
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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 December 31, 2009

Commission File Number 0-13839

CAS MEDICAL SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

06-1123096
(I.R.S. Employer Identification No.)

44 East Industrial Road, Branford, Connecticut 06405
(Address of principal executive offices, including zip code)

(203) 488-6056
(Registrant's telephone number, including area code)

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

Title of Each Class
Common Stock, \$.004 par value

Name of Each Exchange on Which Registered
The NASDAQ Global Market

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes ___ No X

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ___ No X

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

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. [X]

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

Large accelerated filer ___

Accelerated filer ___

Non-accelerated filer ___

Smaller reporting company X

(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of June 30, 2009, which is the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was \$15,784,000 based on the closing price as reported on the NASDAQ Global Market. This calculation does not reflect a determination that persons are affiliates for any other purpose.

As of March 15, 2010, there were 11,532,084 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement for its Annual Meeting of Stockholders to be held on June 9, 2010 are incorporated by reference in Part III of this Report. Except as expressly incorporated by reference, the Registrant's Proxy Statement shall not be deemed to be part of this Form 10-K.

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PART I

This report may contain information that includes or is based on forward-looking statements within the meaning of the federal securities laws that are subject to risks and uncertainties. These statements may be identified by the use of words such as "anticipates," "expects," "estimates," "projects," "intends" and "believes" and variations thereof and other terms of similar meaning. Factors that could cause the Company's actual results and financial condition to differ from the Company's expectations include, but are not limited to: potential liquidity constraints; price and product competition; rapid technological changes; dependence on new product development; failure to introduce new products effectively or on a timely basis; the mix of products sold; supply and prices of raw materials and products; customer demand for the Company's products; regulatory actions; changes in reimbursement levels from third-party payors; product liability or other litigation claims; changes in economic conditions that adversely affect the level of demand for the Company's products; changes in foreign exchange markets; changes in financial markets; changes in the competitive environment; and other risks described in Item 1A of this filing. While the Company believes that the assumptions underlying such forward-looking statements are reasonable, there can be no assurance that future events or developments will not cause such statements to be inaccurate. All forward-looking statements contained in this report are qualified in their entirety by this cautionary statement.

Unless the context indicates otherwise, as used in this report, the terms "CAS," "CASMED," the "Company," "we," "us" and "our" refer to CAS Medical Systems, Inc and its subsidiary, Statcorp, Inc. ("Statcorp").

Item 1. Business

Overview

We are a medical technology company that develops, manufactures and markets non-invasive patient monitoring products that are vital to patient care. Our products include the FORE-SIGHT cerebral oximeter and sensors, MAXNIBP blood pressure measurement technology, bedside monitoring products, blood pressure cuffs and neonatal supplies. These products are designed to improve the quality of patient care by providing accurate non-invasive measurements that can improve patient outcomes and decrease hospital costs.

Our products have well established brand recognition in the markets we serve. We are the inventors of LASER-SIGHT NIRS technology, which is the foundation for our newest product, the FORE-SIGHT Absolute Cerebral Oximeter. This product is the only cerebral oximeter on the market today approved to provide a non-trend, absolute measure of cerebral tissue oxygen saturation for all patient populations, from neonate through adult, regardless of age or weight. The brain is the organ least tolerant of oxygen deprivation. Without sufficient oxygen, brain damage may occur within minutes, which can result in stroke, paralysis, other disabilities or death. Reliable measurement of absolute levels of brain oxygen is therefore important to clinicians, especially in critical care situations where there may be a high risk of the brain receiving less oxygen than it needs. FORE-SIGHT measures absolute levels of brain oxygenation in the most critically ill patients, including pediatric and neonatal intensive care patients and adults undergoing cardiac bypass and other high risk surgeries. Use of the FORE-SIGHT system enables the clinician to reduce potentially serious negative outcomes in these settings by providing real-time non-invasive measurement of oxygen levels in the brain, allowing the clinician to intervene before brain damage occurs.

Description of Products and Services

The Company has several categories of products and services. The combined categories represent one reportable business unit. Categories of products and services are as follows:

- **Critical Care Monitoring** – includes sales of the FORE-SIGHT cerebral oximeter monitors, sensors and accessories.
- **Blood Pressure Measurement Technology** - includes sales to Original Equipment Manufacturers ("OEM") of the Company's proprietary non-invasive blood pressure technology (MAXNIBP) sold as a discrete module to be included in the OEM customers own multi-parameter monitors, and associated blood pressure cuffs and accessories for the OEM market, and related license fees.

- ***Bedside Monitoring*** – includes sales of the Company’s vital signs and bedside monitors and accessories incorporating various combinations of measurement parameters for both human and veterinary use. Parameters found in these monitors include the Company’s proprietary MAXNIBP non-invasive blood pressure, pulse oximetry, electro-cardiography, temperature, and capnography.
- ***Supplies and Service*** – includes sales of blood pressure cuffs and rapid infusor cuffs, neonatal intensive care supplies including electrodes and skin temperature probes, and service repair.

Critical Care Monitoring

We invented FORE-SIGHT’s LASER-SIGHT technology to fill a vital need in the care of critically ill patients. The brain is the organ least tolerant of oxygen deprivation. Without sufficient oxygen, brain damage may occur within minutes, which can result in stroke, paralysis, other disabilities or death. Deficits in brain oxygen levels can be caused by an imbalance in the oxygen supply to the brain versus the consumption, or metabolism, of oxygen in the brain. Inadequate oxygen supply to the brain can be caused by a number of factors such as a decrease of arterial oxygen saturation levels, or a decrease in blood flow to the brain, or an inadequate concentration of oxygen carrying red blood cells in the blood supply. Reliable measurement of the balance between the supply and demand levels of oxygen in the brain is therefore important to clinicians, especially in critical care situations where there may be a high risk of the brain receiving less oxygen than it needs. In the past, clinicians have had no non-invasive method to accurately measure absolute levels of oxygen saturation in the brain itself. FORE-SIGHT is the only device in its class that has received FDA 510(k) clearance to provide an absolute measure of cerebral tissue oxygen saturation for all patients, regardless of age or weight. Use of the FORE-SIGHT system enables the clinician to reduce potentially serious negative outcomes by providing absolute cerebral tissue oxygen saturation readings that are clinically relevant, repeatable measurements that directly correlate to invasive measurements. The advanced algorithms used in FORE-SIGHT monitor incorporate age and weight to optimize accuracy.

There are approximately six million surgeries performed each year in the U.S. that we believe could be categorized as having a high likelihood of the occurrence of cerebral de-saturations or brain hypoxia and an increased risk of post-operative complications. These surgeries include cardiac and carotid surgeries, as well as other major surgeries involving elderly or other high risk patients. Other immediate applications for FORE-SIGHT include pediatric and neonatal patients undergoing major surgeries and other critically ill patients, such as those in intensive care units (“ICU’s”).

Measurement of the balance of absolute brain oxygen saturation level is important in surgical procedures requiring general anesthesia and in other critical care situations where there may be a high likelihood of brain oxygen deficits. When aware of these potentially life threatening brain oxygen deficits, clinicians can immediately begin corrective actions through various standard interventions to attempt to correct the problem and alleviate the risk of brain injury. In addition, knowledge of absolute brain oxygen saturation levels can guide clinicians regarding the adequacy of the selected therapies, providing immediate feedback on how the patient is responding to a therapy. This immediate knowledge of brain oxygen deficits in any individual patient can have the potential to improve patient outcomes and reduce cost of care.

In the U.S. and other countries around the world, an increased focus has been placed on controlling health care costs. Hospitals in the U.S. often receive a standard fixed fee for monitoring services for each OR procedure, based on the type of procedure rather than on the services performed. Hospitals are increasingly focused on reducing risks during procedures that can result in increased length of stay in high cost critical care settings.

We believe that monitoring absolute cerebral oximetry with FORE-SIGHT can help hospitals contain costs associated with some of the adverse outcomes following surgery. Adverse neurological outcomes following cardiac surgery have been estimated to occur in 6% to 53% of cases. While some of these neurological complications are transient, others may be permanent and include focal injury, stupor, coma, seizures, memory deficit or deterioration in intellectual function. These perioperative neurological complications can dramatically increase the cost of post-operative care. We believe a cost-effective solution to reliably detect and potentially reduce such complications can have a positive impact on improving patient outcomes and reducing the overall cost of care.

The FORE-SIGHT Cerebral Oximeter non-invasively and continuously measures absolute cerebral tissue oxygen levels, enabling clinicians to identify and quickly react to instances of lowered brain oxygen levels before the situation becomes critical. With one or two single-use disposable sensors placed on the patient's forehead, FORE-SIGHT utilizes the Company's LASER-SIGHT Optical Technology to project near infrared light into the brain to provide an absolute measurement indicating cerebral tissue oxygen saturation. The LASER-SIGHT technology uses harmless lasers at 4 discrete wavelengths that are focused to precisely measure at specific points along the oxy- and de-oxy hemoglobin spectra, which allows for accurate and repeatable readings. It is this combination of multiple, precise, laser-based readings and our proprietary algorithm along with our sensor design that allows FORE-SIGHT to deliver absolute, non-trended cerebral oximetry measurements for all patient populations. Our proprietary technology allows the clinician to use the FORE-SIGHT monitor to get absolute cerebral oximetry information at any point during a procedure, as there is no measured or assumed baseline needed.

Our overall Company mission is to create and provide superior non-invasive patient monitoring solutions that are vital to patient care. Our FORE-SIGHT product focus is to provide solutions that improve patient outcomes and thus reduce the cost of patient care in key target procedures. From this we are seeking to establish FORE-SIGHT as a standard of care for high risk surgical procedures and other critical care settings. We intend to grow our market position and the overall size of the available market by adopting the following strategies:

- ***Establish Leadership Position in Adult Cardiac Surgery Market:***

The Company believes that there is significant opportunity for the establishment of FORE-SIGHT Absolute Cerebral Oximetry as a standard of care in all cardio-vascular surgical procedures, where nearly 700,000 procedures are performed annually in the U.S. We believe that the cardiac surgery market is most aware of the risks of brain injury and other damage resulting from oxygen deficits during cardiac bypass and other surgeries, with a large number of published studies demonstrating the importance and effectiveness of monitoring changes in cerebral oximetry during cardiac and thoracic surgery. We believe we are well positioned to maximize the education and awareness of the needs to use absolute cerebral oximetry in this market as a means for hospitals to minimize risks to patients. FORE-SIGHT is already established in 25% of the top 20 hospitals listed as America's Best Hospitals by *U.S. News and World Report*. Establishing FORE-SIGHT as a standard of care in this market will create a platform to leverage other high risk surgical and ICU patient markets.

- ***Develop Pediatric / Neonatal Market Opportunity:***

During 2009, the Company received 510(k) clearances from the Food and Drug Administration ("FDA") to market a Medium size FORE-SIGHT sensor and to expand the indications for use of its FORE-SIGHT Small sensor to include the entire neonatal patient population below 8Kg. These new indications make FORE-SIGHT the only cerebral oximetry monitor on the market capable of providing non-trended, absolute readings on all patient populations. Measuring cerebral oxygen saturation is significant for a variety of neonatal patients, including those born with congenital heart defects that affect the ability of the heart to supply oxygenated blood to the brain. The FORE-SIGHT monitor accurately detects low cerebral oxygen saturation events during critical periods, thereby allowing clinicians to intervene and correct potentially life-threatening events before they become critical. This is especially critical in neonatal patients, who often lack the physiological mechanisms that regulate blood flow and protect the brain from low oxygen levels. Approximately 550 hospitals in the U.S. contain Neonatal Intensive Care Units ("NICU") with 13,000 high acuity Level 3 beds. Approximately four million births occur in the U.S. each year of which approximately 4% are babies with birth defects and about 12% are preterm births (defined as less than 37 weeks gestation).

- ***Seek Out New Opportunities to Expand the Use of FORE-SIGHT into Other Patient Care Settings:***

When FORE-SIGHT was released, our initial focus was on adult cardiac surgery. We have also been marketing its application in vascular, orthopedic, pediatric, neonatal, and other markets. As an example, the orthopedic market has been previously unexplored, but we believe recent emphasis on the potential adverse neurological outcomes, combined with the clinical awareness of the value of FORE-SIGHT absolute cerebral oximetry, will drive demand in this market. The Anesthesia Patient Safety Foundation has recognized that there are increasing reports of severe neurological injury in previously healthy

patients following surgery in non-supine positions, including shoulder surgery in the “beach chair” position, and “believes this is a major patient safety issue that warrants rigorous study.” In the first quarter of 2010, the International Anesthesia Research Society will hold education sessions that examine the use of cerebral oximetry to reduce adverse neurological outcomes in the beach-chair position. The FORE-SIGHT absolute cerebral oximeter has been used to monitor such patients in shoulder surgery, and the value of its use has been presented in several clinical studies. As such, we see opportunity for our product for this market.

- ***Build Infrastructure to Enhance Sales Distribution Channels in Target Markets:***

We believe that our growth has been limited by our lack of adequate sales coverage. The Company is continuing to focus on adding highly skilled sales and clinical specialists with clinical and research backgrounds that are able to meet and drive continued demand for FORE-SIGHT. The Company has expanded the number of manufacturer representative groups in the U.S. and now has full national coverage. In Europe, the Company hired two sales managers during 2009 and expects to have distribution coverage in all major European markets during 2010. The Company has distribution and sales management covering the Middle East and is establishing distribution in Asia / Pacific during 2010. With the recent addition of sales and clinical staff, and the expansion of our distribution channel in both the U.S. and international markets, CASMED expects to be able to address more of the customer demand for FORE-SIGHT absolute cerebral oximetry.

- ***Seek Partners to Interface and Integrate FORE-SIGHT into Other Monitoring Systems:***

We believe the integration of FORE-SIGHT derived parameters with additional commonly monitored parameters on one display will enhance the utility and acceptance of FORE-SIGHT in the clinical community. There are many pre-existing multi-parameter monitoring systems in the operating room and the ICU. Multi-parameter monitors can also act as an important gateway to electronic medical records and automated data archiving systems. We believe that interfacing to other systems is a significant factor in maximizing customer acceptance of a new technology. During 2009, the FORE-SIGHT system was successfully interfaced to a number of different systems including Philips Healthcare’s IntelliVue monitoring system, via the Vuelink Module System. We plan to continue to expand the number of multi-parameter monitors and data archiving systems that FORE-SIGHT can interface to, and we believe that these interfaces may provide additional sales opportunities for our FORE-SIGHT system.

- ***Continue to Innovate to Maintain and Protect Our Technology Leadership Position:***

Over the past year, we have developed and released two new FORE-SIGHT sensors as well as various monitor and algorithm improvements. We believe that maintaining our technical leadership position is vital and, as such, we are continuing to invest in furthering the LASER-SIGHT technology. Our product development pipeline includes a number of new LASER-SIGHT technology based products to enhance our market opportunity. We are also in the process of investigating various algorithm improvements and enhanced parameter features for the FORE-SIGHT system. We have four existing U.S. patents protecting various aspects of our LASER-SIGHT technology as well as nine filed patent applications and numerous provisional patents filed.

- ***Sponsor Clinical Research Studies to Expand Acceptance of the FORE-SIGHT System:***

Approximately 30 abstracts were published in 2009 involving use of the FORE-SIGHT Absolute Cerebral Oximeter. Several studies have already been published in peer-review journals showing that the use of cerebral oximetry during cardiac surgery can significantly reduce adverse clinical outcomes due to neurological complications, including permanent stroke. Recent examples of published studies including FORE-SIGHT monitoring include –

- In January 2010, a paper was published in the British Journal of Anaesthesia, authored by Dr. Gregory Fischer et al., titled, “*Mathematical model for describing cerebral oxygen desaturation in patients undergoing deep hypothermic circulatory arrest.*” This study, on 36 patients, demonstrated that a mathematical model could be created that accurately described the rate of cerebral desaturation during circulatory arrest. These researchers concluded that the proposed model “can aid the clinician in determining the length of DHCA [deep hypothermic circulatory arrest] that can be undertaken

safely and can be utilized to define the safest time point to commence DHCA.”

- In December 2009, a paper was published in the British Journal of Anaesthesia, authored by R. Kazan, D. Bracco and T. M. Hemmerling, titled, “*Reduced cerebral oxygen saturation measured by absolute cerebral oximetry during thoracic surgery correlates with postoperative complications.*” These researchers concluded that, in 50 patients undergoing thoracic surgery with greater than 45 minutes of single-lung ventilation, a significant decrease in cerebral tissue oxygenation (SctO₂) was seen, and this correlated with post-operative cognitive dysfunction.
- In January 2009, a review paper published in the Journal of Perinatology and authored by JC Fenik and K. Rais-Bahrami titled, “*Neonatal cerebral oximetry monitoring during ECMO cannulation,*” detailed the benefits of absolute cerebral oximetry in neonatal patients undergoing extracorporeal membrane oxygenation (ECMO) therapy, including its ability to reliably measure brain oxygen levels during CPR when conventional technologies such as pulse oximetry have failed.
- In June 2008, a paper published by Thomas Hemmerling M.D., et al., “*Cerebral desaturation during single lung ventilation correlates with postoperative morbidity,*” in Canadian Journal of Anesthesia Supplement detailed the benefits of monitoring absolute cerebral oximetry in patients undergoing single lung ventilation (SLV) and showed a positive correlation between the decrease of SctO₂ during SLV and postoperative non-pulmonary organ failure.
- In March 2008, a review paper published by Gregory W. Fischer, M.D., Co-Director of Cardiac Anesthesia at Mount Sinai Medical Center in New York, “*Recent Advances in the Application of Cerebral Oximetry in Adult Cardiovascular Surgery,*” in Seminars in Cardiothoracic and Vascular Anesthesia detailed the benefits of absolute cerebral oximetry in patients undergoing Deep Hypothermic Cardiac Arrest (“DHCA”) aortic arch surgery.

Additional studies using FORE-SIGHT in cardiac, thoracic, vascular, orthopedic and other surgeries, as well as in the adult, pediatric and neonatal intensive care setting are underway in the U.S. and Europe, with results from these studies expected to be published during 2010.

The Company continues to evaluate sponsoring other clinical studies that expand the use of FORE-SIGHT Absolute Cerebral Oximetry into other patient populations and applications. In the first quarter of 2010, we are already aware of a number of ongoing and soon to be published studies where researchers are using FORE-SIGHT to monitor ischemia and oxygenation of non-cerebral tissue.

2009 FORE-SIGHT Highlights

- FORE-SIGHT related revenue for 2009 increased by 79% to \$4.1 million, versus \$2.3 million for 2008.
- Sensor related sales account for approximately 67% of total FORE-SIGHT sales for 2009.
- Total installations during 2009 increased by 87 monitors to a total of 238 at year end.
- Approximately 70% of monitors installed during 2009 were sold, rather than placed.
- FORE-SIGHT monitors are installed in approximately 100 hospitals worldwide.
- FDA clearance for expanded labeling to include neonates weighing less than 2.5kg.
- FDA clearance of Medium (pediatric) sensor.
- Monitors are installed and generating revenue at 5 of the top 20 hospitals listed as America’s Best Hospitals by *U.S. News and World Report*.
- Monitors are installed and generating revenue in 4 of the top 25 hospitals listed as *U.S. News and World Report*’s Best Children’s Heart and Heart Surgery Hospitals.
- Continued expansion of sales distribution channels in Europe and the hiring of 2 new European sales managers focused exclusively on the FORE-SIGHT market.
- First European Center of Excellence established in Genk, Belgium.

- Publication of six papers in various peer-reviewed journals and periodical reviews, as well as over thirty abstracts, demonstrating the utility and accuracy of FORE-SIGHT technology in a range of different clinical applications, and the value of absolute cerebral oximetry to improve patients' cognitive outcomes following surgery.

Increased clinical research with follow-on studies began at Duke University Medical Center and Mt. Sinai Medical Center to support the use of FORE-SIGHT cerebral oximetry in elderly and CABG patients. Additional research at a number of sites in the U.S. and Europe in a variety of applications including orthopedic shoulder surgery, carotid endarterectomy, cardiothoracic surgery, and various neonatal applications.

Blood Pressure Measurement Technology

The Company has developed a proprietary non-invasive blood pressure measurement technology, MAXNIBP. The Company believes this technology is more accurate, reliable, and able to produce a measurement result faster than its competitors. These advantages strengthen the Company's competitive position, especially in the most challenging clinical situations where measurements can be difficult to obtain. The Company has entered into OEM agreements to supply its MAXNIBP technology to various companies throughout the world. This technology is used in larger monitoring systems where non-invasive blood pressure is one of many measurement parameters. The Company's OEM agreements are typically multi-year arrangements. The Company has a multi-year supply agreement with its largest OEM customer – Medtronic Physio-Control, which was renewed during the first quarter of 2010 and will expire in 2013. Sales to this customer accounted for 11% of total Company sales during 2009.

Bedside Monitoring

The Company offers a full line of non-invasive vital signs monitoring products for a variety of general care settings in hospitals such as outpatient medical surgical units, recovery, procedure labs, physician offices and emergency response settings. The monitors are small, lightweight, portable and easy to use with central station capabilities.

The Company manufactures two platforms of vital signs monitors based around its proprietary MAXNIBP non-invasive blood pressure technology and incorporating various combinations of other industry-leading measurement parameters. The Company believes that its MAXNIBP technology is more accurate, reliable, and able to produce a measurement result faster than its competitors and an advantage over competing products especially in the most challenging clinical situations where measurements can be difficult to obtain. In addition to the Company's proprietary MAXNIBP technology, measurement options include pulse oximetry, electro-cardiography, temperature, and capnography. CASMED monitors are ideal for a range of clinical settings (both human and veterinary) including emergency medical service, medical/surgical units, out-patient care, and procedural sedation. The Company has a blanket agreement with the U.S. Department of Veterans Affairs ("VA") for purchase of its vital signs monitors through December 2010. Over the past five years, the Company has sold close to 12,000 vital signs monitors to the VA hospitals and clinics throughout the U.S. Collective sales to VA hospitals accounted for over 11% of overall sales for 2009.

Other products included in the bedside monitoring category are a line of cardio-respiratory monitors used to monitor apnea in home-based and hospital settings and products developed and manufactured by Analogic Corporation, or otherwise supplied through Analogic. During August 2009, the Company reached an agreement with Analogic under which the Company will discontinue marketing Analogic products effective July 31, 2010. In addition, the Company has taken steps to exit the cardio-respiratory monitoring market, which is primarily a niche replacement market with revenues declining steadily over the past several years. Sales of cardio-respiratory and Analogic products accounted for approximately 7% of overall sales in 2009.

Supplies and Service

The Company offers a complete line of disposable and reusable blood pressure cuffs that can be used with any manufacturer's monitoring equipment. The product line includes cuffs and pressure infusors manufactured by Statcorp, Inc. which was purchased by CASMED in 2005. The blood pressure cuffs, including UltraCheck Reusable Cuffs, and SoftCheck Disposable Cuffs, can be used on patients from neonate through adult, as well as on veterinary patients, and complement the Company's MAXNIBP blood pressure measurement technology. The Company's Unifusor line of infusor cuffs are used to rapidly infuse intra-venous fluids into a patient. The Company has various private-label versions of both the blood pressure and infusor cuffs available for OEM partners.

Also in the supplies and services category are a line of specialty neonatal supplies manufactured in our Branford, CT facility. These high quality single patient use products are designed specifically to meet the unique needs of neonatal intensive care. The varied product line includes Klear-Trace ECG Electrodes, NeoGuard skin temperature probes and adhesive reflectors.

Sales and Marketing

The Company markets its products globally, through hospital, alternate site, homecare, veterinary and emergency medical distribution channels. A number of different sales channels are utilized to maximize opportunities with the various product lines we offer.

The Company's critical care FORE-SIGHT cerebral oximeters are sold via a direct sales force and key manufacturers' representatives groups within the U.S. and via distribution partners outside the U.S. As of December 31, 2009, the Company employed a team of 12 sales and clinical support specialist staff dedicated to the FORE-SIGHT product line in the U.S. market. Outside the United States, the Company has four sales consultants located in Europe, the Middle East and the Pacific Rim focused on FORE-SIGHT sales, selling to select markets via distribution partners. We expect to continue increase the size of our sales team.

The Company sells its non-invasive blood pressure technology, in the form of sub-assemblies to be assembled into other OEM company's multi-parameter monitors. The Company sells on a direct basis to various other companies operating in both the domestic and international markets. The Company is in the process of pursuing additional OEM agreements.

The Company's bedside monitoring products and consumable cuff products are sold within the U.S. via manufacturers' representatives and distributors. International sales are conducted through exclusive distributors in the European, African, Middle Eastern, Pacific Rim and Latin American regions and Canada.

Sales of the Company's supplies and services are primarily sold via key distribution partners in both the U.S. and International markets.

Financial Information Relating to Sales**Year Ended December 31**

	<u>2009</u>	<u>2008</u>	<u>2007</u>
Domestic Sales	\$ 23,637,277	\$ 30,031,921	\$ 29,601,305
International Sales	<u>10,597,941</u>	<u>10,617,136</u>	<u>8,631,100</u>
	<u>\$ 34,235,218</u>	<u>\$ 40,649,057</u>	<u>\$ 38,232,405</u>

Competition

The Company competes in the medical equipment market where there are many suppliers with greater financial and personnel resources that sell a broad line of both commodity products and monitoring equipment and have a dedicated selling capability. The Company's products primarily serve various areas of the hospital market.

For our critical care monitoring products, we believe there are currently three other companies with FDA 510(k) clearances to sell a cerebral oximeter in the U.S. as well other companies selling competitive products in various international markets and other indirect competitors measuring other related parameters. We believe that in the future the market for cerebral oximetry may become more highly competitive. We are aware that several companies and individuals are engaged in the research and development of non-invasive cerebral oximeters, and we believe that there are several other potential entrants into the market. Additionally there are other companies that have FDA clearance to market somatic or tissue oximeters in the United States. Competition might cause our sales cycle to lengthen to the extent that customers take longer to make purchasing decisions. Competition might also reduce our gross margins and market share and prevent us from achieving further market penetration. Competitors might be more successful than we are in obtaining FDA clearance with broader claims in their labeling or more successful than we are in manufacturing and marketing their products and may be able to take advantage of the significant time and effort we have invested to gain medical acceptance of cerebral oximetry.

We believe that the principal competitive factors that we and other companies competing in the cerebral oximetry market must address include:

- FDA approval or clearance;
- accuracy, reliability and repeatability of measurement;
- publication of peer reviewed clinical studies;
- acceptance by leading thought-leaders in anesthesia, surgery, perfusion and other key clinical roles;
- documented improved patient outcomes and reduced lengths of stay;
- cost effectiveness of solution and overall pricing;
- interfacing of the technology with modular patient monitoring and data archiving systems;
- overall ease of use and product quality;
- sales and marketing capability and established sales distribution channels;
- IP protection, and timing and acceptance of product innovation.

For our line of bedside monitoring products and supplies, we are in a highly competitive global market with numerous U.S. and international based medical equipment companies.

We also compete with numerous medical equipment companies and medical device integration companies for the portions of hospital budgets allocated to capital equipment. Some of these potential competitors have well-established reputations, customer relationships and extensive marketing, distribution and service networks. Some of them have substantially longer histories in the medical products industry, larger product lines and greater financial, technical, manufacturing, research and development and management resources than we do. Many of these potential competitors have long-term product supply relationships with our potential customers. These potential competitors might be able to use their resources, reputations and ability to leverage existing customer relationships to give them a competitive advantage over us, including in securing dollars from hospital capital equipment budgets to purchase their products. They might also succeed in developing products that are at least as reliable and effective as our products, perform additional measurements, are less costly than our products or provide alternatives to our products. Competitors might be more successful than we are in manufacturing and marketing their products and may be able to take advantage of the significant time and effort we have invested in developing our markets.

The Company's products maintain a high, professional standard of accuracy and quality in demanding environments such as those encountered in hospital and transport situations. We believe that our reputation for producing innovative, accurate, reliable, products that are user-friendly, manufactured in the U.S., and contain best-in-class technology are key factors in our ability to successfully compete with larger organizations in the medical equipment market. With respect to all of its products, the Company competes on the basis of price, features, product quality and promptness of delivery and overall quality of customer service.

Research and Development

As of December 31, 2009, our research and development (“R&D”) department consisted of a staff of 16 full-time engineers and scientists focused on the following primary areas:

- advanced algorithm research
- sensor and optical development
- hardware development and support
- clinical research

Our R&D efforts focus primarily on continuing to improve the function and features of the Company’s FORE-SIGHT Cerebral Oximeter and enhancing our technical position in Near-Infrared Spectroscopy (“NIRS”) technology. We intend to explore opportunities to leverage our patented LASER-SIGHT NIRS technology for continued monitor and sensor development and to take advantage of new market opportunities as they emerge, such as the intensive care unit and beach chair surgery markets. Other development efforts include advancing the design of the Company’s MAXNIBP non-invasive blood pressure technology.

In 1999, we began initial research efforts in NIRS based cerebral oximetry and, after successful initial clinical research proof of concept studies, in 2003 began the development task for our first commercial cerebral oximeter. The adult version FORE-SIGHT cerebral oximeter was released in May 2007 and was followed by a number of enhancements including the addition of the Small (neonatal) sensor in 2008. In 2009 the Company completed its cerebral oximetry sensor offerings with the releases of the non-adhesive Small sensor and the Medium sensor. The target markets for the Medium sensor are in the areas of pediatric intensive care, pediatric cardiovascular OR and cardiovascular intensive care. In the U.S. there are 3,800 pediatric intensive care beds and over 200,000 patients per year. The non adhesive Small sensor is designed specifically for preserving the skin integrity of newborns and preterm infants. The newborn and preterm infant population has varying degrees of fragile, underdeveloped skin that can be easily damaged by adhesives. Also during 2009, the monitor software was also updated to allow data collected on FORE-SIGHT to be integrated with three other providers. Most notably, FORE-SIGHT was made compatible with the large installed base of Philips Healthcare’s IntelliVue and CMS Patient Monitors. This patient data integration reduces the number of displays, control, alarm and documentation points at the bedside - offering convenient central viewing of decision support variables and providing a clear view of patient information.

During 2009 we began R&D efforts to expand our LASER-SIGHT technology into the related market of measuring oxygen levels in other tissue and organs. The Company conducted various clinical studies during the year on adult, pediatric and neonatal patients, as well as animal studies, to prove efficacy and accuracy in this application. This work resulted in the filing of a 510(k) premarket notification with the FDA during the fourth quarter of 2009 for an expansion of the FORE-SIGHT technology to include tissue oximetry, along with cerebral oximetry, measurements. The Company plans to launch this expanded feature product during the second half of 2010 and expects a number of clinical abstracts and publications to be available during the year to support its application in a variety of settings. The Company has filed a number of provisional patent applications related to this new application.

During 2009, 2008 and 2007, the Company incurred R&D related expenses of approximately \$3,197,000, \$2,610,000, and \$2,733,000, or 9%, 6% and 7%, of revenues respectively. These amounts are before consideration of reimbursements received from the National Institutes of Health (“NIH”) further explained under Grant Awards below. Net R&D expenses after reimbursements from the NIH for 2009, 2008 and 2007 approximated \$2,460,000, \$2,028,000, and \$2,254,000, or 7%, 5% and 6%, of revenues respectively. Reimbursements from the NIH were approximately \$737,000 for 2009, \$582,000 for 2008, and \$479,000 for 2007. Funding provided to the Company is recorded as a reduction in R&D expenses.

For 2010, we expect our net R&D expenses to be lower than 2009 primarily due to staff reductions performed during 2009 in non FORE-SIGHT related R&D activities, slightly lower NIH reimbursements and the transfer of certain personnel from R&D to S,G,& A functions. R&D activities for 2010 will be primarily focused on the continued advancement of the Company’s proprietary LASER-SIGHT and MAXNIBP technologies with continued algorithm development programs, technology integration and cost reduction programs and further enhancements to

FORE-SIGHT including the design and development of a next generation platform and continued clinical research efforts.

Grant Awards

On September 17, 2007, the Company was awarded a three year grant totaling \$2.8 million by the National Institute of Neurological Disorders (“NINDS”) and Stroke of the NIH under its Small Business Innovative Research Program. The grant was awarded primarily to support advanced clinical outcome studies that focus on the Company’s proprietary LASER-SIGHT technology that is incorporated into the FORE-SIGHT cerebral oximeter. Further clinical studies funded by this grant will be used to expand the clinical applications for FORE-SIGHT outside of the initial target market of high risk cardiovascular surgery. As of December 31, 2009, a maximum of approximately \$1.0 million remained under the 2007 grant award. The Company has, in prior years, been awarded various grants by the NINDS under its Small Business Innovative Research Program. Grants under this program are being used to support the Company’s LASER-SIGHT NIRS development. In accordance with the terms of these grants, the Company is reimbursed for certain qualifying expenditures. Such grant awards provide substantial support for the Company’s clinical efforts currently being undertaken at multiple adult and neonatal sites.

Trademarks, Patents and Copyrights

Certificates of Registration have been issued to the Company by the United States Department of Commerce Patent and Trademark Office for the following marks: CAS[®], CAS Express[®], CASMED[®], COOL-LIGHT[®], For Every Life and Breath Situation[®], For What’s Vital[®], FORE-SIGHT[®], HOLD-TIGHT[®], Klear-Trace[®], LASER-SIGHT[®], MAXNIBP[®], Mother/baby[®], NeoGuard[®], OscilloMate[®], Pedisphyg[®], Premie Nestie[®], Safe-Cuff[®], SoftCheck[®], SWANK[®], Tuff-Cuff[®], UltraCheck[®], Unifusor[®], Woods Pump[®], the heart shaped mark for use as a thermal reflector, the Statcorp logo and the Company's corporate logo. The Company also holds trademarks for the Event-Link[®] monitoring system, the Edentec Assurance[®] monitor, Edentrend[®] software and the AMI[®] and AMI[®] Plus monitors.

The Company holds various patents for its blood pressure measurement and apnea monitoring technologies which it believes provide it with a competitive market advantage. Although the Company holds such patents and has patents pending related to certain of its products, it does not believe that its business as a whole is significantly dependent upon patent protection with the exception of the FORE-SIGHT cerebral oximetry technology.

The FORE-SIGHT NIRS cerebral oximetry technology has four U.S. patents issued (U.S. 6,456,862 B2, 7,047,054, 7,072,701, and 7,313,427) and one international patent issued. In addition, the Company currently has several patents pending with U.S. and foreign patent offices. The Company believes the design concepts covered in its current patent applications and provisional patent applications are important to providing a cerebral oximeter capable of absolute brain tissue oxygen saturation measurements.

Other patents have previously been issued to third parties involving optical spectroscopy and the interaction of light with tissue, some of which relate to the use of optical spectroscopy and NIRS in the area of brain metabolism monitoring. The Company is currently engaged in pending patent litigation with Somanetics Corporation. See “Item 3 – Legal Proceedings.”

The Company also relies on trade secret, copyright and other laws and on confidentiality agreements to protect its technology. The Company has copyright protection for the software used in its blood pressure and cerebral oximeter monitors.

The Company will continue to seek patent, trademark and copyright protections as it deems advisable to protect the markets for its products and its R&D efforts. We believe that neither our patents nor our other legal rights will necessarily prevent third parties from developing or using a similar or a related technology to compete against our products.

Employees

As of December 31, 2009, the Company had 142 employees, of which 140 were full-time. The Company has no collective bargaining agreements and believes that relations with its employees are good.

Government Regulation

Medical products of the type currently being marketed and under development by the Company are subject to regulation under the Food, Drug and Cosmetic Act (the "FD&C Act") and numerous acts and amendments such as the Quality System Regulations ("QSR"), often referred to as Good Manufacturing Practices ("GMPs").

In addition, depending upon product type, the Company must also comply with those regulations governing the Conduct of Human Investigations, Pre-Market Notification Regulations and other requirements, as promulgated by the FDA. The FDA is authorized to inspect a device, its labeling and advertising, and the facilities in which it is manufactured in order to ensure that the device is not manufactured or labeled in a manner which could cause it to be in violation of the FD&C Act.

The FDA has adopted regulations which classify medical devices based upon the degree of regulation believed necessary to assure safety and efficacy. A device is classified as a Class I, II, or III device. Class I devices are subject only to general controls. Class II devices, in addition to general controls, are or will be subject to "performance standards." Most devices are also subject to the 510(k) pre-market notification provision. In addition, some Class III devices require FDA pre-market approval before they may be marketed commercially because their safety and effectiveness cannot be assured by the general controls and performance standards of Class I or II devices.

The Company's products are primarily Class I and II devices and several of them have required FDA notification under Section 510(k) of the FD&C Act.

The FDA has the authority to, among other things, deny marketing approval until all regulatory protocols are deemed acceptable, halt the shipment of defective products, and seize defective products sold to customers. Adverse publicity from the FDA, if any, could have a negative impact upon sales. In the last factory inspection of the Company there were no material non-conformities.

International Regulatory Compliance

CASMED maintains certification to ISO 13485:2003 by the accredited body, BSI Inc., in each of its manufacturing facilities. These certifications allow CASMED to use the "CE" mark on its products. The CE mark is required for medical devices to gain access to the European Union common market. The FDA, recognizing the value of this universally accepted quality system, has patterned its Quality System Regulations after ISO 9001 and ISO 13485. CASMED maintains full compliance with the FDA Quality System Regulations and has recently been recertified to ISO-13485.

Manufacturing and Quality Assurance

The Company assembles its products at its facilities in Branford, Connecticut and Jacksonville, Florida. The various components for the products, which include plastic sheeting, plastic moldings, wire, printed circuit boards, semi-conductor circuits, electronic and pneumatic components, power supplies, proprietary software and many other parts and sub-assemblies are obtained from outside vendors. The Company has not experienced any sustained interruption in production or the supply of components and does not anticipate any difficulties in obtaining the components necessary to manufacture its products.

Quality control procedures are performed by the Company at its facilities and occasionally at its suppliers' facilities to standards set forth in the FDA's "Quality System Regulations." These procedures include the inspection of components and full testing of finished goods. The Company has a controlled environment where the final assembly of single-patient-use products is conducted.

Customers

Our five largest customers accounted for approximately 27%, 31%, and 26% of revenues in 2009, 2008, and 2007, respectively. Among these customers, Medtronic, Inc., customarily the Company's largest individual customer accounted for 11% and 12% of revenues during 2009 and 2008, respectively. During 2007, no customer accounted for 10% or more of the Company's revenues. During January 2007, Medtronic announced a voluntary suspension of shipments to U.S. customers from its Physio-Control division. On February 16, 2010, Medtronic announced that it had received a FDA approval to resume unrestricted worldwide shipments of its external defibrillators.

Backlog

The Company's backlog includes orders pursuant to long-term OEM agreements as well as orders for products shippable on a current basis. Total backlog, therefore, is not a meaningful indicator of future sales.

Corporate Information

CAS Medical Systems, Inc. is a Delaware corporation organized in 1984. Our corporate offices are located at 44 East Industrial Road, Branford, CT 06405, and our telephone number is (203) 488-6056. Our website address is www.casmed.com. The information on, or that can be accessed through, our website is not a part of this report.

Item 1A. Risk Factors

Our business faces many risks. If any of the events or circumstances described in the following risk factors actually occurs, our business, financial condition or results of operations could suffer, and the trading price of our common stock could decline. The risks described below may not be the only risks we face. Additional risks that we do not yet know of or that we currently believe are immaterial may also impair our business operations. You should consider the following risks, as well as the other information included or incorporated by reference in this Form 10-K before deciding to invest in our common stock.

We Have A Recent History of Net Losses and are Subject to Risks Regarding Future Liquidity

We have experienced operating losses during our two most recent fiscal years. There can be no assurance that we will be able to improve our results of operations in the near term or at all.

Our ordinary short-term capital needs are expected to be met from a combination of cash flows from operations and borrowings under our line-of-credit agreement. Future cash flows, however, may be impacted by a number of factors, including changing market conditions, market acceptance of the FORE-SIGHT system, changes in payment terms to one or more major suppliers and the loss of one or more key customers. Our borrowings may be impacted by our failure to meet financial covenants under our current or any future loan agreement or the discretionary actions of our lender.

We believe that our current levels of working capital and available debt financing are insufficient to fund major growth initiatives, such as significant increases in our sales and marketing personnel, or material acquisitions. Any major growth initiatives would require us to seek other sources or forms of debt or equity capital. There can be no assurance that we will be successful in securing such funding for major initiatives. Any issuance of equity or equity-linked securities would dilute the ownership interest of existing shareholders.

We Are a Small Company In A Highly Competitive Industry

Competition from other medical device companies, diversified healthcare companies and research and academic institutions is intense and expected to increase. Many companies engaged in the medical device sector have substantially greater financial and other resources and development capabilities than we do, and have substantially greater experience in testing of products, obtaining regulatory approvals and manufacturing and marketing medical devices. Therefore, our competitors may succeed in obtaining approval for products more rapidly than we can. Other companies may succeed in developing and commercializing products earlier than we do. In addition to competing with universities and other research institutions in the development of products, technologies and

processes, the Company may compete with other companies in acquiring rights to products or technologies from universities. Also, the medical device market is experiencing increasing customer concentration, due to the emergence of large purchasing groups. We cannot assure you that we will develop products that are more effective or achieve greater market acceptance than competitive products, or that our competitors will not succeed in developing products and technologies that are more effective than those being developed by us or that would render our products and technologies less competitive or obsolete. Moreover, there can be no assurance that we will be able to successfully sell to large purchasing groups, which are increasingly looking to suppliers that can provide a broader range of products than we currently offer.

Our Business Is Impacted By Customer Concentration

Our five largest customers accounted for approximately 27%, 31%, and 26% of revenues in 2009, 2008, and 2007, respectively. Among these customers, Medtronic, Inc., customarily the Company's largest single customer, accounted for 11% and 12% of revenues during 2009 and 2008, respectively. In addition, the Company has a blanket agreement with the U.S. Department of Veterans Affairs ("VA") for purchase of its vital signs monitors through December 2010. Over the past five years, the Company has sold close to 12,000 vital signs monitors to the VA hospitals and clinics throughout the U.S. Collective sales to VA hospitals accounted for over 11% of overall sales for 2009. The failure to renew the blanket agreement with the VA or the loss of any other significant customer could have a material adverse effect on our financial position and results of operations.

We Are Party to Material Patent Litigation

On August 7, 2009, Somanetics Corporation ("Somanetics") filed an action against the Company in the United States District Court for the Eastern District of Michigan alleging patent infringement, false advertising, and common law unfair competition and libel relating to the Company's FORE-SIGHT product line. The complaint requests injunctive relief and unspecified monetary damages, including treble damages and reasonable attorneys' fees. On October 19, 2009, the Company answered the complaint, denying all allegations against it. In addition, the Company has asserted counterclaims against Somanetics for violation of the antitrust laws and for a declaration that the patents sued upon are invalid, unenforceable, and/or have not been infringed by the Company. The defense and prosecution of this matter is likely to be both costly and time-consuming, even if the outcome is favorable to us. An adverse outcome in the defense of this matter could cause us to lose proprietary rights with respect to our FORE-SIGHT product, subject us to significant liabilities or require us to license rights at significant cost or to cease selling our FORE-SIGHT products. Any of these events could have a material adverse effect on our business, operating results and financial condition.

The Recent Global Economic Crisis Has Had And May Continue To Have A Negative Effect On Our Business And Operations

The recent global economic crisis has caused, among other things, reductions in hospital capital equipment expenditures, which has had and is expected to continue to have a negative effect on our business and results of operations. Many of our customers and suppliers have been affected by the current economic turmoil. Current or potential customers and suppliers may no longer be in business, may be unable to fund purchases or determine to reduce purchases, all of which has led and is expected to continue to lead to reduced demand for our products and increased customer payment delays. Further, suppliers may not be able to supply us with needed components on a timely basis, may increase prices, or may go out of business, which could result in our inability to meet customer demand or affect our gross margins. The timing and nature of any recovery in the economy remains uncertain, and there can be no assurance that market conditions will improve in the near future or that our results will not be materially and adversely affected. Such conditions make it very difficult to forecast operating results, make business decisions and identify and address material business risks.

We Are Devoting Substantial Resources To The Development And Marketing Of Our Cerebral Oximetry Products

We expect to devote a significant amount of resources to continue the development and marketing of our FORE-SIGHT cerebral oximetry products. We believe that substantial resources are required to further penetrate the

markets for these products. Such investments include further research and development, including significant expenditures for clinical studies, equipment for placements at customer sites, further expansion of a direct sales force, marketing expenditures and general working capital requirements. There can be no assurance that we will be successful in these endeavors. In addition, since we have limited financial resources, our emphasis on the FORE-SIGHT cerebral oximetry products may result in a lack of sufficient resources available for our other existing product lines, which may negatively impact our overall financial results.

The Sale Of Our Products May Result In Significant Product Liability Exposure

As a manufacturer of medical diagnostic equipment, we face product liability claims. We maintain product liability insurance in an aggregate amount of \$5 million. We cannot assure you that this insurance coverage will be adequate to cover any product liability claims that occur in the future or that product liability insurance will continue to be available at reasonable prices. We are currently a defendant in a product liability action. A trial date has not yet been scheduled for this matter. We believe that our product liability insurance is sufficient to cover any damages and costs that are likely with respect to this matter. Any product liability judgments or settlements in excess of insurance coverage could have a material adverse effect on our business and results of operations.

Our Business Could Be Adversely Affected If We Cannot Protect Our Proprietary Technology Or If We Infringe On The Proprietary Technology Of Others.

Our proprietary technology aids our ability to compete effectively with other companies in certain markets in which we compete. Although we have been awarded, have filed applications for, or have been licensed under numerous patents, these patents may not fully protect our technology or competitive position. Further, our competitors may apply for and obtain patents that will restrict our ability to make and sell our products.

Our competitors may intentionally infringe our patents. Third parties may also assert infringement claims against us. Litigation may be necessary to enforce patents issued to us, to protect our trade secrets or know-how, to defend ourselves against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. The defense and prosecution of patent suits are both costly and time-consuming, even if the outcome is favorable to us. Such proceedings can be extremely expensive and their outcome very unpredictable. An adverse outcome in the defense of a patent suit could cause us to lose proprietary rights, subject us to significant liabilities to third parties or require us to license rights from third parties or to cease selling our products. Any of these events could have a material adverse effect on our business, operating results and financial condition. We also rely on unpatented proprietary technology that others may independently develop or otherwise obtain access to. Our inability to maintain the proprietary nature of our technologies could negatively affect our revenues and earnings.

We Are Subject To Significant Government Regulation

Our business is subject to varying degrees of governmental regulation in the countries in which we operate. In the United States, our products are subject to regulation as medical devices by the FDA, and by other federal and state agencies. These regulations pertain to the manufacturing, labeling, development and testing of our devices as well as to the maintenance of required records. An FDA regulation also requires prompt reporting by all medical device manufacturers of an event or malfunction involving a medical device where the device caused or contributed to death or serious injury or is likely to do so.

Federal law provides for several routes by which the FDA reviews medical devices before their entry into the marketplace. Medical products of the type currently being marketed and under development by us are subject to regulation under the FD&C Act and numerous acts and amendments such as the Quality System Regulations which replaced the regulations formerly called Good Manufacturing Practices. In addition, depending upon product type, we must also comply with those regulations governing the Conduct of Human Investigations, Pre-Market Regulations and other requirements, as promulgated by the FDA. The FDA is authorized to inspect a device, its labeling and advertising, and the facilities in which it is manufactured in order to ensure that the device is not manufactured or labeled in a manner which could cause it to be injurious to health.

The FDA has adopted regulations which classify medical devices based upon the degree of regulation believed necessary to assure safety and efficacy. A device is classified as a Class I, II, or III device. Class I devices are subject only to general controls. Class II devices, in addition to general controls, are or will be subject to "performance standards." Most devices are also subject to the 510(k) pre-market notification provision. In addition, some Class III devices require FDA pre-market approval before they may be marketed commercially because their safety and effectiveness cannot be assured by the general controls and performance standards of Class I or II devices. Our products are primarily Class I and II devices and several of them have required FDA notification under Section 510(k) of the FD&C Act.

Satisfaction of clearance or approval requirements may take up to several years or more and may vary substantially based upon the type, complexity and novelty of the product. The effect of government regulation may be to delay marketing of new products for a considerable or indefinite period of time, to impose costly procedures upon our activities and to furnish a competitive advantage to larger companies that compete with us. We cannot assure you that FDA or other regulatory clearance or approval for any products we develop will be granted on a timely basis, if at all, or, once granted, that clearances or approvals will not be withdrawn or other regulatory action taken which might limit our ability to market our proposed products. Any delay in obtaining or failure to obtain these clearances or approvals would adversely affect the manufacturing and marketing of our products and the ability to generate additional product revenue.

Federal Regulatory Reforms May Adversely Affect Our Ability To Successfully Market Our Products And Impact Our Financial Condition

Recent efforts to reform the U.S. health care industry led by President Obama and certain members of Congress have resulted in legislation and other measures which will effect changes in healthcare delivery and coverage, and public and private reimbursements for services performed. Federal initiatives may also affect state programs. Legislative changes may affect hospital market expenditures for medical devices, the type and volume of procedures performed, and the demand for new and innovative products. These changes could be significant and may adversely affect the demand for our products, our results of operations, cash flows and our overall financial condition.

Outside of the U.S., healthcare delivery and reimbursement systems vary by country. Efforts to control rising healthcare costs, changes in government sponsored programs and participation and various other economic factors may impact our ability to successfully market our products outside of the U.S.

We Rely To A Significant Degree On Our Proprietary Rights

We rely on a combination of patents, trade secrets, trademarks and non-disclosure agreements to protect our proprietary rights. We cannot assure you that our patent applications will result in the issuance of patents or that any patents owned by us now or in the future will afford protection against competitors that develop similar technology. We also cannot assure you that our non-disclosure agreements will provide meaningful protection for our trade secrets or other proprietary information. Moreover, in the absence of patent protection, our business may be adversely affected by competitors who independently develop substantially equivalent or superior technology.

Our Products May Become Rapidly Obsolete

The areas in which we are developing, distributing, and/or licensing products involve rapidly developing technology. Others may develop products that might cause products being developed, distributed or licensed by us to become obsolete or uneconomical or result in products superior to our products.

We Are Subject to Currency and Related Risks

Our international sales subject us to currency and related risks. Our international sales accounted for 31% of our total net sales for the 2009 fiscal year. We expect that international sales will continue to constitute a significant portion of our business. Although we sell our products in United States dollars and are not subject to significant currency risks, an increase in the value of the United States dollar relative to foreign currencies in our international

markets could make our products less price competitive in these markets.

An Acquisition Of The Company May Be Hindered

Our Board of Directors is authorized to issue from time to time, without stockholder authorization, shares of preferred stock, in one or more designated series or classes. We are also subject to a Delaware statute regulating business combinations. These provisions could discourage, hinder or preclude an unsolicited acquisition of the Company and could make it less likely that stockholders receive a premium for their shares as a result of any takeover attempt.

Sales Of A Substantial Number Of Shares Of Our Common Stock In The Public Market Originally Issued Through The Exercise Of Options Or Warrants Could Adversely Affect The Market Price Of Our Common Stock And May Also Adversely Affect Our Ability To Raise Additional Capital

As of December 31, 2009, options and warrants for the purchase of 1,452,576 shares of our common stock were outstanding. Historically, our common stock has been thinly traded. This low trading volume may have had a significant effect on the market price of our common stock, which may not be indicative of the market price in a more liquid market.

We Depend Highly On Certain Key Management Personnel

We believe that our future success will depend to a significant extent on the efforts and abilities of our senior management, in particular, Andrew Kersey, our President and Chief Executive Officer, and Jeffery Baird, our Chief Financial Officer. The loss of the services of Messrs. Kersey or Baird could have a material adverse effect on our business and results of operations.

We Do Not Expect To Pay Cash Dividends

We have not paid cash dividends on our common stock since inception, and at this time we do not anticipate that we will pay cash dividends in the foreseeable future.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The Company currently leases four separate operating facilities as described in further detail below.

On September 6, 2007, the Company closed the sale and leaseback of its headquarters and manufacturing facility in Branford, Connecticut (the "Property") which comprises approximately 24,000 square feet of office and manufacturing space. Net proceeds from the sale were \$2,791,529 of which \$928,872 was used to retire the related outstanding mortgage debt. The gain of \$1,346,373 realized on the sale has been deferred and will be recognized in operations against rent expense over the initial term of the lease. The lease has an initial term of ten years expiring on September 6, 2017 and contains an option for two additional five-year periods. The lease provides for an annual base rent in years one through five of \$244,800 and \$268,800 in years six through ten. The Company will recognize rent expense on a straight-line basis over the ten years. Under the lease, the Company is responsible for the costs of utilities, insurance, taxes and maintenance expenses. Further, the Company is required to maintain at least \$600,000 in cash and cash equivalents (increasing at 3% per annum) and net current assets of not less than \$3,600,000.

In addition, the Company has a right of first offer to lease any additional space or building built by the lessor on the Property, subject to certain restrictions. The Company also has the right to require the lessor to build an addition or additional building ("Expansion Premises"), subject to certain restrictions. Upon the delivery of any Expansion Premises, the term of the Lease would extend for a ten year term. The base rent for the Expansion Premises would be the greater of the then prevailing market rent or an amount equal to a return on actual costs of

construction of the greater of 250 basis points over the rate on ten year U.S. Treasury Notes, or 8%. Upon delivery of the Expansion Premises, the lessor would assume obligations under the Company's leases of its two adjacent properties, in exchange for a payment equal to three months rent and certain unamortized costs incurred in these facilities.

The Company is leasing two properties adjacent to its corporate facilities. Approximately 8,300 square feet of office and limited warehouse space is being leased under an agreement effective June 1, 2006, as amended, and expiring on May 31, 2014. Minimum annual rental expense is approximately \$80,000 excluding apportioned real estate taxes and certain utility costs. Approximately 9,600 square feet of office and warehouse space is being leased under an agreement effective July 1, 2007, as amended, and expiring June 30, 2015. Minimum annual rental expense is approximately \$85,000 excluding apportioned real estate taxes and certain common area maintenance charges.

The Company is also leasing approximately 17,500 square feet of warehouse and office space in Jacksonville, Florida under an agreement, as amended, which expires March 31, 2012. Minimum annual rental expense is approximately \$86,000 excluding apportioned real estate taxes and certain common area maintenance charges.

The Company believes that its premises meet its current and expected operating needs and are adequately insured.

Item 3. Legal Proceedings

The manufacture and sale of our products exposes us to product liability claims and product recalls, including those which may arise from misuse or malfunction of, or design flaws in, our products or use of our products with components or systems not manufactured or sold by us. Product liability claims or product recalls, regardless of their ultimate outcome, could require us to spend significant time and money in litigation or to pay significant damages. We are currently a defendant in a product liability action. We believe that our product liability insurance is sufficient to cover any damages and costs that are likely with respect to this matter. There can be no assurance however, that this will be the case with respect to this matter or any future matters. Furthermore, we may not be able to obtain insurance in the future at satisfactory rates or in adequate amounts. In addition, publicity pertaining to the misuse or malfunction of, or design flaws in, our products could impair our ability to successfully market and sell our products and could lead to product recalls.

On August 7, 2009, Somanetics Corporation ("Somanetics") filed an action against the Company in the United States District Court for the Eastern District of Michigan alleging patent infringement, false advertising, and common law unfair competition and libel related to the Company's FORE-SIGHT product line. The complaint requests injunctive relief and unspecified monetary damages, including treble damages and reasonable attorneys' fees. On October 19, 2009, the Company answered the complaint, denying all allegations against it. In addition, the Company has asserted counterclaims against Somanetics for violation of the antitrust laws and for a declaration that the patents sued upon are invalid, unenforceable, and/or have not been infringed by the Company.

In addition, we may become in the normal course of our business operations a party to other legal proceedings in addition to those described in the paragraphs above. None of these other proceedings would be expected to have a material adverse impact on our results of operations, financial condition, or cash flows.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The common stock of the Company trades on the NASDAQ Global Market, under the symbol "CASM."

The following table shows the high and low sales prices for the Company's common stock during each quarterly period for the last two years.

<u>Quarter Ended</u>	<u>High</u>	<u>Low</u>
March 31, 2008	\$ 5.54	\$ 4.05
June 30, 2008	\$ 4.30	\$ 2.81
September 30, 2008	\$ 4.21	\$ 2.72
December 31, 2008	\$ 4.00	\$ 1.66
March 31, 2009	\$ 2.18	\$ 0.90
June 30, 2009	\$ 2.23	\$ 1.15
September 30, 2009	\$ 3.90	\$ 1.16
December 31, 2009	\$ 2.12	\$ 1.50

The following table sets forth the approximate number of beneficial owners of common stock of the Company on December 31, 2009.

<u>Title of Class</u>	<u>Number of Shareholders</u>
Common stock, \$.004 par value	1,915

To date, no cash dividends have been declared on the Company's common stock. The Company does not currently intend to pay a cash dividend in the near future.

The Company did not issue any shares of common stock during the fourth quarter of 2009 that were not registered under the Securities Act. In addition, the Company did not repurchase any of its common stock during the fourth quarter of 2009.

Item 6. Selected Financial Data

<u>For Year Ended December 31,</u>	<u>2009(1)(2)</u>	<u>2008(1)</u>	<u>2007(1)</u>	<u>2006(1)</u>	<u>2005(3)</u>
(amounts in thousands, except per share amounts)					
Net Sales	\$ 34,235	\$ 40,649	\$ 38,232	\$ 35,202	\$ 26,884
Cost of Sales	<u>23,350</u>	<u>26,748</u>	<u>24,584</u>	<u>20,803</u>	<u>15,092</u>
Gross Profit	10,885	13,901	13,648	14,399	11,792
Operating Expenses:					
Research and development	2,460	\$ 2,027	\$ 2,254	\$ 2,762	\$ 1,631
Selling, general and administrative	<u>11,603</u>	<u>12,165</u>	<u>10,815</u>	<u>8,659</u>	<u>7,438</u>
Total operating expenses	14,063	14,192	13,069	11,421	9,069
Goodwill impairment	2,156	-	-	-	-
Operating (loss) income	(5,334)	(291)	579	2,978	2,723
(Loss) income before income taxes	(5,558)	(564)	304	2,730	2,556
Net (loss) income	(5,790)	(388)	306	1,747	1,815
Net (loss) income per diluted					
common share	\$ (0.51)	\$ (0.04)	\$ 0.03	\$ 0.14	\$ 0.15
Diluted shares outstanding	11,261	11,032	12,212	12,147	11,729
At Year End:					
Working Capital	\$ 7,907	\$ 10,819	\$ 10,388	\$ 9,096	\$ 7,482
Long-term debt, less current portion	1,056	1,708	2,323	3,807	4,416
Total Assets	18,250	23,685	23,888	21,443	17,918
Stockholders' equity	\$ 9,349	\$ 14,900	\$ 13,751	\$ 12,625	\$ 9,117

- (1) Operating income (loss) reduced by \$325, \$410, \$303 and \$390 for 2009, 2008, 2007 and 2006, respectively, from stock compensation expense. The Company adopted FAS 123R – Share-Based Payment, as of January 1, 2006.
- (2) 2009 operating loss affected by \$2,156 of goodwill impairment charges. Net (loss) income affected by deferred income tax asset valuation allowance of \$1,449.
- (3) 2005 operating income includes \$401 credit from curtailment gain of post-retirement benefit plan. 2005 reflects the acquisition of Statcorp, Inc. on May 15, 2005.

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

Certain statements included in this report, including without limitation statements in the Management's Discussion and Analysis of Financial Condition and Results of Operations, which are not historical facts, are "forward looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements represent the Company's current expectations regarding future events. The Company cautions that such statements are qualified by important factors that could cause actual results to differ materially from expected results which may be contained in the forward-looking statements. All forward-looking statements involve risks and uncertainties, including, but not limited to, the following: potential liquidity constraints; price and product competition; rapid technological changes; dependence on new product development; failure to introduce new products effectively or on a timely basis; the mix of products sold; supply and prices of raw materials and products; customer demand for the Company's products; regulatory actions; changes in reimbursement levels from third-party payors; product liability or other litigation claims; changes in economic conditions that adversely affect the level of demand for the Company's products; changes in foreign exchange markets; changes in financial markets; changes in the competitive environment; and other risks described in Item 1A of this filing.

Year Ended December 31, 2009 Compared to Year Ended December 31, 2008

The Company recorded a net loss of \$5,790,000 for 2009 or (\$0.51) per basic and diluted common share compared to a net loss of \$388,000 or (\$0.04) per basic and diluted common share for 2008. The pre-tax loss for 2009 of \$5,558,000 includes a goodwill impairment charge of \$2,156,000, legal expenses related to the Somanetics litigation of \$345,000 and severance charges of approximately \$401,000 of which \$346,000 related to personnel reductions initiated during the fourth quarter of 2009. The Company also recorded a \$1,449,000 charge pertaining to the establishment of a deferred income tax asset valuation allowance. Pre-tax losses for 2009 and 2008 were also affected by \$325,000 and \$410,000, respectively, of stock compensation expense.

The operating loss for 2009 before the goodwill impairment charge was \$3,178,000 compared to an operating loss of \$291,000 for 2008. Reductions in sales volumes of \$6,414,000 from 2008 levels were primarily responsible for the increased operating loss for 2009 over the prior year. Revenues for 2009 were significantly impacted by the worldwide economic crisis and reductions in sales to certain key customers. Gross profit levels declined from 34.2% in 2008 to 31.8% in 2009 reflecting increased inventory related charges over a reduced revenue base. Non-FORE-SIGHT related operating expense reductions were largely offset by increases in litigation and severance costs referred to above and by increased FORE-SIGHT related research and development and sales and marketing spending of approximately \$931,000.

In response to difficult economic conditions and the decline in the Company's revenue compared to 2008, management initiated reductions in personnel during both May and November 2009. Those reductions were expected to generate approximately \$2,300,000 in annual savings in fiscal year 2010. Further, the Company reduced its focus on certain products that were not considered central to the Company's strategic objectives and did not contribute adequate gross margins. The infant sleep apnea product line was phased out during 2009 and the products manufactured by Analogic Corporation and resold by the Company are to be phased out by July 2010. Additional reductions in low gross margin products sold within the blood pressure cuff product lines have also occurred which are expected to improve overall gross profits during the 2010 fiscal year.

The following table provides comparative results of net sales by product and geographic category:

(\$000's)	Year Ended December 31, 2009	Year Ended December 31, 2008	Increase/ (Decrease)
Bedside Monitoring	\$ 10,954	\$ 15,889	\$ (4,935)
Critical Care Monitoring	4,078	2,258	1,820
Blood Pressure Measurement Technology	5,836	7,769	(1,933)
Supplies and Service	<u>13,367</u>	<u>14,733</u>	<u>(1,366)</u>
	<u>\$ 34,235</u>	<u>\$ 40,649</u>	<u>\$ (6,414)</u>
Domestic Sales	23,637	30,032	(6,395)
International Sales	<u>10,598</u>	<u>10,617</u>	<u>(19)</u>
	<u>\$ 34,235</u>	<u>\$ 40,649</u>	<u>\$ (6,414)</u>

Net sales for 2009 were significantly impacted by the worldwide economic crisis, decreasing 16% or \$6,414,000 to \$34,235,000 from \$40,649,000 for 2008. Bedside monitoring sales decreased \$4,935,000 or 31% from 2008 primarily due to lower sales levels of vital signs monitors and accessories sold to the Veterans Administration, reduced sales of co-branded Analogic products and lower sales of veterinary products sold under a private label agreement. Critical care monitoring sales increased \$1,820,000 or 81% to \$4,078,000 and represent the Company's FORE-SIGHT cerebral oximetry technology launched during mid-2007. Sensor related sales account for approximately 67% of critical care sales for 2009. In certain U.S. markets, the Company routinely places the monitor and retains ownership of the device in exchange for commitments to purchase disposable sensors. During 2009, the Company placed or sold approximately 87 monitors with customers bringing the installed base of FORE-SIGHT monitors worldwide to 238 as of the end of 2009. Approximately 48 units were placed or sold during the fourth quarter of 2009. Blood pressure measurement technology sales decreased \$1,933,000 or 25%. Sales to nearly all of the Company's OEM customers decreased from 2008 reflecting softer worldwide demand for medical equipment. OEM sales to Medtronic, the Company's largest single customer, accounted for \$1,081,000 of the overall decrease in blood pressure measurement technology sales. Sales of supplies and service decreased \$1,366,000 or 9% from 2008 sales. Blood pressure and infusor cuffs accounted for approximately 69% of sales in this category. The decrease in sales is primarily due to reductions in sales of low gross margin cuff products to one customer in this market.

Sales to the U.S. market accounted for \$23,637,000 or 69% of the total net sales reported for 2009, a decrease of \$6,395,000 or 21% from the \$30,032,000 reported for 2008. International sales of the Company's products were basically flat, decreasing only \$19,000 to \$10,598,000 or 31% of total net sales, from sales of \$10,617,000 reported for 2008.

Cost of sales as a percentage of net sales increased to 68.2% for 2009 compared to 65.8% of net sales for 2008. The increase in cost of sales as a percentage of sales for 2009 was primarily related to inventory adjustments which were partially related to products being phased out by the Company and overhead costs previously capitalized to inventory which are being charged to cost of sales commensurate with reductions in inventory levels.

R&D expenses increased \$432,000 or 21% to \$2,460,000 for 2009 from \$2,028,000 for 2008. R&D expenses are reported net of reimbursements received from the National Institutes of Health ("NIH") pertaining to the Company's development of its Near-Infrared Spectroscopy ("NIRS") technology. Amounts reimbursed from the NIH, including accruals, for 2009 and 2008 were \$737,000 and \$582,000, respectively. During September 2007 the Company was awarded a three year grant totaling approximately \$2,800,000 to support its NIRS research. As of December 31, 2009, a maximum of approximately \$1,000,000 remains available under the grant. R&D expenses before NIH reimbursement approximated 9.3% and 6.4%, respectively, of 2009 and 2008 revenues.

Selling, general and administrative ("S,G&A") expenses decreased \$562,000 or 4.6% to \$11,603,000 or 33.9% of net sales for 2009 from \$12,165,000 or 29.9% of net sales for 2008. Sales and marketing expenses in 2009 pertaining to the Company's Fore-Sight cerebral oximeter were approximately \$3,565,000 and increased

approximately \$471,000 or 15% over the \$3,094,000 incurred for 2008. Salaries, commissions and related benefits, travel expenses and consulting were primarily responsible for the increase and were partially offset by reductions in manufacturers' representative commissions and advertising and promotional costs. General and administrative ("G&A") expenses decreased by \$401,000 or 10.2% primarily as a result of decreases in salaries, partially related to headcount reductions, and related benefits and general insurance costs. G&A expenses in 2009 included \$345,000 of legal costs related to the Somanetics litigation.

S, G&A expenses were affected by severance costs of approximately \$385,000 incurred during 2009 as a result of reductions in staff initiated during May and November. The reductions in personnel are expected to generate S,G&A savings of approximately \$1,600,000 for 2010.

During the fourth quarter of 2009 the Company determined that the goodwill of \$3,379,021 associated with the May 2005 acquisition of Statcorp, Inc. was impaired. The Company assesses its goodwill for impairment annually in the fourth quarter or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Accordingly, the Company recognized an impairment charge of \$2,155,785 during the fourth quarter of 2009.

Net interest expense decreased \$48,000 to \$224,000 for 2009 from \$272,000 for 2008 as a result of reduced balances on the Company's long-term debt.

The income tax expense for 2009 was \$232,000 compared to a benefit of \$176,000 for 2008. The income tax expense for 2009 results primarily from the non-deductibility of the goodwill impairment charge of \$2,156,000 and the recording of a deferred income tax asset valuation allowance of \$1,449,000 which were partially offset by pre-tax operating losses. The benefit for 2008 is related to taxable losses and federal R&D related tax credits.

Year Ended December 31, 2008 Compared to Year Ended December 31, 2007

The Company recorded a net loss of \$388,000 for 2008 or (\$0.04) per basic and diluted common share compared to net income of \$306,000 or \$0.03 per diluted common share for 2007. Pre-tax (loss) income for 2008 and 2007 were affected by \$410,000 and \$303,000, respectively, of stock compensation expense.

The operating loss for 2008 was \$291,000 or 0.7% of net sales compared to operating income of \$579,000 or 1.5% of net sales for 2007. Several key factors contributed to the decrease in operating income during 2008. Cost of sales as a percentage of sales increased to 65.8% from 64.3% for 2007 primarily as a result of higher costs in the first quarter of 2008. Lower than expected sales during that period combined with fixed manufacturing costs, resulted in a 70.1% cost of sales percentage during the first quarter. Operating expenses for 2008 increased \$1,124,000 or 9% to reach \$14,193,000 or 34.9% of net sales from \$13,069,000 or 34.2% of net sales for 2007. Sales and marketing expenses related to the cerebral oximetry market reached \$3,094,000 in 2008, an increase of \$1,355,000 over 2007 spending levels.

The following table provides comparative results of net sales by product and geographic category:

(\$000's)	Year Ended December 31, 2008	Year Ended December 31, 2007	Increase/ (Decrease)
Bedside Monitoring	\$ 15,889	\$ 18,640	\$ (2,751)
Critical Care Monitoring	2,258	315	1,943
Blood Pressure Measurement Technology	7,769	5,825	1,944
Supplies and Service	<u>14,733</u>	<u>13,452</u>	<u>1,281</u>
	<u>\$ 40,649</u>	<u>\$ 38,232</u>	<u>\$ 2,417</u>
Domestic Sales	30,032	\$ 29,601	431
International Sales	<u>10,617</u>	<u>8,631</u>	<u>1,986</u>
	<u>\$ 40,649</u>	<u>\$ 38,232</u>	<u>\$ 2,417</u>

Net sales for 2008 increased 6% or \$2,417,000 to \$40,649,000 from \$38,232,000 for 2007. Bedside monitoring sales decreased \$2,751,000 or 15% from 2007 primarily due to lower sales levels of vital signs monitors and accessories sold to the Veterans Administration and lower sales of veterinary products sold under a private label agreement. Approximately \$311,000 of the veterinary sales are classified as of 2008 as blood pressure measurement technology sales. Increased sales of Analogic products marketed by the Company since May 2007 partially offset reductions in vital signs products sales. Critical care monitoring sales increased \$1,943,000 to \$2,258,000 and represent the Company's Fore-Sight cerebral oximetry technology launched during mid-2007. Net sales in this category are primarily sensor related (72% for 2008). In certain U.S. markets, the Company routinely places the monitor and retains ownership of the device in exchange for commitments to purchase disposable sensors. During 2008, the Company placed or sold approximately 116 monitors with customers bringing the installed base of Fore-Sight monitors worldwide to 151 as of the end of 2008. Blood pressure measurement technology sales increased \$1,944,000 or 33% due to a rebound of sales to a key customer, Medtronic. 2007 sales to Medtronic were affected by a voluntary suspension of U.S. product shipments from its Physio-Control division announced during January 2007. Sales of supplies and service increased \$1,281,000 or 10% over 2007 sales and are primarily comprised of sales of blood pressure cuffs accounting for approximately 71% of sales in this category. Sales to the U.S. market accounted for \$30,032,000 or 74% of the total net sales reported for 2008, an increase of \$431,000 or 1% over the \$29,601,000 reported for 2007. International sales accounted for \$10,617,000 or 26% of total net sales, an increase of \$1,986,000 or 23% over 2007 sales levels. The growth in international sales was led by sales of Analogic products and blood pressure cuff sales. Cost of sales as a percentage of net sales increased to 65.8% for 2008 compared to 64.3% of net sales for 2007. The increase in cost of sales as a percentage of sales for 2008 was primarily related to the first quarter of 2008 where lower than expected sales combined with fixed manufacturing costs.

R&D expenses decreased \$226,000 or 10% to \$2,028,000 for 2008 from \$2,254,000 for 2007. R&D expenses were reported net of reimbursements received from the National Institutes of Health ("NIH") pertaining to the Company's development of its Near-Infrared Spectroscopy ("NIRS") technology. Amounts reimbursed from the NIH, including accruals, for 2008 and 2007 were \$582,000 and \$480,000, respectively. Increased reimbursements for 2008 reflect the fact that during September 2007 the Company was awarded a three year grant totaling approximately \$2,800,000 to support its NIRS research. R&D expenses before NIH reimbursement approximated 6.4% and 7.2%, respectively, of 2008 and 2007 revenues.

Selling, general and administrative ("S,G&A") expenses increased \$1,350,000 or 12.5% to \$12,165,000 or 29.9% of net sales for 2008 from \$10,815,000 or 28.3% of net sales for 2007. Sales and marketing expenses in 2008 pertaining to the Company's Fore-Sight cerebral oximeter were approximately \$3,094,000 and accounted for 100% of the overall increase in S,G&A spending. Increased manufacturers representative commission expenses from increased sales, salaries and related benefits from expanded direct sales personnel costs, travel and entertainment and depreciation expenses were primarily responsible for the increase in the cerebral oximetry related expenses.

General and administrative ("G&A") expenses increased by \$219,000 or 5.9% as a result of increases in salaries and related benefits and legal and accounting expenses which were partially offset by reductions in Sarbanes Oxley section 404 compliance costs, investor relations fees and company-wide incentive payouts. Together, the G&A expenses were offset by reductions in non-cerebral oximetry related marketing costs and decreased international sales support expenses.

Net interest expense decreased \$3,000 to \$272,000 for 2008 from \$275,000 for 2007 as a result of reduced balances on the Company's long-term debt. Higher average balances on the line-of-credit facility for 2008 were offset by reduced costs of borrowed funds.

The income tax benefit for 2008 was \$176,000 compared to a benefit of \$3,000 for 2007. The benefit for 2008 is related to taxable losses and federal R&D related tax credits. The benefit for 2007 is primarily related to an exchange of \$155,000 of state tax carry-forwards for reduced cash receipts payable to the Company partially offset by certain non-deductible expenses including stock option compensation and entertainment costs.

Financial Condition, Liquidity and Capital Resources

The Company's cash and cash equivalents were \$1,187,000 at December 31, 2009 compared to \$1,083,000 at December 31, 2008. Working capital decreased \$2,913,000 to \$7,907,000 at December 31, 2009 from \$10,819,000 at December 31, 2008. The Company's current ratio decreased to 2.21 to 1 from 2.88 to 1.

Net cash provided by operating activities for 2009 was \$480,000 compared to cash provided of \$1,660,000 for the prior year. Operating losses before depreciation and amortization and goodwill impairment were offset by reductions in inventories and the reduction in other receivables during 2009. Cash provided by operations during 2008 was primarily due to decreases in accounts receivable and inventories which were partially offset by decreases in accounts payable and accrued expenses and the increase in an other receivable related to the transfer of raw material inventories to one of the Company's primary vendors under a turn-key agreement initiated during the fourth quarter of 2008.

Net cash used by investing activities was \$402,000 for 2009 compared to cash used of \$1,466,000 for 2008. The Company incurred \$288,000 of capital expenditures during 2009 compared to \$1,413,000 for 2008. Equipment purchases during 2008 were driven by FORE-SIGHT cerebral oximeter demonstration equipment and clinical research units, information technology, manufacturing equipment and furniture and fixtures and leasehold improvements pertaining to the Company's expansion of its adjacent facilities. During 2010, the Company expects to increase its expenditures for FORE-SIGHT cerebral oximeter equipment placed at customer locations and clinical research equipment over amounts spent for 2009. The Company also incurred \$114,000 of expenditures during 2009 to purchase intangible assets, primarily patents, trademarks and deferred finance charges.

Net cash provided by financing activities was \$26,000 for 2009 compared to \$222,000 for 2008. The Company repaid \$614,000 of long-term debt during 2009 while increasing its borrowings under its line-of-credit agreement by \$676,000 as of December 31, 2009. Cash provided by financing activities for 2008 was generated by a private placement of 333,333 shares of its common stock consummated during May of that year for an aggregate sum of \$1,000,000.

The Company currently leases four facilities and certain equipment under non-cancelable operating leases. The following table sets forth a summary of the Company's cash commitments under contractual obligations as of December 31, 2009.

Contractual Obligations	Total	Less than One Year	1 – 3 Years	3 - 5 Years	More Than Five Years
Long-term debt	\$ 1,708,755	\$ 652,482	\$ 1,056,273	\$ -	\$ -
Note payable	50,678	50,678	-	-	-
Operating leases	3,071,265	541,003	913,054	851,604	765,604
	<u>\$ 4,830,698</u>	<u>\$ 1,244,163</u>	<u>\$ 1,969,327</u>	<u>\$ 851,604</u>	<u>\$ 765,604</u>

On February 11, 2008, the Company amended and restated its existing line of credit with NewAlliance Bank (the "Bank"). The Company entered into a new Commercial Loan Agreement (the "Loan Agreement") and related Commercial Revolving Promissory Note (the "Note") which originally provided for borrowings on a revolving basis, at the Bank's discretion, in an amount up to \$10,000,000. Loans in excess of \$2,000,000 up to \$10,000,000 could be made only if the maximum principal amount outstanding did not exceed a borrowing base equal to the sum of (i) 75% of eligible receivables (as defined in the Loan Agreement) and (ii) the lesser of \$2,500,000 or 30% of eligible inventory (as defined in the Loan Agreement.) Borrowings under the Loan Agreement and the Note are secured by a first priority lien in all the business assets of the Company pursuant to a Security Agreement (the "Security Agreement"). The Loan Agreement contains customary non-financial covenants and financial covenants consisting of a debt service coverage ratio and a debt to tangible net worth ratio.

On December 31, 2008, the Company amended the line of credit pursuant to a Debt Modification Agreement (the "First Modification"). The First Modification amended the Loan Agreement and related Note and extended the

maturity date of the Note to July 1, 2010 and also amended the interest rate for the line of credit to the Bank's base rate with a minimum interest rate of 3.25% per annum. The line-of-credit was further amended by the Second Modification Agreement (the "Second Modification") dated April 3, 2009 and effective March 31, 2009 which reduced the maximum availability under the line of credit from \$10,000,000 to \$5,000,000 and also amended the debt service coverage ratio from a quarterly test to an annual test for the twelve months ended December 31, 2009 and revised the minimum ratio from 1.5 to 1 to 1.0 to 1. As of the first quarter of 2010 and thereafter, the ratio was scheduled to return to 1.5 to 1 resumed on a quarterly basis.

On March 11, 2010, the line-of-credit was amended by the Third Modification Agreement (the "Third Modification"). The Third Modification amended the Loan Agreement and the Note each as previously amended. Under the Third Modification, the maturity date was extended to April 1, 2011 and the interest rate for the revolving loans under the Loan Agreement was increased from the Bank's Base Rate (as defined in the Second Modification) plus 1.0% with a minimum of 4.0% per annum to the Bank's Base Rate (as defined in the Third Modification) plus 2.0% with a minimum interest rate of 5.0% per annum. The interest rate effective upon execution of the Third Modification was 5.25% per annum. Additionally, the Third Modification amended the existing debt service coverage ratio covenant from 1.5 to 1.0 to 1.25 to 1.0, tested beginning March 31, 2010 and quarterly thereafter, measured on a year-to-date basis. In connection with the Third Modification, the Bank waived the testing of the debt service coverage ratio covenant as of December 31, 2009.

The Company also amended its existing term note with the Bank to conform the debt service coverage ratio covenant to the ratio contained in the Third Modification.

As of March 11, 2010, the outstanding balance under the line of credit was \$2,129,000 and the availability was approximately \$1,442,000. In addition, the Company held approximately \$1,000,000 in cash and cash equivalents as of March 11, 2010.

During 2009, management initiated reductions in its overhead structure in response to lower revenue levels experienced in that year. After careful review of the profit contributions of certain product lines, management phased out those products in order to improve future profitability, conserve capital and increase attention toward more strategic opportunities. Despite a difficult 2009 calendar year, the Company maintained its bank debt levels at December 31, 2009 nearly commensurate with those at December 31, 2008 through focused asset management.

Inventory reductions were a key contributor to cash flows during 2009 with inventory declining \$1,980,000 from year-end 2008 levels. Capital expenditures were modest at \$110,000 during 2009 excluding Fore-Sight equipment required for customer sites. Accounts receivable were collected timely with few exceptions. Further, the Company is anticipating proceeds from its federal net operating loss carry back of \$871,000 by mid-2010.

The Company believes that its sources of funds consisting of cash and cash equivalents, cash flow from operations and funds available from the revolving credit facility will be sufficient to meet its operating and capital requirements for 2010. The Company expects to reduce its overall bank debt levels as of the end of 2010 compared to bank debt outstanding as of December 31, 2009 as a result of improved cash from operations. However, future cash flows may be impacted by a number of factors, including changing market conditions, failure to meet financial covenants under our current or any future loan agreement, or discretionary actions of our senior lender. Changes in payment terms to one or more major suppliers could also have a material adverse effect on our results of operations and future liquidity. We believe that our current levels of working capital and available debt financing are insufficient to fund major growth initiatives, such as significant increases in our sales and marketing personnel, or material acquisitions. Any major growth initiatives would require us to seek other sources or forms of debt or equity capital. There can be no assurance that we will be successful in securing such funding for major initiatives.

The Company's results of operations were not affected by inflation during 2009.

Off-Balance Sheet Arrangements

The Company has no off-balance sheet arrangements other than operating leases for office and warehouse space.

Critical Accounting Policies

The Company's financial statements have been prepared in accordance with generally accepted accounting principles in the United States. In preparing the financial statements, the Company is required to make estimation judgments. Such judgments are based upon historical experience and certain assumptions that are believed to be reasonable in the particular circumstances. Those judgments affect both balance sheet and income statement accounts and disclosures. The Company evaluates its assumptions on an ongoing basis by comparing actual results with its estimates. Actual results may differ from the original estimates. The following accounting policies are those that the Company believes to be most critical to the preparation of its financial statements.

Inventory Valuation—The Company's inventories are stated at the lower of cost or market. The Company provides allowances on inventories for any material that has become obsolete or may become unsalable based on estimates of future demand and the sale price in the market. Judgments with respect to salability and usage of inventories, estimated market value, and recoverability upon sale are complex and subjective. Such assumptions are reviewed periodically and adjustments are made, as necessary, to reflect changed conditions. There were no significant write-offs for any period presented.

Deferred Income Tax Assets—The Company has recorded deferred income tax assets for the estimated benefit of future tax deductions on inventories, property and equipment and other accruals and various tax credits. Based on recent cumulative pre-tax losses and the Company's estimates of future taxable income, management has established a deferred tax asset valuation allowance.

Goodwill - The Company assesses goodwill for impairment annually in the fourth quarter or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. All of the Company's goodwill is attributable to the Statcorp business unit. The Company uses adjusted quoted market prices and other observable inputs to estimate the fair value of the Statcorp business unit when conducting its impairment analysis.

Accrued Warranty Costs—The Company warrants its products for up to three years and records the estimated cost of such product warranties at the time the sale is recorded. Estimated warranty costs are based upon actual past experience of product returns and the related estimated cost of labor and material to make the necessary repairs. Warranty costs have not been material to operating results over the past several years. However, if actual future product return rates or the actual costs of material and labor differ from the estimates, adjustments to the accrued warranty liability would be made.

Recent Accounting Pronouncements

Recent accounting pronouncements potentially affecting the Company's future financial statements are described under the caption, "New accounting pronouncements" in Note 2 – Summary of Significant Accounting Policies. In June 2009, the Financial Accounting Standards Board ("FASB") issued FASB ASC 105, Generally Accepted Accounting Principles, which establishes the FASB Accounting Standards Codification as the sole source of authoritative generally accepted accounting principles. Pursuant to the provisions of FASB ASC 105, the Company has updated references to GAAP in its financial statements issued for the period ended on or after September 30, 2009. The adoption of FASB ASC 105 did not impact the Company's financial position or results of operations.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

The Company has certain exposures to market risk related to changes in interest rates. The Company has an outstanding line-of-credit agreement, under which there were borrowings of \$2,670,000 at December 31, 2009. The line-of-credit agreement, amended effective March 11, 2010, bears interest at variable rates based on prime rate indices. The Company holds no derivative securities for trading purposes and is not subject in any material respect to currency or other commodity risk.

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

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Financial Statements

Consolidated Balance Sheets as of December 31, 2009 and 2008

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Consolidated Statements of Operations for the Years Ended December 31, 2009, 2008 and 2007

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Consolidated Statements of Changes in Shareholders' Equity for the Years Ended
December 31, 2009, 2008 and 2007

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Consolidated Statements of Cash Flows for the Years Ended December 31, 2009, 2008 and 2007

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Notes to Consolidated Financial Statements

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Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors
CAS Medical Systems, Inc:

We have audited the accompanying consolidated balance sheets of CAS Medical Systems, Inc. (the “Company”) as of December 31, 2009 and 2008, and the related consolidated statements of operations, changes in shareholders’ equity, and cash flows for each of the years in the three-year period ended December 31, 2009. The Company’s 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of the Company’s internal control over financial reporting. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2009 and 2008, and the results of its operations and its cash flows for the each of the years in the three-year period ended December 31, 2009 in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 2, the Company changed its accounting for uncertain income tax positions as required by accounting principles generally accepted in the United States of America, effective January 1, 2007.

/s/ UHY LLP

New Haven, Connecticut
March 29, 2010

CAS MEDICAL SYSTEMS, INC.
Consolidated Balance Sheets
As of December 31, 2009 and 2008

ASSETS	<u>2009</u>	<u>2008</u>
CURRENT ASSETS:		
Cash and cash equivalents	\$ 1,186,779	\$ 1,082,619
Accounts receivable, less allowance of \$175,000 in 2009 and \$150,000 in 2008	4,192,730	3,681,355
Recoverable income taxes	871,206	101,185
Other receivable	-	715,769
Inventories	7,806,912	9,786,538
Deferred income taxes (Note 9)	-	791,493
Other current assets	<u>383,152</u>	<u>411,938</u>
Total current assets	14,440,779	16,570,897
PROPERTY AND EQUIPMENT:		
Leasehold improvements	303,710	281,612
Equipment at customers	1,219,418	1,132,422
Machinery and equipment	<u>5,414,368</u>	<u>5,326,735</u>
	6,937,496	6,740,769
Accumulated depreciation and amortization	<u>(4,976,819)</u>	<u>(4,013,900)</u>
Property and equipment, net	1,960,677	2,726,869
INTANGIBLE AND OTHER ASSETS, net	625,761	757,378
GOODWILL	1,223,236	3,379,021
DEFERRED INCOME TAXES (Note 9)	<u>-</u>	<u>250,370</u>
Total assets	<u>\$18,250,453</u>	<u>\$23,684,535</u>
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Current portion of long-term debt	\$ 652,482	\$ 614,067
Note payable	50,678	-
Line-of-credit	2,669,657	1,994,008
Accounts payable	1,848,185	2,307,675
Accrued expenses	<u>1,313,164</u>	<u>835,868</u>
Total current liabilities	<u>6,534,166</u>	<u>5,751,618</u>
LONG-TERM DEBT, less current portion	1,056,273	1,708,493
DEFERRED GAIN ON SALE AND LEASEBACK OF PROPERTY	1,034,064	1,168,701
INCOME TAXES PAYABLE	277,280	155,875
COMMITMENTS (Note 12)	-	-
SHAREHOLDERS' EQUITY:		
Series A cumulative convertible preferred stock, \$.001 par value per share, 1,000,000 shares authorized, no shares issued or outstanding	-	-
Common stock, \$.004 par value per share, 40,000,000 shares authorized, 11,610,075 and 11,419,535 shares issued as of December 31, 2009 and 2008, respectively, including shares held in treasury	46,440	45,675
Common stock held in treasury, at cost – 86,000 shares	(101,480)	(101,480)
Additional paid-in capital	7,661,061	7,423,340
Retained earnings	<u>1,742,649</u>	<u>7,532,313</u>
Total shareholders' equity	<u>9,348,670</u>	<u>14,899,848</u>
Total liabilities and shareholders' equity	<u>\$18,250,453</u>	<u>\$23,684,535</u>

See accompanying notes.

CAS MEDICAL SYSTEMS, INC.

Consolidated Statements of Operations
For the Years Ended December 31, 2009, 2008 and 2007

	<u>2009</u>	<u>2008</u>	<u>2007</u>
NET SALES	\$ 34,235,218	\$ 40,649,057	\$ 38,232,405
COST OF SALES	<u>23,350,636</u>	<u>26,747,590</u>	<u>24,584,807</u>
Gross profit	10,884,582	13,901,467	13,647,598
OPERATING EXPENSES:			
Research and development	2,459,508	2,027,747	2,253,512
Selling, general and administrative	<u>11,602,928</u>	<u>12,164,974</u>	<u>10,815,248</u>
	<u>14,062,436</u>	<u>14,192,721</u>	<u>13,068,760</u>
Goodwill impairment	<u>2,155,785</u>	-	-
OPERATING (LOSS) INCOME	(5,333,639)	(291,254)	578,838
Interest expense, net	<u>224,215</u>	<u>272,471</u>	<u>274,977</u>
(LOSS) INCOME BEFORE INCOME TAXES	(5,557,854)	(563,725)	303,861
Income tax expense (benefit)	<u>231,810</u>	<u>(175,731)</u>	<u>(2,599)</u>
NET (LOSS) INCOME	<u>\$ (5,789,664)</u>	<u>\$ (387,994)</u>	<u>\$ 306,460</u>
NET (LOSS) INCOME PER COMMON SHARE:			
Basic	<u>\$ (0.51)</u>	<u>\$ (0.04)</u>	<u>\$ 0.03</u>
Diluted	<u>\$ (0.51)</u>	<u>\$ (0.04)</u>	<u>\$ 0.03</u>
WEIGHTED AVERAGE NUMBER OF COMMON SHARES OUTSTANDING:			
Basic	<u>11,260,553</u>	<u>11,031,855</u>	<u>10,696,217</u>
Diluted	<u>11,260,553</u>	<u>11,031,855</u>	<u>12,211,694</u>

See accompanying notes.

CAS MEDICAL SYSTEMS, INC.

Consolidated Statements of Changes in Shareholders' Equity
For the Years Ended December 31, 2009, 2008 and 2007

	Common Stock				Paid-in Capital	Retained Earnings	Total
	Issued Shares	Amount	Held in Treasury Shares	Amount			
BALANCE, December 31, 2006	10,679,307	\$ 42,717	86,000	(\$101,480)	\$ 4,935,538	\$ 7,748,222	\$ 12,624,997
Change in accounting for uncertain income tax positions						(134,375)	(134,375)
Net income						306,460	306,460
Common stock issued upon exercise of stock options and warrants	192,824	771			116,391		117,162
Common stock issued under stock purchase plan	21,654	87			114,543		114,630
Tax benefit from exercise of warrants					419,399		419,399
Restricted stock issued under equity incentive plans	91,000	-			-		-
Stock compensation					<u>303.136</u>		<u>303.136</u>
BALANCE, December 31, 2007	10,984,785	43,575	86,000	(101,480)	5,889,007	7,920,307	13,751,409
Net loss						(387,994)	(387,994)
Common stock issued upon exercise of stock options and warrants	29,300	118			40,847		40,965
Common stock issued under stock purchase plan	26,417	106			99,690		99,796
Private placement	333,333	1,333			998,667		1,000,000
Tax benefit from exercise of warrants					(14,730)		(14,730)
Restricted stock issued under equity incentive plans, net of cancellations	45,700	543			(543)		-
Stock compensation					<u>410.402</u>		<u>410.402</u>
BALANCE, December 31, 2008	11,419,535	45,675	86,000	(101,480)	7,423,340	7,532,313	14,899,848
Net loss						(5,789,664)	(5,789,664)
Common stock issued upon exercise of stock options	24,700	99			23,542		23,641
Common stock issued under stock purchase plan	37,813	151			60,581		60,732
Restricted stock issued under equity incentive plans, net of cancellations	128,027	515			(515)		-
Deferred income taxes regarding restricted stock					(170,757)		(170,757)
Stock compensation					<u>324.870</u>		<u>324.870</u>
BALANCE, December 31, 2009	<u>11,610,075</u>	<u>\$ 46,440</u>	<u>86,000</u>	<u>(\$101,480)</u>	<u>\$ 7,661,061</u>	<u>\$ 1,742,649</u>	<u>\$ 9,348,670</u>

See accompanying notes.

Consolidated Statements of Cash Flows
For the Years Ended December 31, 2009, 2008 and 2007

	2009	2008	2007
OPERATING ACTIVITIES:	\$ (5,789,664)	\$ (387,994)	\$ 306,460
Net (loss) income			
Adjustments to reconcile net (loss) income to net cash provided (used) by operating activities:			
Depreciation and amortization	1,189,114	1,169,335	816,286
Deferred income taxes	1,041,863	373	(537,167)
Provision for doubtful accounts	63,689	25,350	50,000
Impairment of assets	2,266,238	-	-
Stock compensation	324,870	410,402	303,136
Amortization of gain on sale and leaseback	(134,637)	(134,637)	(43,035)
Changes in operating assets and liabilities:			
Accounts receivable	(575,064)	1,240,595	(90,997)
Other receivable	715,769	(715,769)	-
Recoverable income taxes	(770,021)	129,273	90,485
Inventories	1,979,626	234,580	(3,212,925)
Other current assets	28,786	2,266	(6,033)
Accounts payable and accrued expenses	17,806	(324,071)	(865,377)
Income taxes payable	121,405	10,750	10,750
Net cash provided (used) by operating activities	<u>479,780</u>	<u>1,660,453</u>	<u>(3,178,417)</u>
INVESTING ACTIVITIES:			
Purchases of intangible assets	(114,116)	(53,241)	(479,543)
Proceeds from sale of property	-	-	2,791,529
Purchases of property and equipment	<u>(287,642)</u>	<u>(1,413,014)</u>	<u>(1,188,030)</u>
Net cash (used) provided by investing activities	(401,758)	(1,466,255)	1,123,956
FINANCING ACTIVITIES:			
Borrowings under notes payable	228,052	298,704	410,639
Repayments of notes payable	(177,374)	(370,241)	(408,343)
Repayments (borrowings) under line-of-credit, net	675,649	(255,341)	2,249,349
Repayments of long-term debt	(613,805)	(577,454)	(1,516,188)
Income tax benefit (reversal) related to equity instruments	(170,757)	(14,730)	419,399
Proceeds from issuance of common stock	<u>84,373</u>	<u>1,140,761</u>	<u>231,792</u>
Net cash provided by financing activities	<u>26,138</u>	<u>221,699</u>	<u>1,386,648</u>
Net change in cash and cash equivalents	104,160	415,897	(667,813)
Cash and cash equivalents, beginning of year	<u>1,082,619</u>	<u>666,722</u>	<u>1,334,535</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 1,186,779</u>	<u>\$ 1,082,619</u>	<u>\$ 666,722</u>
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:			
Cash paid during the year for interest	\$ 224,059	\$ 282,056	\$ 263,732
Cash paid (collected) during the year for income taxes, net	\$ 9,318	\$ (301,398)	\$ 13,934

See accompanying notes.

CAS MEDICAL SYSTEMS, INC.

Notes to Consolidated Financial Statements

(1) THE COMPANY

CAS Medical Systems, Inc. (“CASMED”) and its wholly-owned subsidiary, Statcorp, Inc. (“Statcorp”) operate as one reportable business segment. Together, CASMED and Statcorp (the “Company”) develop, manufacture and distribute diagnostic equipment and medical products for use in the healthcare and medical industry. These products are sold by the Company through its own sales force, via distributors and manufacturers representatives under contract, and pursuant to original equipment manufacturer (“OEM”) agreements both internationally and in the United States. The Company’s operations and manufacturing facilities are located in the United States. During 2009 and 2008, one customer accounted for approximately 11% and 12%, respectively, of net sales. No customer accounted for more than 10% of net sales during 2007. The Company generated international sales of approximately \$10.6 million in both 2009 and 2008 and \$8.6 million in 2007. In the normal course of business, the Company grants credit to its customers and does not require collateral. Credit losses are provided for in the period the related sales are recognized based on experience and an evaluation of the likelihood of collection. Credit losses have been within management’s expectations.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**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 sales and expenses during the reporting period. Estimates that are particularly sensitive to change in the near-term are the inventory valuation allowances, capitalized software development costs, allowance for doubtful accounts and warranty accrual. Actual results could differ from those estimates.

Principles of consolidation

The consolidated financial statements include the accounts of CASMED and its wholly-owned subsidiary. All intercompany accounts and transactions are eliminated in consolidation.

Cash and cash equivalents

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. The Company has deposits in a limited number of financial institutions with federally insured limits. Cash (including cash equivalents) at these institutions is normally in excess of the insured limits. However, the Company believes that the institutions are financially sound and there is only nominal risk of loss.

Inventories

Inventories are stated at the lower of cost, determined by the first-in, first-out method, or market.

Property and equipment

Property and equipment, including leasehold improvements, are stated at cost. Depreciation is computed using the straight-line method based on the estimated useful lives of the assets, which range from two to five years for machinery and equipment, and twenty years for building and improvements. Leasehold improvements are amortized over the life of the improvement or the lease term, whichever is shorter. Maintenance and repairs are charged to expense when incurred.

The Company has separately reported its FORE-SIGHT cerebral oximetry monitors located at customer sites within the U.S. Such equipment is held under a no cost program whereby customers purchase disposable sensors for use with the Company's equipment. The Company retains title to the monitors shipped to its customers under this program. The monitors are depreciated on a straight-line basis over five years to cost of sales. As of December 31, 2009, the Company has capitalized \$1,219,418 of costs pertaining to the monitors which have a net book value of \$768,979.

Depreciation and amortization expense on property and equipment was \$1,053,834 in 2009, \$1,026,870 in 2008, and \$750,411 in 2007.

Goodwill

The Company assesses its goodwill for impairment annually in the fourth quarter or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. All of the Company's goodwill is attributable to the Statcorp business unit. In connection with its 2009 impairment review during the fourth quarter, the Company determined that the goodwill of \$3,379,021 associated with the acquisition of Statcorp, Inc. during May 2005 was impaired. Accordingly, the Company recognized an impairment charge of \$2,155,785 during the fourth quarter of 2009. The fair market value of the goodwill as of December 31, 2009 is recorded as \$1,223,236. The Company used adjusted quoted market prices and other observable (Level 2) inputs to estimate the fair value of the Statcorp business unit.

Intangible and other assets

The Company reviews its intangible and other assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company believes that the carrying amounts of its long-lived assets are fully recoverable.

Intangible and other assets at December 31, 2009 and 2008 consist of:

	<u>2009</u>	<u>2008</u>
Patents and other assets	\$ 606,271	\$ 628,273
Patents pending	240,981	204,510
Purchased technology	33,893	123,893
Capitalized software	179,946	177,813
Deferred finance charges	<u>46,986</u>	<u>71,938</u>
	1,108,077	1,206,427
Accumulated amortization	<u>(482,316)</u>	<u>(449,049)</u>
	<u>\$ 625,761</u>	<u>\$ 757,378</u>

Intangible and other assets are stated at cost. Patents are amortized over their estimated useful lives which range from 1 to 20 years. Purchased technology is amortized over five years. Costs associated with the development of new external use software products are expensed as incurred until technological feasibility has been established. Technological feasibility is demonstrated by the completion of a detailed design plan. Capitalization ceases when the product is available for general release to customers. Capitalized costs are amortized over their estimated 3 year useful lives. Deferred financing costs are amortized over the term of the related debt. Amortization expense was \$135,280 in 2009, \$142,465 in 2008 and \$63,808 in 2007.

Expected amortization expense of intangible assets as of December 31, 2009 over the next five years follows:

2010	\$ 69,000
2011	29,000
2012	22,000
2013	15,000
2014	<u>13,000</u>
	<u>\$ 148,000</u>

Revenue and accounts receivable recognition

Revenue from sales and accounts receivable are recognized when evidence of an arrangement exists, delivery has occurred based upon shipping terms, the selling price is fixed and determinable, and collectability is reasonably assured. Terms of sale for most domestic sales are FOB origin and for most international sales are EX-Works reflecting that ownership and risk of loss are assumed by the buyer at shipping point. In addition, the Company has certain agreements with its customers to ship FOB destination reflecting that ownership and risk of loss are assumed by the buyer upon delivery. While the Company accepts returns of products from its customers from time to time for various reasons including defective goods, order entry, shipping or other errors, the Company's business practices do not include providing right of return at the time of sale. Historically, such returns have not been significant. The Company has entered into agreements with several customers to provide them with price rebates based upon their level of purchases. Rebates are accrued by the Company as a reduction in net sales as they are earned by customers. Payment terms range from prepayment to net sixty days depending upon certain factors including customer credit worthiness, geographical location and customer type (i.e., end-user, distributor, government or private entity) and also includes irrevocable letters of credit for certain international shipments. Price discounts that may be taken by customers under contractual arrangements for payment of invoices within specified periods are recorded as reductions to net sales. Further, the Company accrues expected payment discounts based upon specific customer accounts receivable balances. The Company does not incur post shipment obligations with the exception of product warranties which are generally fulfilled from the Company's corporate facilities and which costs are not material relative to the sale of the product. Accounts receivable are charged to the allowance for doubtful accounts when deemed uncollectible.

Income taxes

The Company recognizes deferred income tax assets and liabilities for future tax consequences resulting from differences between the book and tax bases of existing assets and liabilities. A valuation allowance is provided for that portion of deferred income tax assets which may not be realized.

As of January 1, 2007, the Company adopted new accounting standards to account for uncertain income tax positions. The new accounting standard prescribes a more-likely-than-not threshold for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. It also provides guidance on de-recognition of income tax assets and liabilities, the classification of current and deferred income tax assets and liabilities, the accounting for interest and penalties associated with tax positions, the accounting for income taxes in interim periods, and income tax disclosures. In conjunction with this change in accounting, the Company recognized non-current liabilities of \$134,375 for uncertain tax positions with a charge to retained earnings. There was no effect on operating results or cash flows.

The Company files U.S. Federal and multiple state income tax returns. With few exceptions, the Company's tax returns have been examined for years prior to 2005. Interest and penalties related to uncertain tax positions are classified with income taxes.

Warranty costs

The Company warrants some of its products against defects and failures for up to three years and records the

estimated cost of such warranties at the time the sale is recorded. Estimated warranty costs are based upon actual past experiences of product returns and the related estimated cost of labor and material to make the necessary repairs.

A summary of the changes in the Company's warranty accrual follows:

	<u>2009</u>	<u>2008</u>
Beginning balance	\$ 50,000	\$ 50,000
Provision	141,265	188,775
Warranty costs incurred	<u>(141,265)</u>	<u>(188,775)</u>
Ending balance	<u>\$ 50,000</u>	<u>\$ 50,000</u>

Research and development costs

The Company expenses all research and development costs as incurred. Research and development includes, among other expenses, direct costs for salaries, employee benefits, professional services, materials and facility related expenses.

The Company has received various grants which support its research and development efforts. In accordance with the terms of these grants, the Company is being reimbursed for certain qualifying expenditures under the agreement. Funding provided to the Company is being recorded as a reduction of R&D expenses. The Company recognizes the reimbursement on an accrual basis as the qualifying costs are incurred.

Advertising costs

Non-direct response advertising costs are expensed as incurred and include product promotion, samples, meetings and conventions, and print media. Advertising expense was \$696,000 in 2009, \$936,000 in 2008 and \$990,000 in 2007.

Earnings per common share

Basic earnings per share is calculated by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the year. Diluted earnings per share assumes the exercise or conversion of dilutive securities using the treasury stock method.

A summary of the denominators used to compute basic and diluted earnings (loss) per share for the years ended December 31, 2009, 2008 and 2007 follow:

	<u>2009</u>	<u>2008</u>	<u>2007</u>
Weighted average shares outstanding, net of restricted shares – used to compute basic earnings (loss) per share	11,260,553	11,031,855	10,696,217
Dilutive effect of restricted shares, and outstanding warrants and options	_____ -	_____ -	<u>1,515,477</u>
Weighted average shares of dilutive securities outstanding – used to compute diluted earnings (loss) per share	<u>11,260,553</u>	<u>11,031,855</u>	<u>12,211,694</u>

All outstanding stock related grants were excluded from the 2009 and 2008 diluted loss per share calculations as they would have been anti-dilutive.

Fair value of financial instruments

The fair value of the Company's long-term debt as of December 31, 2009 approximates its carrying value of \$1,708,755. Fair value was determined using unobservable inputs (i.e. Level III). The fair value of all other financial instruments approximates their carrying value using active market data (i.e. Level I).

Subsequent events

The Company has performed a review of events subsequent to the balance sheet date through the date the financial statements were issued.

New accounting pronouncements

In June 2009, the Financial Accounting Standards Board ("FASB") issued FASB ASC 105, Generally Accepted Accounting Principles, which establishes the FASB Accounting Standards Codification as the sole source of authoritative generally accepted accounting principles. Pursuant to the provisions of FASB ASC 105, the Company has updated references to GAAP in its financial statements issued for the period ended on or after September 30, 2009. The adoption of FASB ASC 105 did not impact the Company's financial position or results of operations.

(3) ALLOWANCE FOR DOUBTFUL ACCOUNTS

Changes in the allowance for doubtful accounts during the years ended December 31, 2009 and 2008 follow:

	<u>2009</u>	<u>2008</u>
Balance at beginning of year	\$ 150,000	\$ 125,000
Provision	63,689	25,350
Accounts written off	<u>(38,689)</u>	<u>(350)</u>
Balance at end of year	<u>\$ 175,000</u>	<u>\$ 150,000</u>

(4) INVENTORIES

Inventories at December 31, 2009 and 2008 consist of:

	<u>2009</u>	<u>2008</u>
Raw materials	\$ 6,185,097	\$ 7,560,332
Work in process	39,544	24,560
Finished goods	<u>1,582,271</u>	<u>2,201,646</u>
	<u>\$ 7,806,912</u>	<u>\$ 9,786,538</u>

(5) FINANCING ARRANGEMENTS

Line-of-credit

On February 11, 2008, the Company amended and restated its existing line of credit with NewAlliance Bank (the "Bank"). The Company entered into a new Commercial Loan Agreement (the "Loan Agreement") and related Commercial Revolving Promissory Note (the "Note") which provided for borrowings on a revolving basis, at the Bank's discretion, in an amount up to \$10,000,000. Loans in excess of \$2,000,000 up to \$10,000,000 could be made only if the maximum principal amount outstanding did not exceed a borrowing base equal to the sum of (i) 75% of eligible receivables (as defined in the Loan Agreement) and (ii) the lesser of \$2,500,000 or 30% of eligible inventory (as defined in the Loan Agreement.) Borrowings under the Loan Agreement and the Note were secured by a first priority lien in all the business assets of the Company pursuant to a Security Agreement (the "Security Agreement"). The Loan Agreement contained customary non-financial covenants and financial covenants consisting of a debt service coverage ratio and a debt to tangible net worth ratio.

On December 31, 2008, the Company amended the line of credit pursuant to a Debt Modification Agreement (the "First Modification"). The First Modification amended the Loan Agreement and related Note and extended the maturity date of the Note to July 1, 2010 and also amended the interest rate for the line of credit to the Bank's base rate with a minimum interest rate of 3.25% per annum. The line-of-credit was further amended by the Second Modification Agreement (the "Second Modification") dated April 3, 2009 and effective March 31, 2009 which reduced the maximum availability under the line of credit from \$10,000,000 to \$5,000,000 and also amended the debt service coverage ratio from a quarterly test to an annual test for the twelve months ended December 31, 2009 and revised the minimum ratio from 1.5 to 1 to 1.0 to 1. As of the first quarter of 2010 and thereafter, the ratio was scheduled to return to 1.5 to 1 resumed on a quarterly basis.

On March 11, 2010, the line-of-credit was amended by the Third Modification Agreement (the "Third Modification"). The Third Modification amended the Loan Agreement and the Note each as previously amended. Under the Third Modification, the maturity date was extended to April 1, 2011 and the interest rate for the revolving loans under the Loan Agreement was increased from the Bank's Base Rate (as defined in the Second Modification) plus 1.0% with a minimum of 4.0% per annum to the Bank's Base Rate (as defined in the Third Modification) plus 2.0% with a minimum interest rate of 5.0% per annum. The interest rate effective upon execution of the Third Modification was 5.25% per annum. Additionally, the Third Modification amended the existing debt service coverage ratio covenant from 1.5 to 1.0 to 1.25 to 1.0, tested beginning March 31, 2010 and quarterly thereafter, measured on a year-to-date basis. In connection with the Third Modification, the Bank waived the testing of the debt service coverage ratio covenant as of December 31, 2009.

The Company also amended its existing term note with the Bank to conform the debt service coverage ratio covenant to the ratio contained in the Third Modification.

As of March 11, 2010, the outstanding balance under the line of credit was \$2,129,000 and the availability was approximately \$1,442,000. In addition, the Company held approximately \$1,000,000 in cash and cash equivalents as of March 11, 2010.

Notes payable

The Company financed the premiums for its property casualty and directors and officers insurance policies and with short-term borrowings of \$228,052, \$289,886, and \$410,639, in 2009, 2008 and 2007, respectively. The outstanding balance as of December 31, 2009 was \$50,678.

Long-term debt

Long-term debt at December 31, 2009 and 2008 consists of:

	<u>2009</u>	<u>2008</u>
Note payable to a bank in monthly installments of \$61,533, including interest at 6.0% to May 2012	\$ 1,708,755	\$ 2,322,560
Less current portion	<u>652,482</u>	<u>614,067</u>
	<u>\$ 1,056,273</u>	<u>\$ 1,708,493</u>

Scheduled principal maturities of long-term debt follow:

2010	\$ 652,482
2011	693,300
2012	<u>362,973</u>
	<u>\$ 1,708,755</u>

Collateral and covenants

Substantially all assets are pledged as collateral for long-term debt and borrowings under the line-of-credit. In addition, the Company is required to meet, among others, debt service and debt to equity covenants. As of December 31, 2009, the Company was not in compliance with its debt service covenant. The Company has received a waiver from its lender to this effect with respect to the December 31, 2009 measurements.

(6) ACCRUED EXPENSES

Accrued expenses at December 31, 2009 and 2008 consist of:

	<u>2009</u>	<u>2008</u>
Payroll	\$ 331,874	\$ 327,239
Severance	250,827	-
Professional fees	308,918	174,529
Warranty	50,000	50,000
Travel and entertainment	64,600	53,270
Other	<u>306,945</u>	<u>230,830</u>
	<u>\$ 1,313,164</u>	<u>\$ 835,868</u>

(7) SHARE-BASED PAYMENT PLANS

Under the CAS Medical Systems, Inc. 2003 Equity Incentive Plan (the "Incentive Plan"), as amended, 1,250,000 shares of common stock have been reserved for issuance. Awards that may be granted under the Incentive Plan include options, restricted stock, restricted stock units, and other stock-based awards. The purposes of the Incentive Plan are to make available to key employees and directors, certain compensatory arrangements related to growth in the value of the Company's stock so as to generate an increased incentive to contribute to the Company's financial success and prosperity; to enhance the Company's ability to attract and retain exceptionally qualified individuals whose efforts can affect the Company's financial growth and profitability; and align in general the interests of employees and directors with the interests of stockholders. The Incentive Plan is administered by the Compensation Committee of the Board of Directors, which in turn determines the employees, officers and directors to receive awards and the terms and conditions of these awards. As of December 31, 2009, 402,273 shares remain available for issuance under the Incentive Plan.

During 2009, the Company issued an aggregate of 150,000 shares of restricted stock to employees and 23,528 shares of restricted stock to outside members of the Board of Directors under the Incentive Plan. The restricted stock issued to employees during 2009 vests from twenty-four months to thirty-six months from date of grant while the restricted stock issued to members of the Board of Directors vests ratably over twelve months from date of grant. The weighted average value of the restricted stock was \$1.80 per share and the aggregate fair value of the stock issued based on the closing market price on the date granted was \$311,698. The fair value of the restricted common shares was calculated based upon the market value of the common stock on the date of issuance. During 2009, 45,501 shares of restricted stock were cancelled. As of December 31, 2009, 191,102 shares of non-vested restricted common stock issued to date remain outstanding. Stock compensation expense of \$931,278 has been recognized to December 31, 2009 related to restricted shares granted in 2009 and in prior years. The unamortized stock compensation expense associated with the restricted shares at December 31, 2009 was \$334,000 and will be recognized ratably through 2012.

During 2009, under the Incentive Plan, options for 25,000 shares of common stock were granted to the Company's employees at a weighted average exercise price of \$1.82 per share. The aggregate fair value of the options granted based on the closing market price on the grant date was \$29,900. As of December 31, 2009, 488,175 shares granted under stock options remain outstanding of which 378,175 pertain to options granted under the 2003 Equity Incentive Plan and 110,000 pertain to stock options granted under the 1994 Employees Stock Option Plan (the "1994 Plan"). The 1994 Plan expired during 2003 and, as such, there are no further options available for issuance under the 1994 Plan.

A summary of the Company's stock option plans and changes during the years follow:

	2009			2008		
	<u>Option Shares</u>	<u>Weighted Average Exercise Price</u>	<u>Aggregate Intrinsic Value</u>	<u>Option Shares</u>	<u>Weighted Average Exercise Price</u>	<u>Aggregate Intrinsic Value</u>
Outstanding at beginning of year	590,125	\$ 2.43		524,425	\$ 2.11	
Granted	25,000	1.82		125,000	3.89	
Exercised	(24,700)	0.96		(29,300)	1.40	
Canceled	<u>(102,250)</u>	3.77		<u>(30,000)</u>	4.00	
Outstanding at end of year	<u>488,175</u>	2.19	<u>\$ 233,619</u>	590,125	2.43	<u>\$ 737,613</u>
Exercisable at end of year	<u>441,507</u>	2.10	<u>\$ 233,619</u>	461,791	2.00	<u>\$ 769,580</u>
Weighted average grant-date fair value of options granted during the year		\$ 1.20			\$ 2.90	

The total intrinsic value of stock options exercised was \$21,205 in 2009 and \$62,731 in 2008. The intrinsic value of a stock option is the amount by which the current market value of the underlying stock exceeds the option exercise price.

The fair value of each option is estimated on the date of grant using the Black-Scholes option pricing model. Similar to other option pricing models, the Black-Scholes model requires the input of highly subjective assumptions which may materially affect the estimated fair value of the Company's stock options.

The following weighted-average assumptions were used for grants in 2009, 2008 and 2007: risk-free interest rates of 3.4%, 3.9% and 4.6%; expected lives of 4.2 years; dividend yield of 0%; and expected volatility of 88%, 63% and 115%. Risk-free interest rates approximate U.S. Treasury yields in effect at the time of the grant. The expected lives of the stock options are determined using historical data adjusted for the estimated exercise dates of unexercised options. Volatility is determined using both current and historical implied volatilities of the underlying stock which is obtained from public data sources.

Additional information about stock options outstanding and exercisable at December 31, 2009 follows:

<u>Range of Exercise Prices</u>	<u>Number Outstanding</u>	<u>Weighted Remaining Contractual Life in Years</u>	<u>Average Exercise Price</u>	<u>Number Exercisable</u>	<u>Average Exercise Price</u>
\$ 0.57 - \$ 0.82	110,000	2.0	\$ 0.68	110,000	\$0.68
1.42 - 1.95	135,675	5.0	1.54	115,675	1.47
2.30 - 3.10	177,500	5.7	2.82	164,166	2.82
3.59 - 5.02	<u>65,000</u>	6.4	4.40	<u>51,666</u>	4.24
\$ 0.57 - \$ 5.02	<u>488,175</u>	4.8	\$ 2.19	<u>441,507</u>	\$2.10

Warrants to purchase 964,401 shares of common stock at a weighted average exercise price of \$0.44 per share were outstanding at December 31, 2009. The warrants have no specific expiration date and have an exercise price range of \$0.30 to \$1.44 per share. There were no warrants granted or exercised during 2009 or 2008.

On June 10, 2009, the Company's stockholders approved the CAS Medical Systems, Inc. Employee Stock Purchase Plan. Accordingly, 150,000 shares of common stock have been reserved for issuance under the Stock Purchase Plan. The initial offering period began on July 1, 2009. To December 31, 2009, amounts had been withheld from employees' compensation for an additional 6,009 shares which were issued during January 2010. The Stock Purchase Plan offers the Company's employees an opportunity to participate in a payroll-deduction based program designed to incentivize them to contribute to the Company's success. The plan approved by the stockholders during June 2009 replaced a plan in effect since June 2004. The current plan contains certain changes including a reduction of the discount to 95% of the market value at the end of each offering period under which participants purchase shares of the Company's common stock.

(8) BENEFIT PLANS

The Company maintains a 401(k) benefit plan for its employees, which generally allows participants to make contributions via salary deductions up to allowable Internal Revenue Service limits on a tax-deferred basis. Such deductions are matched in part by discretionary contributions by the Company. Matching contributions by the Company were \$18,091 in 2009, \$109,421 in 2008 and \$110,586 in 2007. The Company suspended its discretionary matches during March 2009.

(9) INCOME TAXES

The components of current and deferred federal and state income tax expense (benefit) for the years ended December 31, 2009, 2008 and 2007 consist of:

	<u>2009</u>	<u>2008</u>	<u>2007</u>
Current (benefit):			
Federal	\$ (827,162)	\$ (28,597)	\$ 657,438
State	<u>17,109</u>	<u>(147,508)</u>	<u>(133,620)</u>
	(810,053)	(176,105)	523,818
Deferred (benefit):			
Federal	1,004,222	(155,637)	(507,348)
State	<u>37,641</u>	<u>156,011</u>	<u>(19,069)</u>
	<u>1,041,863</u>	<u>374</u>	<u>(526,417)</u>
Income taxes (benefit)	<u>\$ 231,810</u>	<u>\$ (175,731)</u>	<u>\$ (2,599)</u>

A reconciliation of U.S. Federal income taxes computed at the statutory rate to income taxes shown in operations for the years ended December 31, 2009, 2008 and 2007 follows:

	<u>2009</u>	<u>2008</u>	<u>2007</u>
Income taxes at the statutory rate	\$ (1,889,670)	\$ (191,667)	\$ 103,313
State income taxes, net of federal effect	(18,018)	5,612	(100,774)
R&D and other tax credits	(54,951)	(25,021)	(80,700)
Stock options	-	3,523	33,424
Goodwill impairment	732,967	-	-
Change in valuation allowance	1,448,630	-	-
Other	<u>12,852</u>	<u>31,822</u>	<u>42,138</u>
Income taxes (benefit)	<u>\$ 231,810</u>	<u>\$ (175,731)</u>	<u>\$ (2,599)</u>

Deferred income tax assets and (liabilities) at December 31 relate to:

	<u>2009</u>	<u>2008</u>
Inventories	\$ 636,159	\$ 545,930
Warranty accrual	17,495	17,495
Allowance for doubtful accounts	61,233	52,492
Tax credits	282,528	163,830
Deferred gain on sale and leaseback	361,819	408,928
Restricted stock	225,997	-
Other	<u>216,201</u>	<u>155,884</u>
	<u>1,801,432</u>	<u>1,344,559</u>
Prepaid expenses	(134,065)	(144,137)
Property and equipment	<u>(218,737)</u>	<u>(158,559)</u>
Deferred income tax assets and liabilities	1,448,630	1,041,863
Valuation allowance	<u>(1,448,630)</u>	-
Net deferred income tax assets and liabilities	<u>\$ -</u>	<u>\$ 1,041,863</u>

The Company has performed the required analysis of both positive and negative evidence regarding the realization of our deferred income tax assets, including our past results of operations, recent cumulative losses and our forecast for future taxable income. The assessment required the use of assumptions about future revenues and pre-tax income making allowance for uncertainties surrounding the rate of adoption of our products in the marketplace, competitive influences and the investments required to increase our market share in certain markets for our products. As of December 31, 2009, we have concluded that it is more likely than not that such deferred income tax assets will not be realized and accordingly have established a deferred income tax asset valuation allowance in the amount of \$1,448,630.

The Company has recorded a federal income tax receivable of \$871,206 resulting from the carry back of 2009 net operating losses to 2004 and 2005. The American Recovery and Reinvestment Act of 2009 allows the Company to carry back its 2009 taxable loss up to five years.

A reconciliation of unrecognized income tax benefits for 2009 and 2008 follows:

	<u>2009</u>	<u>2008</u>
Balance at beginning of year	\$ 155,875	\$ 145,125
Increase for tax positions taken during a prior period	13,500	10,750
Increase for tax positions taken in current year	<u>107,905</u>	<u>-</u>
Balance at end of year	<u>\$ 277,280</u>	<u>\$ 155,875</u>

During 2009, \$13,500 of interest on uncertain tax positions was recognized as income tax expense. As of December 31, 2009, \$61,875 of interest and penalties were accrued. The total amount of unrecognized income tax benefits, if recognized, would affect the Company's effective income tax rate by approximately \$73,000. Currently, the Company does not believe that the unrecognized income tax benefits will significantly change in 2010.

(10) GRANT AWARDS

The Company has been awarded various grants by the National Institutes of Neurological Disorders and Stroke of the NIH under its Small Business Innovative Research Program. Grants under this program have been used to support the development of the Company's Near-Infrared Spectroscopy ("NIRS") technology which non-invasively measures the brain oxygenation level of a patient. In accordance with the terms of these grants, the Company has been reimbursed for certain qualifying expenditures. On September 17, 2007, the Company was awarded a three year grant totaling \$2,800,000 to support its NIRS research.

Qualifying research and development costs ("R&D") of \$737,000 in 2009, \$582,000 in 2008 and \$479,000 in 2007 were reimbursed under grants. Such reimbursements are recorded as a reduction in R&D expenses. The Company recognizes these reimbursements on an accrual basis as the qualifying costs are incurred. As of December 31, 2009, a maximum of approximately \$1,000,000 remains available under the 2007 grant.

(11) SALE AND LEASEBACK OF PROPERTY

On September 6, 2007, the Company closed the sale and leaseback of its headquarters and manufacturing facility (the "Property"). Net proceeds from the sale were \$2,791,529 of which \$928,872 was used to retire the related outstanding mortgage debt. The gain of \$1,346,373 realized on the sale has been deferred and is being recognized in operations as a reduction in rent expense over the term of the lease. The lease has an initial term of ten years expiring on September 6, 2017 and an option for two additional five-year periods. The lease provides for an annual base rent in years one through five of \$244,800 and \$268,800 in years six through ten. The Company recognizes rent expense on a straight-line basis over the ten years. Under the lease, the Company is responsible for the costs of utilities, insurance, taxes and maintenance expenses. Further, the Company is required to maintain at least \$600,000 in cash and cash equivalents (increasing at 3% per annum) and net current assets of not less than \$3,600,000.

In addition, the Company has a right of first offer to lease any additional space or building built by the lessor on the Property, subject to certain restrictions. The Company also has the right to require the lessor to build an addition or additional building ("Expansion Premises"), subject to certain restrictions. Upon the delivery of any Expansion Premises, the term of the Lease would extend for a ten year term. The base rent for the Expansion Premises would be the greater of the then prevailing market rent or an amount equal to a return on actual costs of construction of the greater of 250 basis points over the rate on ten year U.S. Treasury Notes, or 8%. Upon

delivery of the Expansion Premises, the lessor would assume obligations under the Company's existing leases of its two adjacent properties, in exchange for a payment equal to three months rent and certain unamortized costs incurred with respect to these two facilities.

(12) COMMITMENTS/LITIGATION

Litigation

The manufacture and sale of our products exposes us to product liability claims and product recalls, including those which may arise from misuse or malfunction of, or design flaws in, our products or use of our products with components or systems not manufactured or sold by us. Product liability claims or product recalls, regardless of their ultimate outcome, could require us to spend significant time and money in litigation or to pay significant damages. We are currently a defendant in a product liability action which has not yet been scheduled for trial. We believe that our product liability insurance is sufficient to cover any damages and costs that are likely with respect to this matter. There can be no assurance however, that this will be the case with respect to this matter or any future matters. Furthermore, we may not be able to obtain insurance in the future at satisfactory rates or in adequate amounts. In addition, publicity pertaining to the misuse or malfunction of, or design flaws in, our products could impair our ability to successfully market and sell our products and could lead to product recalls.

On August 7, 2009, Somanetics Corporation ("Somanetics") filed an action against the Company in the United States District Court for the Eastern District of Michigan alleging patent infringement, false advertising, and common law unfair competition and libel related to the Company's FORE-SIGHT product line. The complaint requests injunctive relief and unspecified monetary damages, including treble damages and reasonable attorneys' fees. On October 19, 2009, the Company answered the complaint, denying all allegations against it. In addition, the Company has asserted counterclaims against Somanetics for violation of the antitrust laws and for a declaration that the patents sued upon are invalid, unenforceable, and/or have not been infringed by the Company.

Operating Leases

The Company currently leases four separate operating facilities and certain equipment under non-cancellable operating leases. Rent expense under these leases was \$544,000 in 2009, \$639,000 in 2008 and \$280,000 in 2007. Future annual minimum rental payments as of December 31, 2009 to the expiration of the leases follow: 2010-\$541,000; 2011-\$455,000; 2012-\$457,000; 2013-\$450,000; 2014-\$402,000; and thereafter \$766,000.

(13) ARBITRATION SETTLEMENT

On May 8, 2007, the Company signed an exclusive distribution agreement (the "Agreement") with Analogic Corporation ("Analogic") under which the Company obtained worldwide exclusive rights to market the Analogic Lifegard® family of non-invasive patient monitors. Under the Agreement, Analogic would co-brand the devices and reconfigure its Lifegard II monitor to include the Company's MAXNIBP branded non-invasive blood pressure and other branded technologies. Accordingly, the Company would reimburse Analogic approximately \$900,000 upon meeting agreed milestone dates for such efforts. The Company made one payment to Analogic of \$90,000.

On November 24, 2008, Analogic commenced arbitration against the Company contending that the Company breached the Agreement. Analogic was seeking damages of approximately \$765,000 for costs it allegedly incurred in performing under the Agreement including winding down costs and additional remedies which could have provided for relief totaling double or treble damages, in addition to attorney fees. The Company denied Analogic's claims and asserted a counterclaim for damages in excess of those sought by Analogic. The arbitration hearing was conducted on June 15, 2009. In August 2009, the Company reached a settlement of its

arbitration pursuant to which Analogic has paid the Company the sum of \$811,000 in full satisfaction of all matters raised in the arbitration. The Company and Analogic have negotiated a conclusion to their contractual relationship by way of an orderly process that will protect the customers of the Company and Analogic by allowing the Company to continue distributing products until July 31, 2010.

As a result of the settlement, the Company wrote-off \$99,309 of intangible assets associated with the contract and recorded the \$711,691 balance as a reduction of general and administrative expenses to offset previously reported legal expenses associated with this matter.

Sales of Analogic products recorded by the Company for 2009 and 2008 were \$913,000 and \$2,173,000, respectively.

(14) UNAUDITED QUARTERLY INFORMATION

Unaudited quarterly financial information follows:

	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter (3)</u>	<u>Fourth Quarter(2)</u>	<u>Total Year</u>
Year ended December 31, 2009					
Net sales	\$ 8,405,824	\$ 8,568,115	\$ 9,165,561	\$ 8,095,718	\$34,235,218
Cost of sales	<u>5,940,695</u>	<u>5,975,792</u>	<u>5,964,848</u>	<u>5,469,301</u>	<u>23,350,636</u>
Gross profit	2,465,129	2,592,323	3,200,713	2,626,417	10,884,582
Net (loss) income	(902,868)	(833,658)	197,138	(4,250,276)	(5,789,664)
Net (loss) income per common share (1):					
Basic	\$ (0.08)	\$ (0.07)	\$ 0.02	\$ (0.38)	\$ (0.51)
Diluted	\$ (0.08)	\$ (0.07)	\$ 0.02	\$ (0.38)	\$ (0.51)
	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>	<u>Fourth Quarter</u>	<u>Total Year</u>
Year ended December 31, 2008					
Net sales	\$ 8,961,551	\$10,542,919	\$11,708,082	\$ 9,436,505	\$40,649,057
Cost of sales	<u>6,281,396</u>	<u>7,051,041</u>	<u>7,407,603</u>	<u>6,007,550</u>	<u>26,747,590</u>
Gross profit	2,680,155	3,491,878	4,300,479	3,428,955	13,901,467
Net (loss) income	(529,891)	(32,008)	328,866	(154,961)	(387,994)
Net (loss) income per common share (1):					
Basic	\$ (0.05)	\$ (0.00)	\$ 0.03	\$ (0.01)	\$ (0.04)
Diluted	\$ (0.05)	\$ (0.00)	\$ 0.03	\$ (0.01)	\$ (0.04)

- (1) The sum of quarterly per share amounts may not equal per share amounts reported for year-to-date or full-year periods due to change the number of weighted average shares outstanding and the effects of rounding.
- (2) During the fourth quarter of 2009, the Company recognized a goodwill impairment charge of \$2,155,785 and recorded a deferred income tax asset valuation allowance of \$1,448,630.
- (3) During the third quarter of 2009, the Company recorded a recovery of legal expenses and reimbursements for asset write-downs totaling \$712,000 related to a settlement with the Analogic Corporation.

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

None.

Item 9A(T). Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure based on the definition of "disclosure controls and procedures" in Rule 13a-15(e). In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

The Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and the Company's Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of December 31, 2009. Based upon the foregoing evaluation, the Chief Executive Officer and the Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective as of that date.

There have been no changes in the Company's internal control over financial reporting during the quarter ended December 31, 2009 that have materially affected, or are reasonably likely to materially affect the Company's internal control over financial reporting.

Management's Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of the Company's management, including the principal executive officer and principal financial officer, an evaluation was conducted to determine the effectiveness of internal control over financial reporting based on the framework in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the Company's evaluation under the framework in *Internal Control - Integrated Framework*, the Company's management concluded that its internal control over financial reporting was effective as of December 31, 2009.

This annual report does not include an attestation report of the Company's independent registered public accounting firm regarding internal control over financial reporting pursuant to temporary rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this annual report.

Reference is made to the Certifications of the Chief Executive Officer and the Chief Financial Officer about these and other matters attached as Exhibits 31.1, 31.2 and 32.1 to this report.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Reference is made to the disclosure required by Items 401, 405, 406 and 407(c)(3), (d)(4) and (d)(5) of Regulation S-K to be contained in the Registrant's definitive proxy statement to be mailed to shareholders on or about April 23, 2010, and to be filed with the Securities and Exchange Commission.

Item 11. Executive Compensation

Reference is made to the disclosure required by Items 402 and 407 (e) (4) and (e) (5) of Regulation S-K to be contained in the Registrant's definitive proxy statement to be mailed to shareholders on or about April 23, 2010, and to be filed with the Securities and Exchange Commission.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Reference is made to the disclosure required by Item 403 of Regulation S-K to be contained in the Registrant's definitive proxy statement to be mailed to shareholders on or about April 23, 2010, and to be filed with the Securities Exchange Commission.

The following table provides information regarding the Company's equity compensation plans as of December 31, 2009:

<u>Plan Category</u>	<u>Number of securities to be issued upon exercise of outstanding options and warrants</u>	<u>Weighted-average exercise price of outstanding options and warrants</u>	<u>Number of securities remaining available for future issuance under equity compensations plans</u>
Equity compensation plans approved by security holders	488,175	\$ 2.19	402,273
Equity compensation plans not approved by security holders	<u>964,401</u>	0.50	<u>-</u>
Total	<u>1,452,576</u>	\$ 1.03	<u>402,273</u>

Securities remaining available for issuance under equity compensation plans approved by security holders are from the CAS Medical Systems, Inc. 2003 Equity Incentive Plan. The equity compensation plans not approved by security holders consist of warrants granted to both current and former directors of the Company as compensation for services rendered. These warrants have no expiration date. See Note 7 to the Company's Financial Statements.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Reference is made to the disclosure required by Item 404 of Regulation S-K to be contained in the Registrant's definitive proxy statement to be mailed to shareholders on or about April 23, 2010, and to be filed with the Securities and Exchange Commission.

Item 14. Principal Accountant Fees and Services

Reference is made to the proposal regarding the approval of the Registrant's independent accountants to be contained in the Registrant's definitive proxy statement to be mailed to shareholders on or about April 23, 2010, and to be filed with the Securities and Exchange Commission.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) (1) Financial Statements

The Company's financial statements are included in response to Item 8 of this report.

Report of Independent Registered Public Accounting Firm

Financial Statements

Consolidated Balance Sheets as of December 31, 2009 and 2008

Consolidated Statements of Operations for the Years Ended December 31, 2009, 2008 and 2007

Consolidated Statements of Changes in Shareholders' Equity for the Years Ended December 31, 2009, 2008 and 2007

Consolidated Statements of Cash Flows for the Years Ended December 31, 2009, 2008 and 2007

Notes to Consolidated Financial Statements

(2) Financial Statement Schedules

None.

(3) Exhibits

The Exhibits to this report are as set forth in the "Exhibit Index" on page 29 of this report. Management contracts or compensatory plans or arrangements filed as an exhibit to this report are identified in the "Index to Exhibits" with an asterisk after the exhibit number.

EXHIBIT INDEX

- 2.1 Stock Purchase Agreement dated May 15, 2005 between CAS Medical Systems, Inc., Statcorp, Inc., and the Stockholders of Statcorp Inc. (1)
- 3.1 Certificate of Incorporation of Registrant (2)
- 3.2 Amended and Restated Bylaws of Registrant (14)
- 10.1* Employment Agreement dated September 1, 1993 between Louis P. Scheps and CAS Medical Systems, Inc. (4)
- 10.2* Amendment Number One to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (4)
- 10.3* Amendment Number Two to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (4)
- 10.4* Amendment Number Three to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (4)
- 10.5* Amendment Number Four to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (3)
- 10.6* Amendment Number Five to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (5)
- 10.7* Amendment Number Six to Employment Agreement between Louis P. Scheps and CAS Medical Systems, Inc. (6)
- 10.8* 1994 Employees' Incentive Stock Option Plan (7)
- 10.9* CAS Medical Systems, Inc. Employee Stock Purchase Plan (8)
- 10.10* CAS Medical Systems, Inc. 2003 Equity Incentive Plan (9)
- 10.11* Form of Option Agreement (5)
- 10.12 Commercial Line of Credit Note and Loan Agreement with NewAlliance Bank (10)
- 10.13 Security Agreement with NewAlliance Bank (10)
- 10.14 Commercial Loan and Security Agreement between CAS Medical Systems, Inc., NewAlliance Bank and Statcorp Inc. (1)
- 10.15 Modification to Agreement between CAS Medical Systems, Inc. and NewAlliance Bank. (6)
- 10.16 Commercial Line of Credit Note and Loan Agreement dated October 27, 2006 (11)
- 10.17 Security Agreement in favor of NewAlliance Bank dated October 27, 2006 (11)
- 10.18* Employment Agreement between Andrew E. Kersey and CAS Medical Systems, Inc. effective April 1, 2007 (12)
- 10.19 Purchase and Sale Agreement between CAS Medical Systems, Inc. and Davis Marcus Partners, Inc. (13)
- 10.20 Lease Agreement between CAS Medical Systems, Inc. and DMP New Branford, LLC (13)
- 10.21 Commercial Loan Agreement dated February 11, 2008 between CAS Medical Systems, Inc. and NewAlliance Bank (15)
- 10.22 Commercial Revolving Promissory Note dated February 11, 2008 (15)
- 10.23 Security Agreement dated February 11, 2008 in favor of NewAlliance Bank (15)
- 10.24 Subscription Agreement dated May 9, 2008 with jVen Capital, LLC (16)
- 10.25 First Amendment to Employment Agreement with Andrew E. Kersey dated December 29, 2008 (17)
- 10.26 Amendment No. 7 to Employment Agreement with Louis P. Scheps dated December 29, 2008 (17)
- 10.27 Amendment to the CAS Medical Systems, Inc. 2003 Equity Incentive Plan (17)
- 10.28 Debt Modification Agreement dated December 31, 2008 (18)
- 10.29 Second Modification Agreement dated April 3, 2009 (19)
- 10.30* Employment Agreement with Jeffery A. Baird dated August 10, 2009 (20)
- 10.31 Third Modification Agreement dated March 11, 2010 (21)
- 10.32 Trademarks and Letters Patent Security Agreement dated as of March 11, 2010 (21)
- 10.33 Guaranty dated as of March 11, 2010 from Statcorp, Inc. to NewAlliance Bank (21)
- 10.34 Security Agreement between Statcorp and NewAlliance Bank dated March 11, 2010 (21)
- 10.35 Modification to Commercial Loan and Security Agreement dated March 11, 2010 (21)
- 21.1 Subsidiaries of the Registrant
- 23.1 Consent of Independent Registered Public Accounting Firm
- 31.1 Certification of CEO Pursuant to Rule 13a-14
- 31.2 Certification of CFO Pursuant to Rule 13a-14
- 32.1 Certification of CEO and CFO Pursuant to 18 U.S.C. 1350

- (1) Incorporated by reference to the Company's Form 8-K/A filed July 29, 2005
- (2) Incorporated by reference to the Company's Registration Statement, dated April 15, 1985, filed with the Securities and Exchange Commission
- (3) Incorporated by reference to the Company's Form 10-KSB filed March 29, 2004
- (4) Incorporated by reference to the Company's Form 10-KSB filed March 28, 2003
- (5) Incorporated by reference to the Company's Form 10-KSB filed March 31, 2005
- (6) Incorporated by reference to the Company's Form 10-QSB filed November 14, 2005
- (7) Incorporated by reference to the Company's Form S-8 filed October 4, 2000
- (8) Incorporated by reference to the Company's Form S-8 filed June 10, 2004
- (9) Incorporated by reference to the Company's Form S-8 filed June 10, 2004
- (10) Incorporated by reference to the Company's Form 10-QSB filed November 12, 2004
- (11) Incorporated by reference to the Company's Form 8-K filed October 30, 2006
- (12) Incorporated by reference to the Company's Form 10-KSB filed March 19, 2007
- (13) Incorporated by reference to the Company's Form 8-K filed September 10, 2007
- (14) Incorporated by reference to the Company's Form 8-K filed November 30, 2007
- (15) Incorporated by reference to the Company's Form 8-K filed February 14, 2008
- (16) Incorporated by reference to the Company's Form 8-K filed May 14, 2008
- (17) Incorporated by reference to the Company's Form 8-K filed December 31, 2008
- (18) Incorporated by reference to the Company's Form 8-K filed January 6, 2009
- (19) Incorporated by reference to the Company's Form 10-K filed April 3, 2009
- (20) Incorporated by reference to the Company's Form 10-Q filed August 12, 2009
- (21) Incorporated by reference to the Company's Form 8-K filed March 17, 2010

SIGNATURES

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

CAS MEDICAL SYSTEMS, INC.

(Registrant)

/s/ Andrew E. Kersey

Date: March 29, 2010

By: Andrew E. Kersey
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 Registrant and in the capacities and on the dates indicated.

/s/ Louis P. Scheps

Date: March 29, 2010

Louis P. Scheps, Chairman of the Board

/s/ Lawrence Burstein

Date: March 29, 2010

Lawrence Burstein, Director

/s/ Jerome Baron

Date: March 29, 2010

Jerome Baron, Director

/s/ Evan Jones

Date: March 29, 2010

Evan Jones, Director

/s/ Andrew E. Kersey

Date: March 29, 2010

Andrew E. Kersey, President, Chief Executive
Officer and Director

/s/ Jeffery A. Baird

Date: March 29, 2010

Jeffery A. Baird, Chief Financial Officer
(Chief Financial and Accounting Officer)

SUBSIDIARIES OF THE REGISTRANT

Statcorp, Inc., a Delaware corporation.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-135158) and Forms S-8 (Nos. 33-90512, 333-47258, 333-116348, 333-116349, 333-160346, and 333-160347) of CAS Medical Systems, Inc. of our report dated March 29, 2010 relating to the financial statements, which appears in this Form 10-K.

/s/UHY LLP

New Haven, Connecticut
March 29, 2010

CERTIFICATION

I, Andrew E. Kersey, certify that:

1. I have reviewed this annual report on Form 10-K of CAS Medical Systems, 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 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 most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of 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 registrants' 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.

/s/ Andrew E. Kersey

Andrew E. Kersey
President and Chief Executive Officer

Date: March 29, 2010

CERTIFICATION

I, Jeffery A. Baird, certify that:

1. I have reviewed this annual report on Form 10-K of CAS Medical Systems, 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 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 most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of 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.

/s/ Jeffery A. Baird

Jeffery A. Baird
Chief Financial Officer

Date: March 29, 2010

Section 906 Certifications

Pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Andrew E. Kersey, the President and Chief Executive Officer and Jeffery A. Baird, the Chief Financial Officer of CAS Medical Systems, Inc. (the “issuer”), do hereby certify that the report on Form 10-K accompanying this certification (the “report”) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 ((15 U.S.C. 78m or 78o(d)) and that information contained in the report fairly presents, in all material respects, the financial condition and results of operations of the issuer.

/s/ Andrew E. Kersey

Andrew E. Kersey
President and Chief Executive Officer
CAS Medical Systems, Inc.
March 29, 2010

/s/ Jeffery A. Baird

Jeffery A. Baird
Chief Financial Officer
CAS Medical Systems, Inc.
March 29, 2010