserves</u>	<u>Balance at End of Year</u>
2011	\$ 3,982	\$ 1,604	\$ 704	\$ 4,882
2010	\$ 4,165	\$ 1,114	\$ 1,297	\$ 3,982
2009	\$ 2,187	\$ 2,542	\$ 564	\$ 4,165

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 1-25 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, 2011 and 2010.

<u>(In thousands)</u>	<u>Estimated Useful Lives</u>	<u>2011</u>	<u>2010</u>
Building and leasehold improvements	Lesser of 25 years or remaining lease term	\$ 20,047	\$ 19,581
Equipment and tooling	5-10 years	4,522	3,240
Computer equipment and software	5 years	19,539	17,977
Furniture and fixtures	5-7 years	2,420	1,703
Demo and test equipment	2-5 years	4,796	3,741
Leased equipment	1-2 years or life of lease	63	63
Motor vehicles	3 years	72	71
Total		51,459	46,376
Less accumulated depreciation and amortization		(32,900)	(28,160)
Building, equipment and leasehold improvements, net		\$ 18,559	\$ 18,216

Revenue Recognition

The Company recognizes certain Cargo Inspection, Z Backscatter and Parcel and Personnel Screening system sales and after-market part sales, in accordance with Financial Accounting Standards Board Accounting Standards Codification ("FASB ASC") 605-10, *Revenue Recognition*, 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) collectability is reasonably assured.

Infrequently, the Company receives requests from customers to hold product being purchased for a valid business purpose. The Company recognizes revenue for such bill and hold arrangements provided the transaction meets, at a minimum, the following criteria: a valid business purpose for the arrangement exists; risk of ownership of the purchased product has transferred to the buyer; there is a fixed delivery date that is reasonable and consistent with the buyer's business purpose; the product is ready for shipment; the Company has no continuing performance obligation in regards to the product and the products have been segregated from its inventories and cannot be used to fill other orders received. There was no product being held under these arrangements at March 31, 2011, March 31, 2010 or March 31, 2009.

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 and maintenance contracts. In the quarter ended December 31, 2009 the Company adopted FASB ASC 605-25, *Revenue Recognition – Multiple Element Arrangements* as amended by Accounting Standards Update No. 2009-13, retroactively to April 1, 2009. This adoption did not have a material impact on the Company's previously reported Consolidated Financial Statements. In accordance with FASB ASC 605-25, 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 received is allocated among the separate units of accounting based on their relative selling prices 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. Generally, there is no customer right of return provision in the Company's sales agreements. Revenues are allocated to a delivered product or service when the following criteria are met: (1) the delivered item has value to the customer on a standalone basis; and (2) 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 one to three years 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.

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.

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 certain of 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 as service is performed 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.

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. Accordingly, this service revenue 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 consolidated balance sheets. Of the amounts in unbilled costs and fees at March 31, 2011, \$17,016,000 (99%) is expected to be billed and collected during fiscal 2012.

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 \$76,000 and \$58,000 at March 31, 2011 and March 31, 2010, 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.

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 or parts and labor 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 as service is performed over the life of the contract, which represents the period over which 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.

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, 2011, 2010 and 2009.

Accrued Salaries and Benefits

Accrued salaries and benefits at March 31, 2011 and March 31, 2010 include the following:

(In thousands)	2011	2010
Accrued payroll and payroll related taxes	\$ 1,727	\$ 1,162
Accrued benefits	—	227
Accrued incentive compensation	12,227	10,485
Accrued vacation	2,034	1,789
Total accrued salaries and benefits	<u>\$ 15,988</u>	<u>\$ 13,663</u>

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 \$22,619,000, \$19,764,000 and \$18,070,000, in fiscal 2011, 2010, and 2009, respectively. In addition, the Company recognized revenues of \$4,821,000, \$2,306,000 and \$12,524,000, in fiscal 2011, 2010, and 2009, 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, restricted cash, short-term investments, accounts receivable, unbilled costs and fees, accounts payable and letters of credit. The recorded amounts of these instruments approximate their fair value (see Note 8).

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, 2011, 2010, and 2009, respectively, common stock equivalents of approximately 35,000, 132,000, and 215,000 are excluded from diluted earnings per share, as their effect is anti-dilutive.

(In thousands except per share amounts)	March 31, 2011	March 31, 2010	March 31, 2009
Earnings per Share — Basic:			
Net income	\$ 42,817	\$ 36,176	\$ 28,353
Weighted average number of common shares outstanding — basic	9,045	8,900	8,692
Income per share — basic	\$ 4.73	\$ 4.06	\$ 3.26
Earnings per Share — Diluted:			
Net income	\$ 42,817	\$ 36,176	\$ 28,353
Weighted average number of common shares outstanding — basic	9,045	8,900	8,692
Assumed exercise of stock options, warrants, restricted stock and restricted stock units, using the treasury stock method	202	207	236
Weighted average number of common and potential common shares Outstanding — diluted	<u>9,247</u>	<u>9,107</u>	<u>8,928</u>
Income per share — diluted	\$ 4.63	\$ 3.97	\$ 3.18

Income Taxes

The Company accounts for income taxes in accordance with FASB ASC 740, *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. The Company recognizes interest and penalties related to income tax matters in other income and expenses.

Concentrations of Credit Risk

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of cash and cash equivalents, restricted cash, short-term investments and accounts and unbilled receivables. 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, treasury bills, government agency bonds, and certificates of deposit.

Three customers, one agency of the U.S. government, one U.S. government subcontractor and one international customer, accounted for 62% of the accounts receivable balance at March 31, 2011. The Company generally requires letters of credit and/or deposits or prepayments from international customers. The Company has not experienced any significant losses from uncollectible accounts.

Common Stock Dividends

In May of 2007, the Company began declaring quarterly cash dividends for its common stock shareholders. Common stock cash dividends declared during the fiscal year ended March 31, 2011 were as follows:

Date Declared	Dividend per common share
May 11, 2010	\$ 0.30
August 9, 2010	0.30
November 9, 2010	0.30
February 8, 2011	0.30
Fiscal year ended March 31, 2011	<u>\$ 1.20</u>

On May 9, 2011, the Company declared a quarterly dividend of \$0.30 for holders of record on May 23, 2011 to be paid June 2, 2011.

Stock-Based Compensation

Compensation expense for the fair value of stock based awards made to employees and the Board of Directors is recognized over the requisite service period for awards expected to vest. The Company estimates the fair value of share-based awards on the date of grant using the Black-Scholes option pricing model. 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, (3) the expected dividend yield and (4) 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. The expected dividend yield was based on the expectation we would continue paying dividends on our common stock at the same rate for the foreseeable future. The risk free interest rate is based on the U.S. Zero-Bond rate.

The Company recognized \$5,216,000, \$5,954,000 and \$4,940,000 of stock-based compensation costs in the consolidated statements of income for the year ended March 31, 2011, 2010 and 2009, respectively. The income tax benefit related to such compensation for the years ended March 31, 2011, 2010 and 2009 was approximately \$1,770,000, \$2,038,000 and \$1,724,000, respectively.

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

(In thousands)	Fiscal Year Ended		
	March 31, 2011	March 31, 2010	March 31, 2009
Cost of revenues	\$ 797	\$ 975	\$ 754
Selling, general and administrative	4,419	4,979	4,186
Total share-based compensation expense before tax	<u>\$ 5,216</u>	<u>\$ 5,954</u>	<u>\$ 4,940</u>

The fair value of options at date of grant was estimated with the following assumptions:

Assumptions:	Fiscal Year Ended		
	March 31, 2011	March 31, 2010	March 31, 2009
Expected life	5 years	5 years	5 years
Risk-free interest rate	1.60%	2.37%	2.99%
Stock volatility	44%	46%	49%
Dividend yield	1.6%	1.2%	1.3%

New Accounting Pronouncements

Accounting Changes to be Implemented.

In October 2009, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update 2009-14, *Revenue Recognition (Topic 605)—Applicability of AICPA Statement of Position 97-2 to Certain Arrangements That Include Software Elements* (ASU 2009-14). ASU 2009-14 excludes tangible products containing software components and non-software

components that function together to deliver the product's essential functionality from the scope of FASB Accounting Standards Codification ("ASC") 605-985, *Software-Revenue Recognition*. ASU 2009-14 shall be applied on a prospective basis to revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010. Early adoption was permitted. Upon adoption, the Company must apply ASU 2009-14 retrospectively to the beginning of the fiscal year of adoption or to all periods presented. The adoption of ASU 2009-14 is not expected to have a material impact on the Company's financial position, results of operations or cash flows.

2. LEASE AGREEMENTS

The Company leases certain 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. The Company incurred \$670,000, \$262,000 and \$253,000 of operating rent expense in the fiscal years ended March 31, 2011, 2010, and 2009 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 which 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. In January 2007, the Company amended this lease agreement to expand its lease to include the remaining available space in the building. During the fiscal year ended March 31, 2007, the Company capitalized \$2,029,000 to record the facility on its books with an offsetting amount to the Lease Financing Liability. In addition, amounts paid for construction were recorded as construction in progress and the landlord construction allowances of \$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 ASC 840 *Leases*. Based on this review, it was determined that the lease did not qualify for sale-leaseback treatment. As a result, building and tenant improvements and associated lease financing liabilities remained on the Company's financial statements. 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
2012	\$ 651	\$ 1,413
2013	260	1,424
2014	245	1,542
2015	245	1,542
2016	225	1,414
Thereafter	—	—
Total payments	\$ 1,626	7,335
Imputed interest		(259)
Lease financing liability		7,076
Less: Current portion of lease financing liability		1,321
Lease financing liability, net of current portion		\$ 5,755

3. LINE OF CREDIT

The Company previously had in place a Loan and Security Agreement with Silicon Valley Bank which provided a \$30.0 million facility to support routine letters of credit and working capital needs. The Loan and Security Agreement expired on November 12, 2010 and the Company decided not to renew this facility given the cash flows provided from operations and the Company's available cash and investments balance. As of the date of such decision, the Company had not drawn on this facility since June of 2002 and had used this credit facility exclusively to issue standby letters of credit.

Under the terms of this Loan and Security Agreement, the Company was required to pay certain one-time facility fees which were being amortized over the life of the facility and other unused credit fees. Total expenses incurred related to these fees were \$94,000, \$227,000 and \$214,000 in fiscal 2011, 2010, and 2009, 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 its obligations, the probability of which is remote in management's opinion. At March 31, 2011, the Company had outstanding \$28,041,000 in standby letters of credit. Upon expiration of the Company's Loan and Security Agreement as noted above, these outstanding standby letters of credit became restricted cash-secured at amounts ranging from 105% to 110% of the value of outstanding letters of credit. This resulted in a restricted cash balance of \$29,460,000 at March 31, 2011 of which \$9,062,000 was considered long-term restricted cash due to the expiration date of the underlying letters of credit.

4. INCOME TAXES

The provision for income taxes for the years ended March 31, 2011, 2010, and 2009 consisted of the following:

<u>(In thousands)</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Current:			
Federal	\$ 24,080	\$ 20,420	\$ 14,470
State	636	(1,288)	1,108
Foreign	22	35	40
	<u>24,738</u>	<u>19,167</u>	<u>15,618</u>
Deferred:			
Federal	(2,354)	(399)	(227)
State	(640)	(954)	(44)
Change in valuation allowance	314	856	—
	<u>(2,680)</u>	<u>(497)</u>	<u>(271)</u>
Provision for income taxes	<u>\$ 22,058</u>	<u>\$ 18,670</u>	<u>\$ 15,347</u>

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, 2011 is as follows:

<u>(In thousands)</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Provision for income taxes at statutory rate	\$ 22,706	\$ 19,196	\$ 15,295
State tax provision (benefit) net of federal effect	(2)	(1,458)	692
Stock based compensation	616	736	286
Research tax credits	(432)	(291)	(395)
Qualifying manufacturing credits	(1,346)	(719)	(539)
Change in valuation allowance	314	856	—
Other	202	350	8
Provision for income taxes	<u>\$ 22,058</u>	<u>\$ 18,670</u>	<u>\$ 15,347</u>

The significant components of the net deferred tax assets at March 31, 2011 and 2010 are as follows:

<u>(In thousands)</u>	<u>March 31, 2011</u>		<u>March 31, 2010</u>	
	<u>Current</u>	<u>Non-current</u>	<u>Current</u>	<u>Non-current</u>
Deferred tax assets (liabilities):				
Accounts receivable and unbilled costs and fees	\$ —	\$ 119	\$ —	\$ 118
Inventory	318	1,558	319	1,412
Deferred revenue	—	2,555	—	1,617
Accrued vacation	651	—	571	—
Accrued warranty costs	436	—	342	—
Depreciation	—	(17)	—	(559)
Unearned compensation	1,861	2,564	919	2,583
State credit carryforwards	—	1,170	—	813
Other	203	—	281	—
Deferred income tax assets	<u>3,469</u>	<u>7,949</u>	<u>2,432</u>	<u>5,984</u>
Valuation allowance	—	(1,170)	(43)	(813)
Net deferred income taxes	<u>\$ 3,469</u>	<u>\$ 6,779</u>	<u>\$ 2,389</u>	<u>\$ 5,171</u>

During fiscal year 2010, state tax benefits, net of federal effect, of approximately \$825,000 were realized as a result of state tax planning initiatives adopted by the Company. At March 31, 2011 and March 31, 2010, the Company has \$1,800,000 and \$1,250,000 of state credit carryforwards, respectively. Of these amounts, approximately \$432,000 and \$400,000 at March 31, 2011 and March 31, 2010, respectively, have unlimited carryforward and the remaining balances expire in various years through March 31, 2026.

At March 31, 2011 and March 31, 2010, the Company had a deferred tax valuation allowance of \$1,170,000 and \$856,000, respectively, on state credit carryforwards and other deferred tax assets for which management believes it is more-likely-than-not that realization of these assets will not occur.

The Company is currently open to audit under the statute of limitations by the Internal Revenue Service for the years ending March 31, 2008 through 2010 and for various state taxing authorities for the years ending March 31, 2006 through 2010. During fiscal 2010, the Company completed an audit by the Internal Revenue Service for tax years ended March 31, 2006 and 2007, the results of which did not have a material impact on the Company's financial position or results of operations. The Company believes that there were no uncertain tax positions that required a reserve as of March 31, 2011 and March 31, 2010.

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, 2011 and 2010 is as follows:

<u>(In thousands)</u>	<u>2011</u>	<u>2010</u>
Warranty accrual at beginning of period	\$ 965	\$ 1,130
Accruals for warranties issued during the period	2,153	1,212
Adjustment of preexisting accrual estimates	(158)	(815)
Warranty costs incurred during period	(1,735)	(562)
Warranty accrual at end of period	<u>\$ 1,225</u>	<u>\$ 965</u>

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.

Stock 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. This Stock Repurchase Program was completed in the first quarter of fiscal 2009. 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. During the fiscal year ended March 31, 2011, the Company repurchased 51,269 shares of common stock under this Program at an average price of \$72.87. As of March 31, 2011, the remaining balance available under the program to purchase shares was \$20,068,000.

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, 2011: 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 3,980,000

shares authorized under these plans. Vesting periods are at the discretion of the Board of Directors and typically range from one to 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 ten years from the date of grant.

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

	2011		2010		2009	
	Number of Shares	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
Options outstanding, beginning of year	613,934	\$ 47.37	709,254	\$ 44.47	828,063	\$ 41.70
Options granted	56,181	74.87	63,993	62.17	64,191	64.13
Options exercised	(197,669)	35.12	(158,863)	40.34	(161,753)	36.49
Options canceled or expired	—	—	(450)	53.55	(21,247)	56.58
Options outstanding, end of year	<u>472,446</u>	\$ 55.77	<u>613,934</u>	\$ 47.37	<u>709,254</u>	\$ 44.47
Options exercisable, end of year	397,592	\$ 53.06	544,080	\$ 45.54	625,646	\$ 41.90
Options available for grant	301,732		365,572		294,629	
Weighted average fair value per share of options granted during the year		\$ 26.21		\$ 23.52		\$ 26.54

The following summarizes certain data for options outstanding and exercisable at March 31, 2011:

	Number of Shares	Range of Exercise Prices	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life
Options outstanding:	27,327	\$ 6.50-\$20.00	\$ 12.84	2.40
	21,100	\$20.01-\$30.00	28.50	3.37
	20,500	\$30.01-\$40.00	39.06	3.68
	53,600	\$40.01-\$50.00	45.47	4.26
	86,562	\$50.01-\$60.00	53.24	4.26
	207,176	\$60.01-\$70.00	64.41	5.30
	56,181	\$70.01-\$75.82	74.87	9.42
	<u>472,446</u>	\$ 6.50-\$75.82	\$ 55.77	5.16
Options exercisable:	27,327	\$ 6.50-\$20.00	\$ 12.84	
	21,100	\$20.01-\$30.00	28.50	
	20,500	\$30.01-\$40.00	39.06	
	53,600	\$40.01-\$50.00	45.47	
	82,701	\$50.01-\$60.00	53.32	
	188,183	\$60.01-\$70.00	64.71	
	4,181	\$70.01-\$75.82	75.82	
	<u>397,592</u>	\$ 6.50-\$75.82	\$ 53.06	

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 2011, 2010 and 2009 was \$10,121,000, \$4,796,000 and \$5,265,000, respectively. Nonvested stock option awards are subject to the risk of forfeiture until the fulfillment of specified conditions. As of March 31, 2011, there was \$630,000 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 of 0.5 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. The Company receives an additional tax deduction when restricted stock vests at a higher value than the value used to recognize compensation expense at the date of grant. These tax benefits are credited to additional paid-in capital if it is considered more likely than not that they will be realized. During fiscal 2011, 2010 and 2009, a tax benefit of \$3,730,000, \$1,087,000 and \$1,284,000, respectively, was recorded to additional paid-in capital for exercises and/or sales of stock options or stock.

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, stock options, and/or cash awards which vest upon the achievement of certain performance based goals as well as service time incurred. In fiscal 2011, the Company opted to issue this long term incentive plan with only a cash award which resulted in fewer restricted stock awards and stock options being granted.

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 performed over a one year period. 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, 2011 there was \$852,000 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 weighted average of 1.1 years.

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

	2011		2010		2009	
	Number of Shares	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price	Number of Shares	Weighted Average Exercise Price
Unvested restricted stock and units outstanding, beginning of year	97,240	\$ 60.78	137,687	\$ 56.74	110,301	\$ 58.34
Granted	5,106	83.79	80,149	62.53	53,259	53.69
Vested	(69,464)	60.45	(120,096)	57.32	(9,194)	56.59
Forfeited	—	—	(500)	60.65	(16,679)	57.64
Unvested restricted stock and units outstanding, end of year	<u>32,882</u>	\$ 65.03	<u>97,240</u>	\$ 60.78	<u>137,687</u>	\$ 56.74

7. BUSINESS SEGMENT INFORMATION

In accordance with the provisions of FASB ASC 280-10, *Segment Reporting*, 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, 2011, approximately 1.6% of the Company's assets were in foreign countries. The foreign assets were comprised of cash in foreign banks, and 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 international and domestic customers based upon customer's country of domicile and the major regions of international activity:

Net Sales and Contract Revenues

(Dollars in thousands)	Fiscal Year					
	2011		2010		2009	
Domestic	\$ 190,769	68%	\$ 163,873	68%	\$ 138,240	63%
International	87,807	32%	78,220	32%	80,127	37%
Net Sales and Contract Revenues	<u>\$ 278,576</u>	<u>100%</u>	<u>\$ 242,093</u>	<u>100%</u>	<u>\$ 218,367</u>	<u>100%</u>

Percent of International Revenue by Major Region:

Middle East & Africa	84%	81%	85%
Pacific Rim	7%	8%	7%
Europe	7%	9%	8%
All Other	2%	2%	—%

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

Fiscal 2011: \$82,634,000, \$32,316,000 and \$31,072,000, respectively, to three customers.

Fiscal 2010: \$59,204,000 and \$28,591,000, respectively, to two customers.

Fiscal 2009: \$39,187,000 and \$34,635,000, respectively, to two customers.

Domestically, the Company's primary client base is comprised of agencies of the U.S. government. Approximately 65%, 63% and 56% of the Company's sales in fiscal 2011, 2010, and 2009 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. During fiscal 2011, one of the Company's contracts with the U.S. government was terminated for convenience by the U.S. government. During fiscal 2010, one of the Company's contracts with the U.S. government was terminated for convenience by the U.S. government. During fiscal 2009, two of the Company's contracts with the U.S. government were partially terminated for convenience by the U.S. government. These terminations of these contracts did not result in material losses to the Company.

8. FAIR VALUE MEASUREMENTS

FASB ASC 820, *Fair Value Measurements and Disclosures*, defines and establishes a framework for measuring fair value and expands disclosures about fair value measurements. In accordance with ASC 820, we have categorized our financial assets, based on the priority of the inputs to the valuation technique, into a three-level fair value hierarchy as set forth below. If the inputs used to measure the financial instruments fall within different levels of the hierarchy, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

Financial assets recorded on the Consolidated Balance Sheets are categorized based on the inputs to the valuation techniques as follows:

Level 1 - Financial assets whose values are based on unadjusted quoted prices for identical assets or liabilities in an active market that the Company has the ability to access at the measurement date (examples include active exchange-traded equity securities, listed derivatives, and most U.S. government and agency securities).

Level 2 - Financial assets whose values are based on quoted prices in markets where trading occurs infrequently or whose values are based on quoted prices of instruments with similar attributes in active markets. Level 2 inputs include the following:

- Quoted prices for identical or similar assets or liabilities in non-active markets (examples include corporate and municipal bonds which trade infrequently);
- Inputs other than quoted prices that are observable for substantially the full term of the asset or liability (examples include interest rate and currency swaps); and
- Inputs that are derived principally from or corroborated by observable market data for substantially the full term of the asset or liability (examples include certain securities and derivatives).

Level 3 - Financial assets whose values are based on prices or valuation techniques that require inputs that are both unobservable and significant to the overall fair value measurement. These inputs reflect management's assumptions about the assumptions a market participant would use in pricing the asset or liability. The Company currently does not have any Level 3 financial assets or liabilities.

The following table presents the financial assets and liabilities we measure at fair value on a recurring basis, based on the fair value hierarchy as of March 31, 2011 and March 31, 2010:

(In thousands)	March 31, 2011	March 31, 2010
Level 1 – Financial Assets		
U.S. Treasury bills	\$ 20,120	\$ 35,005
Level 2 – Financial Assets		
Corporate debentures/bonds	44,586	42,588
Government agency bonds	13,099	28,589
Commercial paper	57,512	25,983
Money market funds	10,249	19,705
Certificates of deposit	4,000	12,001
Total Level 2 Financial Assets	<u>129,446</u>	<u>128,866</u>
Total cash equivalents and short-term investments	<u>\$ 149,566</u>	<u>\$ 163,871</u>

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
2011:				
Short-term investments:				
Corporate debentures/bonds	\$ 44,585	\$ 13	\$ (12)	\$ 44,586
Treasury bills	20,095	25	—	20,120
Government agency bonds	6,593	7	—	6,600
Commercial paper	34,834	1	—	34,835
Certificates of deposit	4,000	—	—	4,000
Total short-term investments	<u>\$ 110,107</u>	<u>\$ 46</u>	<u>\$ (12)</u>	<u>\$ 110,141</u>
Cash equivalents:				
Money market funds	10,249	—	—	10,249
Government agency bonds	6,500	—	(1)	6,499
Commercial paper	22,677	—	—	22,677
Total cash equivalents	<u>\$ 39,426</u>	<u>\$ —</u>	<u>\$ (1)</u>	<u>\$ 39,425</u>
2010:				
Short-term investments:				
Corporate debentures/bonds	\$ 42,585	\$ 26	\$ (23)	\$ 42,588
Treasury bills	34,982	28	(5)	35,005
Government agency bonds	28,600	2	(13)	28,589
Commercial paper	25,982	1	—	25,983
Certificates of deposit	12,001	—	—	12,001
Total short-term investments	<u>\$ 144,150</u>	<u>\$ 57</u>	<u>\$ (41)</u>	<u>\$ 144,166</u>
Cash equivalents:				
Money market funds	<u>\$ 19,705</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 19,705</u>

9. DERIVATIVE FINANCIAL INSTRUMENTS

The Company purchased in the fourth quarter of fiscal year 2010, a foreign currency put option contract to manage the risk associated with foreign currency exchange rate fluctuations on an anticipated obligation and transaction. The foreign currency put option contract was paid in full at execution and was related to our activities in Europe. The put option contract provided us with the option to exchange Euros for U.S. dollars at a fixed exchange rate such that, if the Euro were to depreciate against the U.S. dollar to predetermined levels as set by the contract, we could exercise our option and mitigate our foreign currency exchange losses. This contract did not qualify for hedge accounting treatment and was marked-to-market through the results of operations until it was settled. This contract was sold during the second quarter ending September 30, 2010. The Company recorded net mark-to-market income for this contract of \$122,000, which is included in other income and expense in the consolidated statements of operations. The Company had no option contracts outstanding at March 31, 2011.

10. COMMITMENTS AND CONTINGENCIES

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, 2011, the Company had \$16,589,000 of open purchase orders which are expected to be substantially fulfilled within the next two 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

The Compensation Committee of the Board of Directors of the Company approved revisions to the Company's employment agreement with its Chief Executive Officer, Anthony Fabiano and such revisions became effective on June 1, 2011. Under revisions to the agreement, Mr. Fabiano, in the event of a termination pursuant to a change of control (as defined in the agreement), is eligible to receive a payment equal to 2.9 times his base salary in effect on the date of termination plus a pro rata portion of his bonus for the fiscal year in which the termination occurred, his annual target bonus, the continuation of health benefits for a period of three years, the vesting of awards under the Company's 2005 Equity and Incentive Plan and the continuation of certain life insurance benefits. In addition, in the event that any of Mr. Fabiano's awards under the Company's 2005 Equity and Incentive Plan are not assumed or replaced upon a change of control of the Company, his options, restricted stock and cash-based long-term incentive awards will fully vest upon the change of control, regardless of termination of employment. In the event of a qualifying termination not pursuant to a change of control, Mr. Fabiano is eligible for a payment equal to two times his base salary in effect at the date of termination, plus a pro rata portion of his bonus for the fiscal year in which the termination occurred, his annual target bonus, the continuation of health benefits for a period of eighteen months and the continuation of certain life insurance benefits.

The Compensation Committee of the Board of Directors of the Company approved revisions to the Company's Change in Control and Severance Benefit Agreements covering members of its executive staff including its Chief Financial Officer and such revisions became effective on June 1, 2011. Under the revisions to these agreements, these executives, in the event of termination within two years following a change of control (as defined in the revised agreements), are eligible to receive a payment equal to two times the highest annual rate of base salary payable to the executive during the one-year period ending on the change of control date (or date of shareholder approval, if the executive's employment is terminated without cause prior to the change in control date) or the termination date (whichever results in a higher amount) plus his or her annual target bonus, the continuation of health benefits for a period of three years and the vesting of all awards under the Company's 2005 Equity and Incentive Plan. In addition, in the event that an executive's awards under the Company's 2005 Equity and Incentive Plan are not assumed or replaced upon a change of control of the Company, his or her options, restricted stock and cash-based long-term incentive awards will fully vest upon the change of control, regardless of termination of employment. 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 highest annual rate of base salary payable to the executive during the one-year period ending on the termination date and the continuation of health benefits for one year.

Retirement Savings Plan

The Company maintains a 401(k) Retirement Savings Plan (the "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 or cash. In fiscal 2011, the Company began matching employee's contributions in cash instead of Company common stock as it had in prior years. Expenses under the Plan, consisting of Company contributions which were made in Company stock or cash and Plan administrative expenses paid by the Company, totaled \$1,139,000, \$993,000 and \$789,000, in 2011, 2010, and 2009 respectively.

AMERICAN SCIENCE AND ENGINEERING, INC. AND SUBSIDIARIES
UNAUDITED QUARTERLY CONSOLIDATED FINANCIAL DATA
FOR THE YEARS ENDED MARCH 31, 2011 AND MARCH 31, 2010
(In thousands, except per shares amounts)

	2011 by quarter				2010 by quarter			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Net sales and contract revenues	\$53,643	\$80,637	\$76,588	\$67,708	\$54,692	\$61,248	\$54,889	\$71,264
Gross profit	\$23,812	\$39,844	\$34,704	\$30,842	\$25,620	\$29,454	\$22,627	\$33,369
Operating income	\$ 8,989	\$23,622	\$17,362	\$14,471	\$11,112	\$16,494	\$ 8,851	\$17,867
Net income	\$ 6,801	\$14,669	\$11,782	\$ 9,565	\$ 7,336	\$10,695	\$ 5,819	\$12,326
Net income per share								
— Basic	\$ 0.75	\$ 1.63	\$ 1.31	\$ 1.05	\$ 0.83	\$ 1.21	\$ 0.65	\$ 1.37
— Diluted	\$ 0.74	\$ 1.59	\$ 1.28	\$ 1.03	\$ 0.81	\$ 1.18	\$ 0.64	\$ 1.34

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 9, 2011

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
<u> /s/ ANTHONY R. FABIANO </u> Anthony R. Fabiano	Director and President and Chief Executive Officer (Principal Executive Officer)	June 9, 2011
<u> /s/ KENNETH J. GALAZNIK </u> Kenneth J. Galaznik	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	June 9, 2011
<u> /s/ DENIS R. BROWN </u> Denis R. Brown	Chairman of the Board, Director	June 9, 2011
<u> /s/ JOHN A. GORDON </u> John A. Gordon	Director	June 9, 2011
<u> /s/ HAMILTON W. HELMER </u> Hamilton W. Helmer	Director	June 9, 2011
<u> /s/ DON R. KANIA </u> Don R. Kania	Director	June 9, 2011
<u> /s/ ERNEST J. MONIZ </u> Ernest J. Moniz	Director	June 9, 2011
<u> /s/ MARK S. THOMPSON </u> Mark S. Thompson	Director	June 9, 2011
<u> /s/ CARL W. VOGT </u> Carl W. Vogt	Director	June 9, 2011

EXHIBIT INDEX

Exhibit Number	Description of Exhibit (and Statement of Incorporation by Reference, If Applicable)
3.1	Restated Articles of Organization of the Company, as amended, including Certificate of Designation, Preferences, and Rights of Preferred Stock of the Company, dated April 16, 2008 (filed as Exhibit 3.1 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
3.5	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)
4.2	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)
10.1	* 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)
10.2	* 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)
10.3	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)
10.4	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)
10.5	* 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)
10.6	* 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)
10.7	* 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)
10.10	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)
10.11	* 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)
10.12	* 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)
10.13	* 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)
10.14	* 2005 Equity and Incentive Plan (filed as Exhibit 99.1 to the Company's Registration Statement on Form S-8, No. 333-162291, filed on October 2, 2009 and incorporated herein by reference)
10.17	* Form of Restricted Stock Agreement (Performance) under the Company's 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)
10.18	* Form of Stock Option Agreement (Performance) under the Company's 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)
10.19	* Form of Stock Option Agreement (ISO) under the Company's 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)
10.20	Form of Stock Option Agreement (NQ) under the Company's 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)
10.21	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)
10.22	*† Revised Agreement between the Company and Anthony Fabiano dated June 1, 2011 and filed herewith
10.24	* Form of Restricted Stock Agreement (Performance) under the Company's 2005 Equity and Incentive Plan (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2008 and incorporated herein by reference)
10.25	* Form of Incentive Stock Agreement (Performance) under the Company's 2005 Equity and Incentive Plan (filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2008 and incorporated herein by reference)
10.26	* Form of Long-Term Incentive Plan Agreement – Cash Component (filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2008 and incorporated herein by reference)
10.27	* Revised Form of Change in Control & Severance Benefit Agreement between the Company and each of its executive officers other than its President and Chief Executive Officer (filed as Exhibit 10.2 to the Company's Report on Form 8-K dated April 28, 2011 and incorporated herein by reference)
10.28	American Science and Engineering, Inc. 401(k) and Profit Sharing Plan (filed as Exhibit 4.1 to the Company's Registration Statement on Form S-8 dated July 25, 2008 and incorporated herein by reference)
10.39	Form of Short Term Incentive Bonus Plan Document (filed as Exhibit 10.1 to the Company's filing on Form 10-Q dated November 5, 2009 and incorporated herein by reference)
10.41	* Form of Restricted Stock Agreement (Performance) under the Company's 2005 Equity and Incentive Plan (filed as Exhibit

- 10.41 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
- 10.42 * Form of Nonstatutory Stock Option Agreement (Performance) under the Company's 2005 Equity and Incentive Plan (filed as Exhibit 10.42 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
- 10.43 * Form of Long-Term Incentive Plan Agreement – Cash Component (filed as Exhibit 10.43 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
- 10.44 Form of Non-Employee Director Restricted Stock Award Agreement under the Company's 2005 Equity and Incentive Plan (filed as Exhibit 10.44 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
- 10.45 Form of Non-Statutory Stock Option Agreement For Directors under the Company's 2005 Equity and Incentive Plan (filed as Exhibit 10.45 to the Company's filing on Form 10-K dated June 9, 2010 and incorporated herein by reference)
- 10.46 * Form of Indemnification Agreement between the Company and each of its directors and executive officers (filed as Exhibit 10.1 to the Company's Report on Form 8-K dated September 8, 2010 and incorporated herein by reference)
- 10.47 *† Form of Restricted Stock Agreement (Time Vesting) under the Company's 2005 Equity and Incentive Plan (filed herewith)
- 10.48 † Fourth Amendment of Lease of 829 Middlesex Turnpike, Billerica, Massachusetts dated January 18, 2011 (filed herewith)
- 21.1 † Subsidiaries of Registrant
- 23.1 † Consent of Independent Registered Public Accounting Firm
- 23.2 † 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

† Filed as an Exhibit to the Company's filing on Form 10-K for the year ended March 31, 2011 and incorporated herein by reference.

* Management contract or compensatory plan

Exhibit 21.1

SUBSIDIARIES OF THE REGISTRANT

The following are the subsidiaries of American Science and Engineering, Inc. as of March 31, 2011 and the states or jurisdictions in which they are organized.

Name	State or Jurisdiction of Entity
AS&E Global, Inc.	Massachusetts
AS&E Mexico Detection Systems S de RL de CV	Mexico
AS&E Brasil Sistemas de Deteccao e Segurancca LTDA	Brazil
AS&E Europe, B.V.	Netherlands
Global International Holding, Inc.	Delaware
AS & E (Hong Kong) Limited	Hong Kong
AS & E Detection Systems Pte. Ltd.	Singapore

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statements (Nos. 333-05797, 333-13259, 333-27927, 333-69717, 333-91801, 333-53842, 333-102338, 333-117843, 333-117844, 333-129851, 333-152541, 333-155215 and 333-162291) on Form S-8 and (Nos. 033-61903, 333-09151 and 333-89836) on Form S-3 of American Science and Engineering, Inc. and subsidiaries of our report dated June 9, 2011, relating to our audit of the consolidated financial statements and internal control over financial reporting, which appear in this Annual Report on Form 10-K of American Science and Engineering, Inc. and subsidiaries for the year ended March 31, 2011.

/s/ McGladrey & Pullen, LLP

Boston, Massachusetts
June 9, 2011

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-05797, 333-13259, 333-27927, 333-69717, 333-91801, 333-53842, 333-102338, 333-117843, 333-117844, 333-129851, 333-152541, 333-155215 and 333-162291) and Form S-3 (Nos. 033-61903, 333-09151 and 333-89836) of the report of Caturano and Company, P.C. (whose name has since been changed to Caturano and Company, Inc.) dated June 7, 2010 relating to the consolidated financial statements as of and for the two years ended March 31, 2010 of American Science and Engineering, Inc. and subsidiary, which appear in this Annual Report on Form 10-K.

/s/ Caturano and Company, Inc.

Boston, Massachusetts
June 9, 2011

Exhibit 31.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Section 302 Certification**

I, Anthony R. Fabiano, certify that:

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

Date: June 9, 2011

/s/ ANTHONY R. FABIANO

Anthony R. Fabiano
President and Chief Executive Officer

Exhibit 31.2

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
Section 302 Certification**

I, Kenneth J. Galaznik, certify that:

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

Date: June 9, 2011

/s/ KENNETH J. GALAZNIK

Kenneth J. Galaznik

Senior Vice President, Chief Financial Officer and
Treasurer

**CERTIFICATION PURSUANT TO
SECTION 1350, CHAPTER 63 OF TITLE 18, UNITED STATES CODE,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to Section 1350, Chapter 63 of Title 18, United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, the President and Chief Executive Officer of American Science and Engineering, Inc. (the "Company"), does hereby certify that to the undersigned's knowledge:

1. the Company's Annual Report on Form 10-K for the year ended March 31, 2011 ("10-K") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in the Company's 10-K being filed fairly presents, in all material respects, the financial condition and results of operation of the Company

Date: June 9, 2011

/s/ ANTHONY R. FABIANO

Anthony R. Fabiano
President and Chief Executive Officer

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

**CERTIFICATION PURSUANT TO
SECTION 1350, CHAPTER 63 OF TITLE 18, UNITED STATES CODE,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to Section 1350, Chapter 63 of Title 18, United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, the Senior Vice President, Chief Financial Officer and Treasurer of American Science and Engineering, Inc. (the "Company"), does hereby certify that to the undersigned's knowledge:

1. the Company's Annual Report on Form 10-K for the year ended March 31, 2011 ("10-K") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in the Company's 10-K being filed fairly presents, in all material respects, the financial condition and results of operation of the Company

Date: June 9, 2011

/s/ KENNETH J. GALAZNIK

Kenneth J. Galaznik
*Senior Vice President, Chief Financial Officer and
Treasurer*

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

Notes

BOARD OF DIRECTORS

Denis R. Brown

*Chairman of the Board
Private Investor*

Anthony R. Fabiano

*President and Chief Executive Officer,
American Science and Engineering, Inc.*

General John A. Gordon

General, United States Air Force (Retired)

Hamilton W. Helmer, Ph.D.

Managing Director, Deep Strategy

Don R. Kania, Ph.D.

*President, Chief Executive Officer and Board
Member of F&E Company*

Ernest J. Moritz, Ph.D.

*Cecil and Ida Green Professor of Physics
and Engineering Systems,
Massachusetts Institute of Technology*

Mark S. Thompson, Ph.D.

*President and Chief Executive Officer,
Fairchild Semiconductor*

Carl W. Vogt

*Senior Partner (Retired),
Fulbright and Jaworski L.L.P.*

SENIOR MANAGEMENT

Kenneth Brent

*Senior Vice President, Advanced Development
and Logistics*

Joseph Callorame, Ph.D.

*Senior Vice President, Science and
Technology*

Robert Cline

Senior Vice President, Operations

Anthony R. Fabiano

President and Chief Executive Officer

Kenneth J. Galavnik

*Senior Vice President, Chief Financial
Officer and Treasurer*

Patricia A. Gray

*Senior Vice President, General Counsel
and Clerk*

Paul H. Grzewski

Senior Vice President, Strategic Planning

George M. Perelman

Senior Vice President, Human Resources

Robert G. Postle

*Senior Vice President, Worldwide
Marketing and Sales*

Michael N. Tropeano

Senior Vice President, Product Management

Michael A. Williams

Senior Vice President, Engineering

CONTACT INFORMATION

AS&E Corporate Headquarters

329 Middlesex Turnpike

Billerica, MA 01821

Tel. (978) 262-8700

Fax. (978) 262-8804

<http://www.as-e.com>

Investor Relations: ir@as-e.com

President's Office: ceo@as-e.com

Sales: sales@as-e.com

International Sales: ir@sales@as-e.com

ANNUAL MEETING

The Annual Meeting of Stockholders of American Science and Engineering, Inc. will be held September 8, 2011 at 8:30 a.m. at the Doubletree Hotel Boston-Bedford Glen, 44 Middlesex Turnpike, Bedford, MA

ANNUAL MEETING MATERIALS

The Proxy Statement, the Annual Report to Stockholders, and directions to attend the meeting and vote in person are available on the Investor Information page of the Company's website at www.as-e.com under the subheading "Annual Meeting Materials."

AUDITORS

McGladrey & Pullen, LLP

Boston, Massachusetts

TRANSFER AGENT AND REGISTRAR

American Stock Transfer and Trust

Company, L.L.C.

New York, New York

STOCK LISTING

NASDAQ

Member NASDAQ Global Select Market

Symbol: ASEI

SEC FILINGS

Copies of American Science and Engineering, Inc.'s filings with the Securities and Exchange Commission (SEC) may be obtained online at www.as-e.com in the Investor Information section.

EQUAL OPPORTUNITY EMPLOYER

AS&E is an Equal Opportunity Employer. It is our policy to recruit, hire, train, and promote personnel in all job classifications without regard to race, religion, color, national origin, sex, or age. Above and beyond nondiscrimination, we are committed to an Affirmative Action Program dedicated to hiring, training, and advancement within the Company of minorities, women, people with disabilities, and veterans.

TRADEMARKS

Z Backscene™, ZBV™, MobileSearch™, Shaped Energy®, AS&E®, Gemini™, Omniview™, Sentry™, SmartCheck®, Z Portal® and all AS&E product names and AS&E logos are either registered trademarks or trademarks of American Science and Engineering, Inc. in the United States and/or other countries. Other product and company names mentioned herein may be the trademarks of their respective owners.

AS&E is ISO 9001:2008 registered.

ABOUT AMERICAN SCIENCE AND ENGINEERING, INC. (AS&E)

With more than 50 years of experience developing, deploying, and supporting X-ray systems, AS&E's advanced cargo, parcel, and personnel inspection systems are at work protecting ports, borders, airports, military and high-threat facilities, and critical infrastructure worldwide.

With a proven track record and best-in-class technology, our systems meet the inspection requirements of governments, corporations, and national defense organizations around the globe to combat terrorism, drug and weapon smuggling, illegal immigration, and trade fraud. The combination of advanced technologies gives our systems superior detection capabilities — with high-energy, dual-energy, and Z Backscatter™ X-rays — pioneered and perfected by AS&E.

A trusted and proven partner, AS&E offers the most advanced detection technologies in a variety of configurations — all designed to meet our customers' real-world operational requirements.



American Science and Engineering, Inc.

829 Middlesex Turnpike | Billerica, MA 01821 USA | Tel: +1-978-262-8700 | Fax: +1-978-262-8804 | www.as-e.com