

FROM ONE, MANY

"From a limited number of manmade ceramic compositions, Ceradyne has developed a wide range of defense, industrial and commercial products.

If our ceramics could think, a Ceradyne boron carbide component wouldn't be sure, after it left our plant, whether it would be stopping bullets in armor, withstanding abrasive particles in an industrial piece of equipment, or absorbing neutrons for nuclear waste containment."

Joel P. Moskowitz, *Chief Executive Officer*

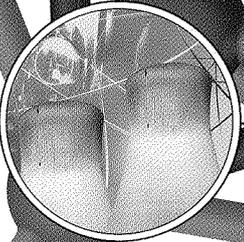
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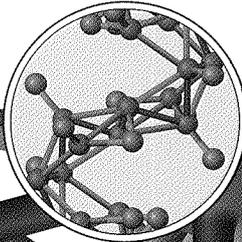
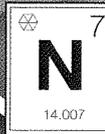
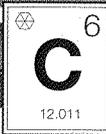
BORON CARBIDE (B₃C)
ARMOR



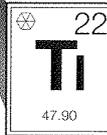
CLUSTERBORON® (B₁₀H₁₂)
SEMICONDUCTOR
ION IMPLANTATION



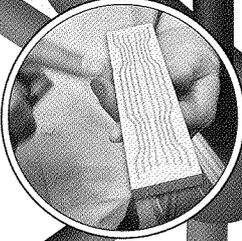
BORON CARBIDE (B₃C)
NUCLEAR



BORON NITRIDE (BN)
COATINGS



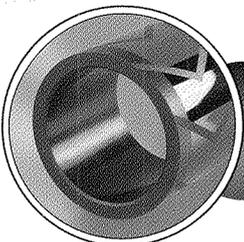
TITANIUM DIBORIDE (TiB₂)
ALUMINUM SMELTING



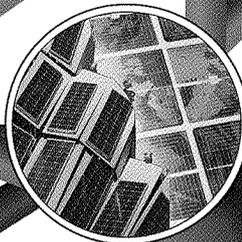
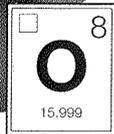
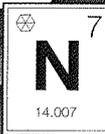
TITANIUM DIBORIDE (TiB₂)
EVAPORATION BOATS



FUSED SILICA CERAMIC (SiO₂)
SOLAR



SILICON CARBIDE (SiC)
FLUID HANDLING



SILICON NITRIDE (Si₃N₄)
DIESEL ENGINE COMPONENTS



Annual Report
2008

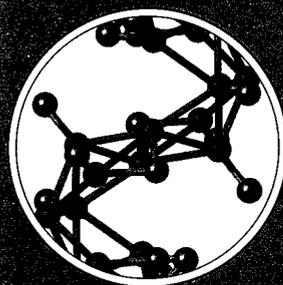
CONVICTED PRODUCTS

Ceradyne, Inc. develops, manufactures and markets advanced technical ceramic products and components for defense, industrial, automotive/diesel, commercial, semiconductor, solar energy, nuclear power, and other alternative energy applications.

The Company's expertise in ceramic material science, as well as a vertically integrated approach of internally designing much of its key equipment and controlling the manufacturing process from raw material powders to finished product, allows it to design and manufacture precision, high quality advanced technical ceramic products to meet demanding customer specifications. The Company markets its products to a broad range of industries in 63 countries.

Ceradyne products include lightweight ceramic armor, combat vehicle armor, ceramic crucibles for the solar industry, ceramic orthodontic brackets, diesel engine components, microwave tube parts, evaporation boats for metallizing, surface engineered components, industrial seals, fluid handling components, semiconductor equipment components, nuclear waste containment components, proprietary ceramic bearings, and materials used in precision investment casting.

Ceradyne serves a wide range of emerging markets from its domestic and international manufacturing locations and marketing offices.



On front cover and throughout this report, Ceradyne has depicted the atomic arrangement of its ClusterBoron® molecule B₁₈H₂₂, intended for semiconductor ion implantation.

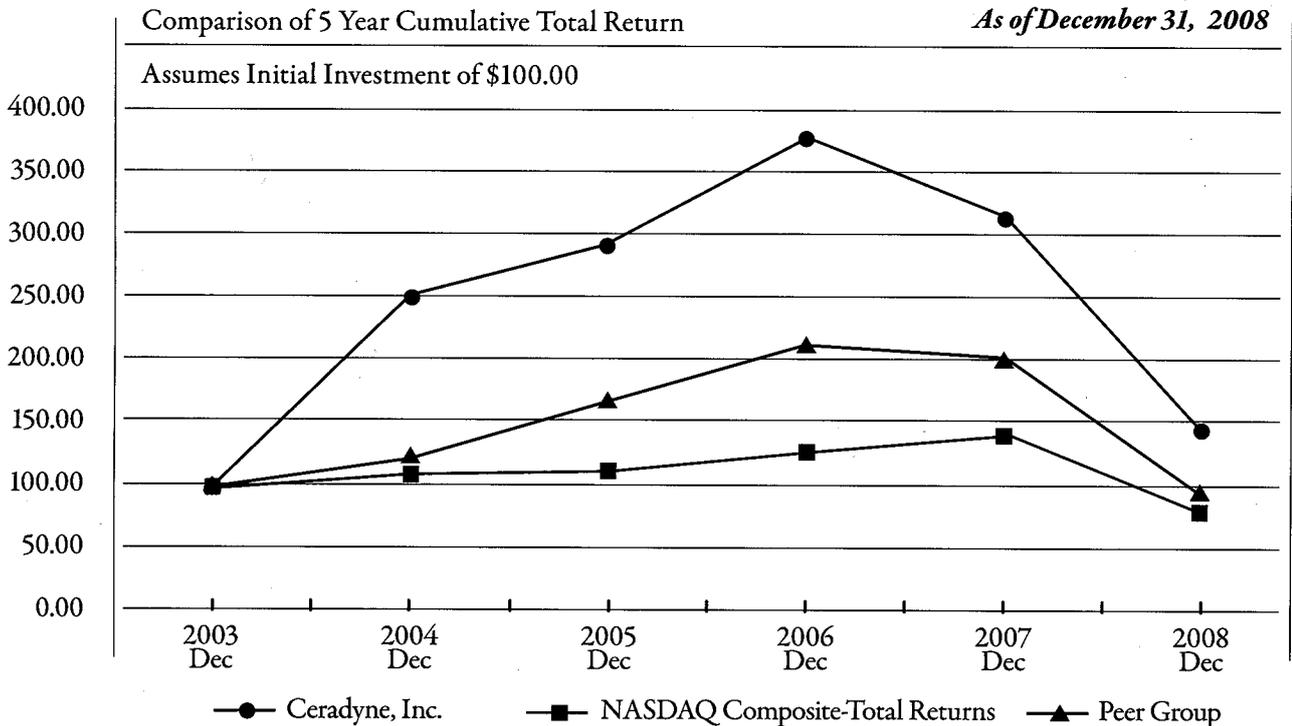
APR 29 2009

Washington, DC Years Ended December 31,

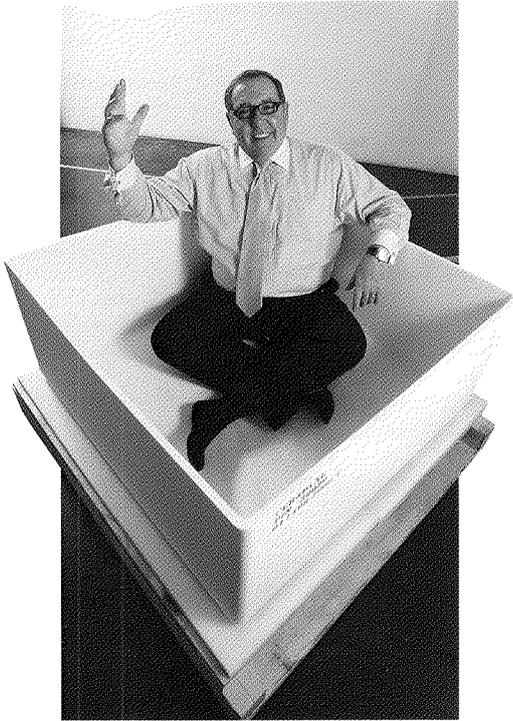
FINANCIAL HIGHLIGHTS

Amounts in thousands, except per share data		2008	2007	2006
For the Year	Net sales	\$680,197	\$756,835	\$662,388
	Income from operations	165,586	220,778	192,776
	Income from discontinued operations	164,615	220,520	191,539
	Provision for income taxes	57,875	82,278	66,155
	Net income	106,750	140,000	128,164
	Basic net income per share	4.04	5.29	4.77
	Diluted net income per share	4.00	5.20	4.69
	Working capital	400,835	353,923	332,063
	Total assets	\$54,997	\$53,286	\$43,815
	Total long-term debt	121,000	121,000	121,000
Stockholders' equity	\$62,076	\$62,920	\$106,611	

COMPANY STOCK / PERFORMANCE GRAPH



The above graph shows a comparison of the cumulative total return to stockholders of the Company, the Nasdaq Stock Market (U.S. Companies), and the Nasdaq stocks (SIC 3200-3299 U.S. Companies, stone, clay, glass and concrete products) from December 31, 2003 to December 31, 2008.



“As we enter the challenging year of 2009, several of our earlier efforts are beginning to bear fruit. One of the more exciting areas that we have pursued is the rapidly growing solar energy field. Shown here is a Ceradyne high purity fused silica ceramic ‘jumbo’ crucible capable of containing \$70,000 worth of molten polysilicon. We expect our solar related sales to increase 60% in 2009 and to increase at an estimated 30-35% growth rate per year over the next 5 years. This advanced technical ceramic core competency strategy has been the basis of our Company and we believe that it will continue to be.”

Joel P. Moskowitz

Chief Executive Officer, President, Chairman of the Board

LETTER TO OUR SHAREHOLDERS

It's been almost 25 years since Ceradyne completed its initial public offering (IPO) on NASDAQ under the symbol CRDN, at \$3.33 per share, adjusted for subsequent stock splits. And it's been almost 42 years since Ceradyne was founded with the grand total of \$5,000 in order to develop, manufacture and market state-of-the-art advanced technical ceramics. In 1967, Ceradyne began a journey that has led to its current position as a world class provider of advanced technical ceramics for military, industrial and consumer markets with 2,200 employees, 1.8 million square feet of manufacturing and office space, and net income of almost \$107 million in 2008 on revenues of over \$680 million. We have factories in California, Kentucky, Georgia, Massachusetts, Michigan, Oklahoma and Tennessee; Chicoutimi, Canada; Bazet, France; Kempten, Germany; Bangalore, India; and Tianjin, China.

From the very beginning, Ceradyne has focused on its core competency of advanced technical ceramics. This technology has enabled us to create products that are

used to hold molten silicon used to make photovoltaic solar cells; allow industrial pumps and other components to survive in severe abrasive and corrosive environments; absorb radioactive energy in order to provide safe, nuclear waste containment vessels; provide boron isotopes and “cluster molecules” for next generation computer chips; and help you look your best with our ceramic orthodontic brackets and our BORONEIGE® boron nitride cosmetic powders.

Our products also stop bullets and save lives, and in the last ten years, we shipped over \$1.5 billion of state-of-the-art military ceramic body armor. While we expect more modest body armor shipments going forward, we also anticipate demand from the U.S. military for improved versions of our current systems as well as substantive replacement orders for many years. We continue to expand our presence in the vehicle armor market as well.

From our first facility, we entered into a series of activities that have resulted in Ceradyne as it stands today.

Some of the highlights include:

ACQUISITIONS

1986

Semicon Associates (Lexington, Kentucky) Developer and manufacturer of ceramic impregnated dispenser cathodes for use in microwave tubes.

Ceradyne Thermo Materials (Scottsdale, Georgia) Developer and manufacturer of high purity fused silica ceramics for aerospace and solar applications.

2004

ESK Ceramics (Kempton, Germany) A large German primary producer of ceramic powders and industrial ceramic components founded in 1922. This acquisition allowed Ceradyne to effectively implement its vertical integration strategy for ceramic armor.

2007

Minco (Midway, Tennessee) A prime producer of high purity fused silica powder for use as the starting material for ceramics and investment precision casting molds. This acquisition allowed us to pursue our vertical integration strategy into the solar crucible business.

Ceradyne Boron Products (Quapaw, Oklahoma) One of only two or three separation towers capable of separating the Boron isotope ¹¹B (for semiconductor doping) from the Boron isotope ¹⁰B (for use in nuclear waste containment).

2008

Ceradyne Bearing Technology (Lexington, Kentucky) This acquisition of the proprietary ceramic bearing and bushing intellectual property is expected to establish Ceradyne as an innovative supplier of next generation bearings, particularly those used in down hole oil drilling.

SemEquip (North Billerica, Massachusetts) SemEquip and its B₁₈H₂₂ cluster molecule intellectual property, combined with Ceradyne's boron based technology, will have applications in next generation semiconductor devices.

Furthermore, we increased our manufacturing capacity

and geographical diversity through internally generated expansions, such as:

Lexington, Kentucky. In 2005, we established a 115,000 square foot factory for producing body armor plates and production volumes of silicon nitride.

Wixom, Michigan. In 2005, we established a 29,000 square foot military vehicle armor development and prototype facility in order to penetrate the growing armored vehicle market.

Chicoutimi, Canada. In 2006, we acquired the BORAL® nuclear waste containment system and relocated it to an 86,000 square foot factory in northern Quebec, Canada.

Atlanta (Scottsdale/Clarkston), Georgia. In 2007, we expanded our solar ceramic crucible line and installed a state-of-the-art ceramic missile nose cone factory.

Irvine, California. In 2007, we established a new manufacturing facility in Irvine, California. This 76,000 square foot plant employs Lean Manufacturing and a "5S" culture and is capable of assembling over 50,000 ceramic body armor plates per month.

Tianjin, China. In 2007, we completed the construction of a modern 98,000 square foot facility dedicated to state-of-the-art high purity fused silica ceramic crucibles (containers) used in the manufacture of polysilicon photovoltaic solar cells. We have recently announced further significant expansion in the Tianjin area.

Bangalore, India. In 2008, we entered into a lease to occupy a modest 12,000 square foot manufacturing facility to produce high volume ceramic orthodontic brackets. This is our first venture in India.

Now let's look at the numbers for 2008:

FINANCIAL HIGHLIGHTS

Sales for 2008 were \$680.2 million compared to \$756.8 million in 2007.

Net Income for 2008 was \$106.8 million or \$4.00 per fully diluted share compared to \$144.3 million or \$5.20 per fully diluted share in 2007.

Cash, Cash Equivalents and Short-Term Investments at December 31, 2008 were \$221.4 million compared to \$184.7 million at December 31, 2007.

Stockholders' Equity was \$628.1 million or \$23.56 per fully diluted share at December 31, 2008, compared to \$578.6 million or \$20.87 per fully diluted share at December 31, 2007.

Backlog at December 31, 2008 was \$126.4 million compared to \$238.9 million at December 31, 2007.

New Bookings in 2008 amounted to \$566.8 million compared to \$651.3 million in 2007.

Common Stock Repurchase Program. In 2008 the Company repurchased 1,578,237 shares of its common stock at an average price of \$28.33 per share under the \$100.0 million stock repurchase program authorized by our Board of Directors on March 4, 2008. Approximately \$55.3 million remains available under this program for additional share repurchases.

GOING FORWARD – 2009 & BEYOND

Ceradyne is not immune to the current decline in global economies. We view 2009, and possibly longer, as a challenging time with many uncertainties as well as opportunities. Although as of early March 2009 we had not received production delivery orders on the five year \$2.37 billion Indefinite Delivery/Indefinite Quantity (ID/IQ) ESAPI/XSAPI body armor award, we do expect delivery orders to be placed this year. Our goal of product diversity has been achieved and only about 50% of 2009 shipments are expected to be military dependent.

In Europe, where our ESK Ceramics operation derives most of its business, we are reducing our production and operating costs in order to mitigate expected reductions in volume.

Ceradyne management has always been, and will continue to be, pragmatic and hands on, looking at business as it is, not as we wish it to be. Our management team is experienced, having successfully managed in lean times as well as during the past five years of unprecedented growth.

A Positive Outlook

Yes, your Company will not be immune to a downturn in business, particularly our non-defense sectors, but I am quite optimistic because of the following:

Our Balance Sheet. For a company the size of Ceradyne, we have an extraordinarily strong and liquid balance sheet. We entered 2009 with over \$221 million in cash and short-term investments. In addition to the \$221 million, we have over \$24 million in “long-term investments,” which are illiquid auction rate securities.

It is this building block of cash plus assets that enables us to expand our operations, where warranted; continue R&D efforts in areas such as solar energy, military vehicle armor and aluminum smelting electrodes; and take advantage of targets of opportunity by making appropriate acquisitions.

Technology, Capacity and Management in Place.

From our outset in 1967, we have been and continue to be a technology-driven company. Many of our most senior officers have a technology background often related to advanced technical ceramics. Our technology is proven and our facilities and personnel have the capacity to produce:

- ▶ More than 50,000 ceramic body armor plates per month.
- ▶ In excess of 100,000 solar crucibles per year, with newer Ceradyne proprietary coating technology coming on line.
- ▶ Over 1,000 tons per year of our ceramic powders such as boron carbide and titanium diboride. Our huge melting furnaces in Germany produce over 35 tons per run. Additionally, we have significant intellectual property consisting of patents, trade secrets and know-how covering a wide array of compositions, processes and end uses, from the newest B₁₈H₂₂ ClusterBoron® technology to our crucible coating for polysilicon production for solar applications.

NEW MARKETS & PRODUCTS

Solar

A recent research report estimates a market for crucibles, such as Ceradyne's high purity fused silica ceramic crucible, of \$1.1 billion by 2013. In 2008 we sold \$40 million of crucibles, with a target for 2009 shipments of \$60 million or about 30% of the available market. The planned additional capacity in Tianjin, together with our in-house fused silica raw materials and the recently introduced proprietary pre-coated product, which increases quality and productivity, should allow us to increase our sales and possibly market share as the worldwide solar market continues to grow.

Military

Although we expect a more modest level of body armor shipments in future years, we believe that new threats on the battlefield and the projected multi-year war on terror (e.g., in Afghanistan) will continue to create demands for future lightweight ceramic body armor products. We are also engaged in early stage vehicle armor production programs with a number of original equipment manufacturers for new or modified military vehicles.

Oil

We have a number of products that are focused on heavy duty "down hole" oil drilling and oil extracting. The ceramic bearing technology we recently acquired includes a "stacked bearing" for oil drilling that may last many times longer than a conventional sealed bearing. At costs of \$2,000 an hour for down time, any improvement to the oil driller is worth a great deal of additional resources. Ceradyne is also working on a heavy duty ceramic filter for removing abrasive particles from oil as it is extracted. Both of these programs are in an early development stage but offer open-ended future markets.

Aluminum Smelting

We continue to work on replacing carbon cathodes in Hall-Heroult aluminum smelting cells with wetted cathodes containing Ceradyne titanium diboride. The recent decline in aluminum prices may act as an incentive for the smelters to implement new technology, or in these unsettled times, our new technology implementation could be postponed for a while.

Semiconductor Ion Implantation

The acquisitions of SemEquip in August 2008 and Ceradyne Boron Products in August 2007 allowed Ceradyne to supply the semiconductor industry with boron related specialty materials and gases. We supply boron trifluoride (BF₃) and high purity boron metal, and we are currently qualifying SemEquip's ClusterBoron®, ClusterCarbon™ and N-type dopants. The SemEquip acquisition also gives us a strong intellectual property position (77 U.S. patents issued and pending, and corresponding foreign patents issued and pending) on the next generation ClusterIon® materials. Although the semiconductor industry is currently depressed, the expanded use of new advanced materials for manufacturing almost all of today's electronic devices, and the need for advanced boron doping technologies for next generation semiconductor chips for applications, such as "smart" phones and touch screen devices, are anticipated to drive demand for more effective ion implantation. We believe SemEquip's cluster technology will be a contributor to solving the ion implantation challenges for these advanced semiconductor chips.

CONCLUSION

As I said, we see things as they are, not as we want them to be. Although 2009 will be challenging, I am confident of our success as we go forward. Ceradyne employees and our longstanding senior management team are anxious to get along with business and Ceradyne is well positioned financially for future growth. I'm looking forward to sharing with you our progress and new opportunities in our annual letter this time next year.

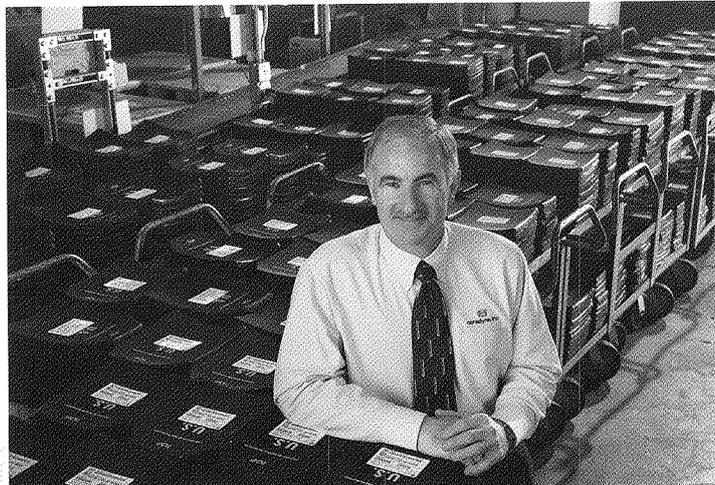
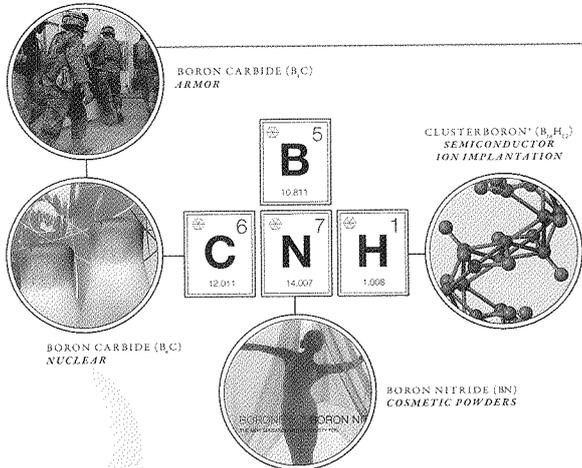
Very truly yours,

CERADYNE, INC.



Joel P. Moskowitz

Chief Executive Officer, President, Chairman of the Board

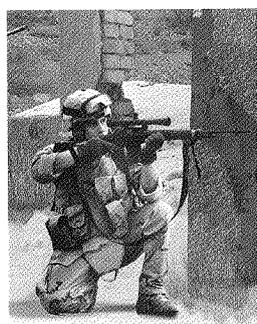


ARMOR

“Ceradyne’s Advanced Ceramic Operations have been the heart of the Company’s growth. Although much of this can be attributed to our world class lightweight ceramic body armor, our investments over the last few years in other advanced technical ceramic technologies and capabilities will allow us a

diversity of products and markets as we look to the near and longer term. I look to a promising as well as challenging future in growth markets such as alternative energy and industrial products requiring our rugged and long-lasting structural ceramics.”

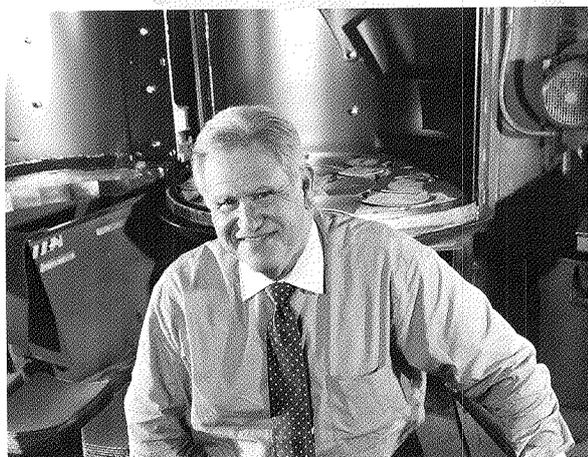
David P. Reed
President North American Operations



Shown above, Ceradyne’s Irvine, CA, armor assembly facility. Ceradyne can produce in excess of 50,000 lightweight ceramic armor plates per month through this modern facility.

Shown far left, American soldier engaged in combat with Ceradyne’s lightweight ceramic body armor. The Company believes that it has saved innumerable lives in America’s “war on terror.”

Shown left, extremely mobile, high velocity, lightweight combat vehicle utilizing Ceradyne’s lightweight ballistic armor components throughout. Ceradyne is working with a number of original equipment manufacturers (OEM) for next generation military vehicles as well as upgrades and repairs of the current fleet.



“Ceradyne has played a major role in saving American lives over the past five years. Its world class lightweight ceramic body armor will continue to protect our soldiers as we deploy them in other global areas in the war on terrorism. We also anticipate increasing demand for our metal, composite, and ceramic vehicle armor systems. Coordinating our efforts in both Michigan and California, we are involved in several large, multi-year military vehicle armor programs where we will support prime contractors in their efforts.”

Marc A. King
President Ceradyne Armor Systems, Inc.

SEMICONDUCTOR

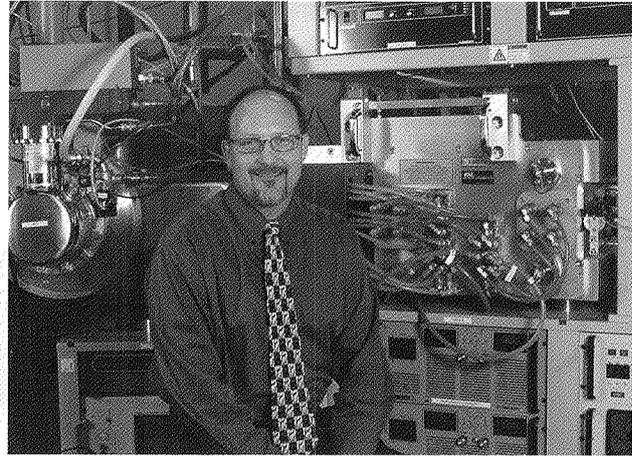
“Two relatively new areas for Ceradyne

are the use of our boron ceramics in nuclear applications as a neutron absorber, and in semiconductor applications as the source of the boron ion in next generation semiconductor chips.

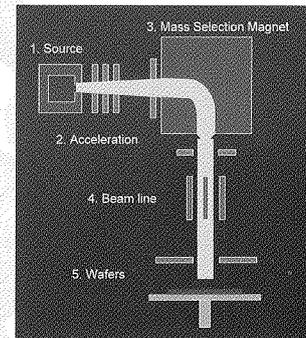
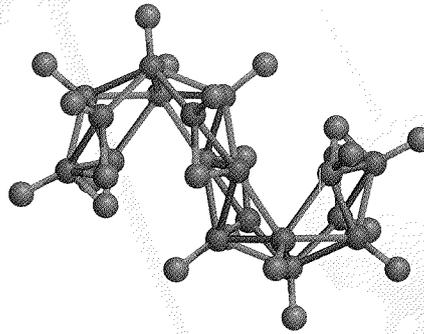
Our nuclear efforts are supported by our Ceradyne Canada nuclear waste containment shield operations, as well as by the isotope and chemical operations at Ceradyne Boron Products in Quapaw, Oklahoma.

Our semiconductor efforts include the chemical operations at Ceradyne Boron Products and are centered around the 2008 acquisition of SemEquip and its development of cluster molecules such as ClusterBoron® ($B_{18}H_{22}$), ClusterCarbon™, and N-Type dopants.”

Michael A. Kraft
Vice President Nuclear
& Semiconductor Business Units



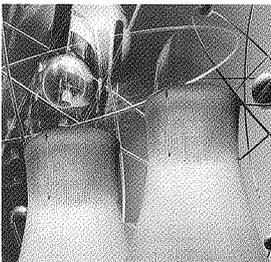
Shown below, schematic depicting Ceradyne's $B_{18}H_{22}$ which when ionized provides the necessary “doping” agents for the production of next generation semiconductor chips. Also, below right, is a diagram of an ion beam line which uses Ceradyne ClusterIons®.



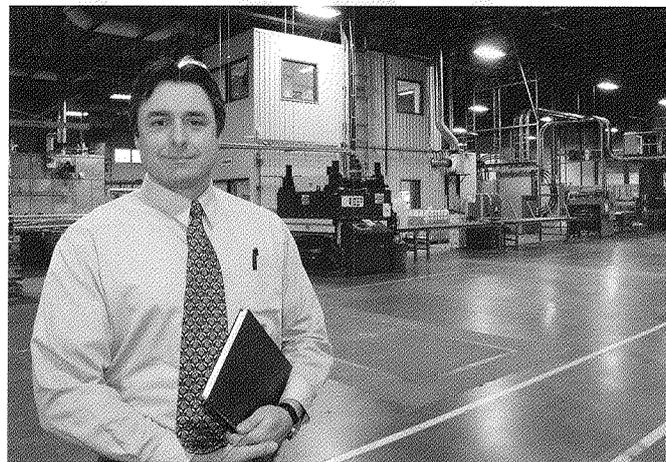
NUCLEAR

“Our Ceradyne Canada operation is

strategically located to develop and produce boron/aluminum components and composites for storing spent nuclear fuel rods. Recent U.S. decisions to maintain multiple, above-ground storage facilities represents a continuing opportunity for Ceradyne Canada's BORAL® and metal matrix composite cask materials. Additionally, our strategic location will allow us to service Canada's aluminum smelting industry as we promote titanium diboride as a carbon replacement in aluminum smelters.”

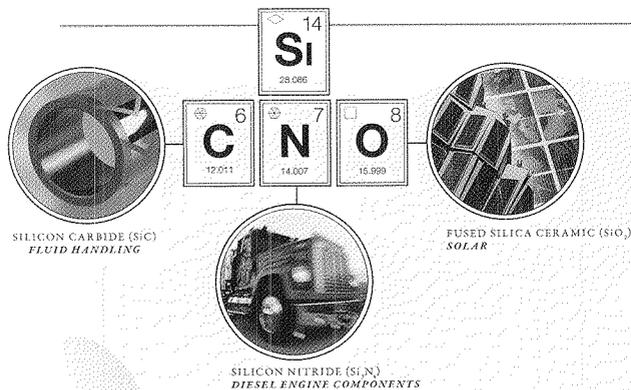


Eric Cantin
Director General Ceradyne
Canada



Shown above, Ceradyne's Chicoutimi, Canada, facility for producing nuclear waste containment structures primarily to store spent nuclear fuel rods.

Shown left, nuclear power reactor. Nuclear energy will be one of the alternative energy sources that the world will be implementing. Currently, there is an excess of 86,000 tons of spent nuclear fuel rods in the U.S.A. as well as other nuclear waste materials which must be stored in a safe manner.



SOLAR

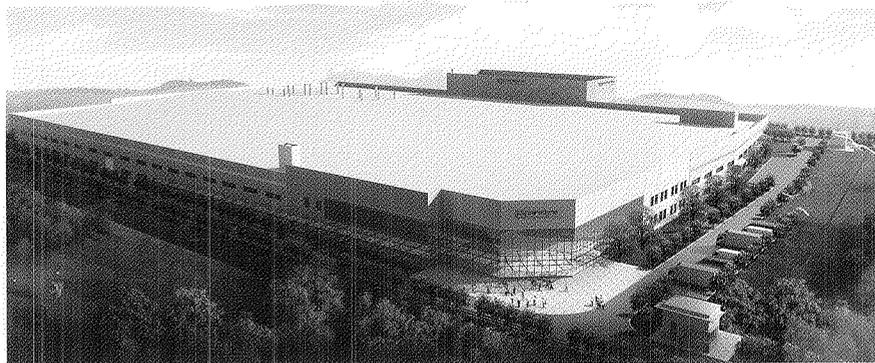
“I am excited about the future of

Ceradyne Thermo Materials, particularly as it relates to the growth of the polycrystalline silicon photovoltaic solar market. The acquisition of Minco in 2007 has enabled Ceradyne to continue to expand its strategy of vertical integration, in this case from high purity fused silica powder for non-reusable crucibles. Last year, we coordinated our efforts with the R&D program at Ceradyne’s ESK Ceramics facility in Kempton,

Germany. This has resulted in a proprietary interior coating that prevents the molten silicon from reacting with the crucible walls. This means higher purity, lower cost of production and an increase in efficiencies for our customers.

The new Tianjin, China, facility will allow us to meet anticipated worldwide demand late this year and for the next several years.”

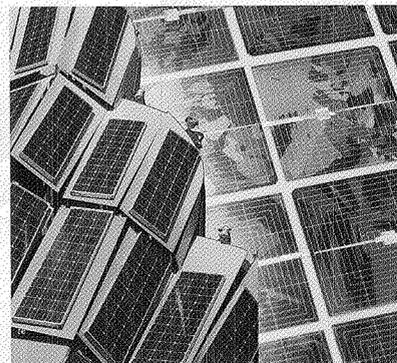
Bruce Lockhart
President Ceradyne Thermo Materials



Shown above, artist’s concept of Ceradyne’s new 200,000 sq. ft. facility located on the Company’s additional 13.7 acres in Tianjin, China. The combination of the facilities in China as well as its expanded plant in Scottdale, GA, will allow Ceradyne to participate in the anticipated significant increase in solar energy over the next few years.

Shown above, Ceradyne’s Scottdale, GA, facility currently producing its latest “jumbo” size crucibles, many of them with the new pre-coating proprietary technology.

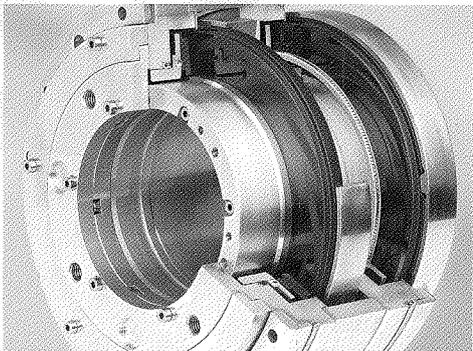
Shown right, depicts the wide range of solar energy from space components to components which can be put on ordinary household roofs. These solar panels convert the sun’s energy into usable electricity.



FLUID HANDLING

“Ceradyne’s ESK Ceramics facility here in Germany produces millions of silicon carbide seal rings, bushings and bearings annually for use in fluid handling pumps and other similar applications. Through automation and the implementation of Lean Manufacturing, we believe that we produce the finest fluid handling components in the world. We expect this market will continue to grow directly with our industrial base. Although the short-term future is uncertain, we believe that this base market, together with our surface engineered fasteners, will find increasing applications not only in Europe but globally.”

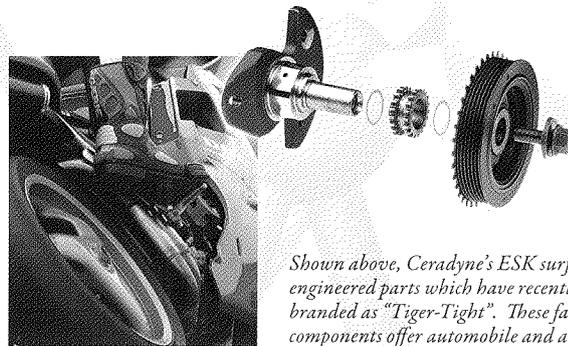
Barbara Schaaf
ESK Ceramics Vice President Sales & Marketing



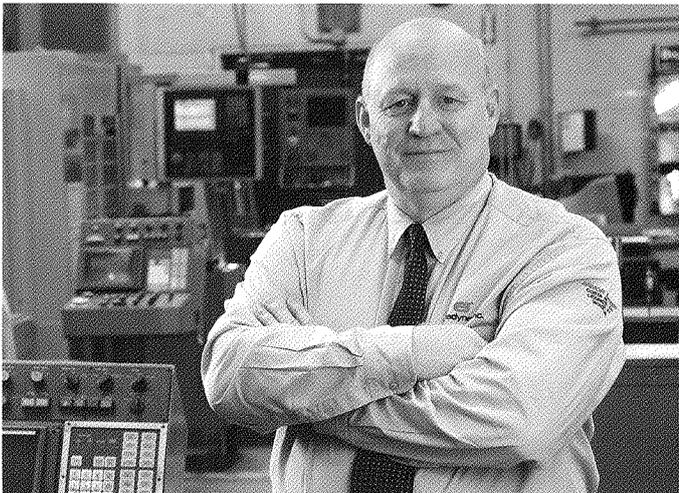
EKasic® T seal rings in a John Crane dry gas seal for turbo machinery applications; photo courtesy of John Crane.



SURFACE ENGINEERING

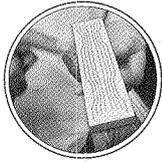


Shown above, Ceradyne’s ESK surface engineered parts which have recently been branded as “Tiger-Tight”. These fastener components offer automobile and aerospace customers the ability to achieve holding power of threefold ordinary fasteners at a lighter weight with very thin components.



“The concept of utilizing silicon nitride ceramics as diesel engine components is not new. The combination of a ceramic’s lightweight, hardness and abrasion and corrosion resistance make it an ideal substitute for steel. Ceradyne is currently producing in excess of 100,000 components a month for these applications. We will now be promoting the product for new applications not only in the United States, but in Europe and Asia as well.”

Kenneth R. Morris
Vice President Operations



TITANIUM DIBORIDE (TiB)
EVAPORATION BOATS



TITANIUM DIBORIDE (TiB)
ALUMINUM SMELTING



ALUMINUM SMELTING

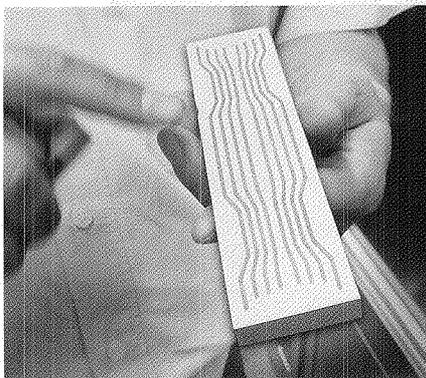
“Ceradyne’s 2004 acquisition of ESK

Ceramics in Kempten, Germany, has allowed us to expand our operations in areas such as silicon carbide fluid handling components, boron nitride cosmetic powder, and major capital investments in equipment and buildings. Although our industrial markets are experiencing economic slowdowns along with the global economies, we have worked out our strategy and will continue to develop and market our products for both existing and future markets here in Europe and the United States, as well as globally. We are also selectively integrating our efforts with those of our colleagues in America. The development of the proprietary solar crucible coating is an outstanding example

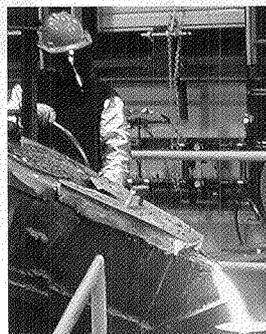
of this cooperation. Another area where we are making progress is the integration of our non-defense sales and marketing efforts with Barbara Schaaf here in Germany responsible for worldwide efforts.

A new product that we continue to focus on is the incorporation of our titanium diboride as a substitute for carbon in the cathode in the Hall-Heroult aluminum smelting furnaces. Although full production may be years in the future, the proven concept and economics, we believe, will drive this new technology forward. Given our extensive capabilities to fuse non-oxide powders, we also believe that as this market develops, ESK will be the leader.”

Thomas Juengling, Ph.D.
President ESK Ceramics



Shown above, Ceradyne evaporation boat which is used to create metallic vapors, such as aluminum, to coat various films, particularly packaging materials in the food industry.

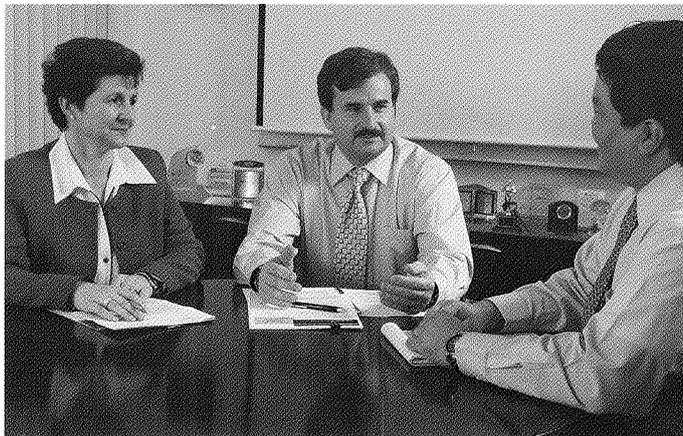


Shown left, a foundry producing molten metals and alloys. Ceradyne’s boron nitride is often used as a coating in these processes. Additionally, Ceradyne has developed an electrically conductive ceramic, titanium diboride, for use as a replacement for the more commonly used carbon in the aluminum smelting process.

FINANCIALS

“The job here in the Finance Department

at Ceradyne continues to grow in order to deal with the growing complexity of both our Company and the economy. Our successful operating history, acquisitions, and particularly our December 2005 follow-on offering and convertible bond issuance, have resulted in Ceradyne being in an unusually strong financial position as we assess the short and longer term outlook. In addition to managing our large cash position, Ceradyne’s Finance Department has embarked on a number of activities designed to further strengthen the structure and discipline in the Company in total as well as coordinating the efforts of our many operating entities. The recent 2008 commitment to implement SAP® throughout all our operations is an ambitious and worthwhile venture that will allow us to grow in a controlled manner, reduce costs and operate more efficiently.”



Anna Pojawa
Sr. Corporate Accountant /
Financial Reporting

Jerrold J. Pellizzon
Chief Financial Officer

Cary M. Okawa
Corporate Controller

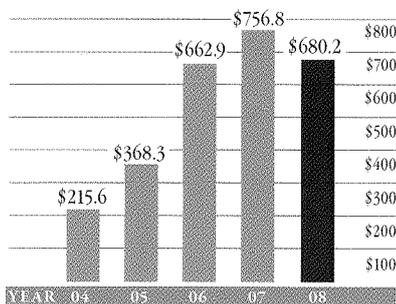
Jerrold J. Pellizzon, Chief Financial Officer

“The Ceradyne finance staff has committed itself to not only build its financial reporting infrastructure on systems such as Kronos® and SAP®, but to ensure that there are open and transparent communications among all our operations in order to meet the reporting requirements of a public company, particularly those mandated by the U.S. Securities and Exchange Commission and Sarbanes-Oxley regulations. Our continued investment in technology will also enable us to further optimize our internal controls and the processing of financial transactions throughout the Company.”

Cary M. Okawa, Corporate Controller

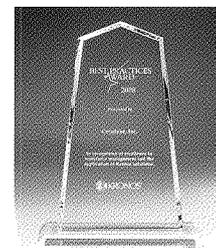
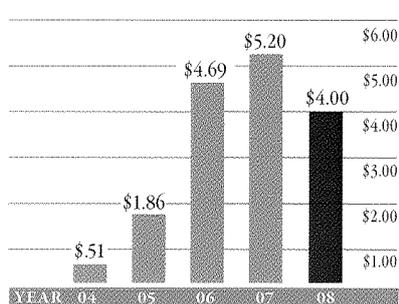
SALES

(\$ in Millions)



EARNINGS PER SHARE

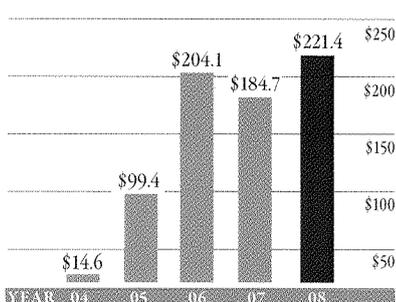
(Fully Diluted)



Ceradyne was recently selected by Kronos Incorporated for its Best Practices Award in recognition of excellence in workforce management and the application of Kronos’ solutions.

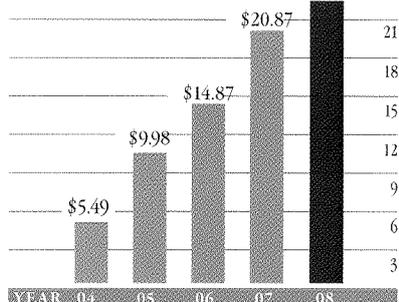
CASH & SHORT TERM INVESTMENTS

(\$ in Millions)



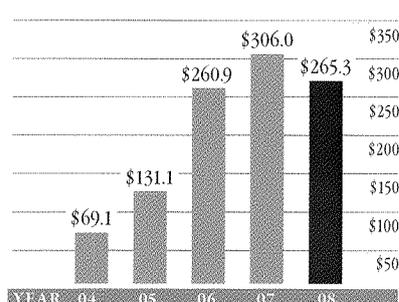
BOOK VALUE

(Per Fully Diluted Shares)



GROSS PROFIT

(\$ in Millions)



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SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

(Mark One)

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

For the fiscal year ended December 31, 2008

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

For the transition period from _____ to _____

Commission file number 000-13059

CERADYNE, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

33-0055414

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

3169 Red Hill Avenue, Costa Mesa, California

(Address of principal executive offices)

92626

(Zip Code)

(714) 549-0421

(Registrant's telephone number, including area code)

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

Title of Each Class:

Name of Each Exchange on Which Registered:

Common Stock, par value \$0.01 per share

The NASDAQ Stock Market LLC

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

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act of 1933. YES NO

Indicate by check mark whether the registrant is not required to file reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934. YES NO

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

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

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
(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

The aggregate market value of registrant's common stock held by non-affiliates as of June 30, 2008 (the last business day of registrant's most recently completed second fiscal quarter) was approximately \$855.1 million.

As of February 21, 2009, there were 25,835,650 shares of registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE: Portions of registrant's definitive proxy statement for its annual meeting of stockholders to be held on June 9, 2009 are incorporated by reference into Part III of this Form 10-K.

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PART I

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K includes 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. Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as statements containing the words “believe,” “expect,” “will,” “anticipate,” “intend,” “estimate,” “project,” “plan,” “assume” or other similar expressions, or negatives of those expressions, although not all forward-looking statements contain these identifying words. All statements contained in this report regarding our future strategy, future operations, projected financial position, estimated future revenues, projected costs, future prospects, the future of our industries and results that might be obtained by pursuing management’s current plans and objectives are forward-looking statements.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on the information currently available to us and speak only as of the date of the filing of this report. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking statements, and such difference might be significant and materially adverse to our security holders. We do not undertake and specifically decline any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this report in Item 1A under the caption “Risk Factors,” in Item 7 under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and in Item 7A under the caption “Quantitative and Qualitative Disclosures About Market Risk,” all of which you should review carefully.

ITEM 1. BUSINESS

Introduction

We develop, manufacture and market advanced technical ceramic products, ceramic powders and components for defense, industrial, automotive/diesel and commercial applications.

In many high performance applications, products made of advanced technical ceramics meet specifications that similar products made of metals, plastics or traditional ceramics cannot achieve. Advanced technical ceramics can withstand extremely high temperatures, combine hardness with light weight, are highly resistant to corrosion and wear, and often have excellent electrical capabilities, special electronic properties and low friction characteristics.

Our products include:

- lightweight ceramic armor for soldiers and other military applications;
- ceramic industrial components for erosion and corrosion resistant applications;
- ceramic powders, including boron carbide, boron nitride, titanium diboride, calcium hexaboride, zirconium diboride and fused silica, which are used in manufacturing armor and a broad range of industrial products and consumer products;
- evaporation boats for metallization of materials for food packaging and other products;
- durable, reduced friction, ceramic diesel engine components;
- functional and frictional coatings primarily for automotive applications;

- translucent ceramic orthodontic brackets;
- ceramic-impregnated dispenser cathodes for microwave tubes, lasers and cathode ray tubes;
- ceramic crucibles for melting silicon in the photovoltaic solar cell manufacturing process;
- ceramic missile radomes (nose cones) for the defense industry;
- fused silica powders for precision investment casting (PIC);
- neutron absorbing materials, structural and non-structural, in combination with aluminum metal matrix composite that serve as part of a barrier system for spent fuel wet and dry storage in the nuclear industry, and non-structural neutron absorbing materials for use in the transport of nuclear fresh fuel rods;
- nuclear chemistry products for use in pressurized water reactors and boiling water reactors;
- boron dopant chemicals for semiconductor silicon manufacturing and for ion implanting of silicon wafers; and
- ceramic bearings and bushings for oil drilling and fluid handling pumps.

Our customers include the U.S. government, prime government contractors and industrial, automotive, diesel and commercial manufacturers in both domestic and international markets.

The principal factor contributing to our growth in sales from 2002 through 2007 was demand by the U.S. military for ceramic body armor that protects soldiers. This demand was driven by recognition of the performance and life saving benefits of utilizing advanced technical ceramics in lightweight body armor and by military conflicts in Iraq and Afghanistan. Shipments of the current generation of ESAPI (enhanced small arms protective inserts) body armor for the U.S. Army (our largest body armor customer), represented 28.4% of our total revenues in 2008 compared to 40.3% in the prior year and 50.2% of our total body armor shipments in 2008 compared to 57.0% of our total body armor shipments in the prior year. These shipments were made against a \$747.5 million adjusted value Indefinite Delivery/Indefinite Quantity (ID/IQ) contract awarded to us in August 2004, and represent the final deliveries against that contract.

In October 2008, we were awarded an Indefinite Delivery/Indefinite Quantity contract by the U.S. Army for the next ballistic threat generation of ceramic body armor plates, known as XSAPI, as well as for the current generation of ESAPI plates. This five-year contract has a maximum value of \$2.3 billion. However, we anticipate that the government will order either XSAPI or ESAPI, but not both. Therefore, the total amount of this ID/IQ award likely will not exceed \$1.1 billion over the life of the contract. Delivery orders under this contract have been delayed due primarily to a protest by one of our competitors. Because of this delay, we expect that initial production quantity delivery orders under these ID/IQ contracts will not be issued until March 2009 or later. Since it is our policy to include in backlog only delivery orders with firm delivery dates, our backlog at December 31, 2008 does not include any amounts under this ID/IQ contract.

Our sales also increased from 2004 through 2007 because of our acquisition of ESK Ceramics in August 2004, our acquisition of Minco, Inc. in July 2007, our acquisition of EaglePicher Boron, LLC in August 2007, which we renamed Boron Products, LLC, and the recent expansion of our operations into China. Our sales declined in 2008 primarily because of a reduction in shipments of body armor.

As a result of the ESK acquisition, we believe that we are the only ceramic body armor manufacturer with a vertically integrated approach of designing much of our key equipment and controlling the manufacturing process from the principal raw material powder to finished product.

Our Minco operation manufactures fused silica powders for a wide range of industrial applications and is a key supplier of this raw material to our Thermo Materials division. Our Boron Products operation produces the boron isotope ¹⁰B. This isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant neutron radiation critical control. Boron Products also produces complementary chemical isotopes used in the normal operation and control of nuclear power plants, and the

boron isotope ^{11}B , which is used in the semiconductor manufacturing process as an additive to semiconductor grade silicon as a “doping” agent and where ultra high purity boron is required.

In June 2008, we purchased certain assets and technology related to proprietary technical ceramic bearings used for “down hole” oil drilling and for coal bed methane pumps and steam assisted oil extraction pumps. These assets and the intellectual property were acquired from a privately-owned business located in Greenwich, Rhode Island. This operation, which we now call Ceradyne Bearing Technology, has been relocated to our Lexington, Kentucky, facility. These bearings and pumps incorporate ceramic parts supplied by our ESK Ceramics subsidiary.

In August 2008, we acquired SemEquip, Inc., a late-stage startup technology company located in Billerica, Massachusetts. SemEquip develops and markets “cluster molecules” such as $\text{B}_{18}\text{H}_{22}$ for use in the ion implantation of boron (B) in the manufacturing of semiconductors. SemEquip owns a portfolio of approximately 130 issued patents and pending patent applications.

We believe that numerous applications for ceramic products and technology have the potential to drive long-term growth of our business. Examples of applications for which we have developed or are currently developing products include:

- lightweight ceramic armor for military vehicles, boats and aircraft;
- ceramic components that have the potential to facilitate the extraction of oil from oil sands on a cost-effective basis;
- ceramic materials that have the potential to reduce significantly the cost of producing molten aluminum;
- chemical micro reactors, heat exchangers and hydraulic trim valves produced with our proprietary technology that have the potential to provide an economical substitute for steel in extreme environments;
- high purity fused silica ceramic crucibles used by several photovoltaic cell manufacturers in their silicon melting operation in order to produce polycrystalline silicon storage containers;
- storage containers made with our boron carbide powder that have the potential to be used for long-term containment of nuclear waste from nuclear power plants;
- small complicated ceramic components made using our injection molding technology that have the potential to be used as medical implants;
- ceramic bearing and bushing assemblies designed for longer life due to their rugged construction and the erosion, corrosion and lubricity characteristics of the ceramic bearing surface; and
- cluster chemicals such as $\text{B}_{18}\text{H}_{22}$ and cluster ion implantation hardware required to facilitate the manufacture of advanced semiconductor chips.

To meet increasingly higher performance standards, advanced technical ceramics have stringent technical manufacturing requirements. We have designed and customized our facilities and capital equipment to enhance our advanced technical ceramic manufacturing processes. We have also implemented lean manufacturing initiatives to lower costs and drive further efficiencies in our manufacturing processes, and are expanding our facilities to add manufacturing capacity.

We conduct our operations through six operating segments: our Advanced Ceramic Operations division, our ESK Ceramics subsidiary, our Semicon Associates division, our Thermo Materials division, our Ceradyne Canada subsidiary and our Boron segment, which is comprised of our Boron Products and SemEquip subsidiaries.

Advanced Technical Ceramics

Evolving customer requirements in industrial processing, military systems, microwave electronics, automotive/diesel engine products and orthodontics have generated a demand for high performance materials with properties not readily available in metals, plastics or traditional ceramics. The following table compares favorable typical properties of selected advanced technical ceramics with those of other selected materials.

<u>Materials</u>	<u>Melting Point (Degrees Fahrenheit)</u>	<u>Hardness (Vickers Scale)</u>	<u>Chemical Resistance to Acids</u>	<u>Electrical Properties</u>	<u>Density (Grams per Cubic Centimeter)</u>
Advanced technical ceramics . . .	2,500 to 6,900	Up to 3,200	Excellent	From excellent insulators to conductors	2.5 to 4.5
High strength alloy steel	2,500 to 2,700	Up to 900	Fair	Conductors	7.0 to 9.0
High performance plastics	275 to 750	Up to 10	Good to Excellent	Good to excellent insulators	1.0 to 2.0

Ceramics such as earthenware, glass, brick and tile have been made for centuries and are still in common use today. The inertness and lasting qualities of ceramics are illustrated by artifacts uncovered intact in modern times. Almost all traditional ceramics, including those of ancient times, were based on clay. In the last fifty years, significant advances have been made in ceramic technology by applying specialized manufacturing processes to produce synthetic ceramic powders. Developments in aluminum oxide and other oxides resulted in ceramics that were excellent electrical insulators and were capable of withstanding high temperatures. In addition, industry advancements in ceramic material science have led to the development of a class of ceramics that are generally non-oxides, such as carbides, borides and nitrides. These non-oxide ceramics generally have mechanical properties that exceed those of oxide ceramics developed in prior periods. Collectively, these developments resulted in the ability to manufacture ceramics with great strength at elevated temperatures and reduced fragility, historically a primary limitation of ceramics. The products that have emerged from these advances are known as advanced technical (or structural) ceramics.

The properties of advanced technical ceramics present a compelling case for their use in a wide array of modern applications. However, to meet increasingly higher performance standards, advanced technical ceramics have stringent technical manufacturing requirements. First, manufacturers must start with fine synthetic ceramic powders of very high and consistent quality that are produced using a highly technical and specialized manufacturing process. Few suppliers of these high quality starting powders exist today and not all of these suppliers can consistently produce starting powders of the necessary quality and consistency in the volumes required by ceramic manufacturers. Second, the specialized equipment required to manufacture advanced technical ceramics must often be custom designed and is not readily available, requiring a significant investment in capital equipment and facilities to allow volume production. Manufacturing costs associated with the production of these ceramics are higher than those of the materials they replace. A portion of these costs is related to the need for diamond grinding finished components to exacting tolerances. To accelerate the use of advanced technical ceramics as a direct replacement for metals, plastics or traditional ceramics, these manufacturing costs need to be reduced. Cost reduction efforts include the production of blanks or feed stock to "near net shape" configurations in order to reduce the amount of diamond grinding needed. Manufacturers are also seeking to reduce costs through the use of high volume automated processing and finishing equipment and techniques, and to achieve economies of scale in areas such as powder processing, blank fabrication, firing, finishing and inspection.

Our Solution

We develop, manufacture and market advanced technical ceramic products, ceramic powders and components for defense, industrial, automotive/diesel and commercial applications. The table on the following pages illustrates some of the solutions we have designed to meet market opportunities and demands.

<u>Market Opportunity</u>	<u>Demands of the Market</u>	<u>Our Solution</u>
	Defense	
Lightweight ceramic body armor and boron carbide powders	Due to the proliferation of automatic weapons in tactical operations and terrorist conflicts, it has become necessary for vests or other armor to stop machine gun bullets while being light enough in weight to allow freedom of movement without undue fatigue.	We have developed lightweight bullet resistant ceramic body armor solutions, including SAPI (small arms protective inserts), ESAPI (enhanced small arms protective inserts), ESBI (enhanced side ballistic inserts) and other systems. These products generally consist of hot pressed Ceralloy® 546 (boron carbide) or hot pressed Ceralloy® 146 (silicon carbide) and other ceramic coupled with backings such as Dyneema®, Spectra Shield® or Kevlar® purchased from third parties. Our subsidiary, ESK Ceramics, is a major manufacturer of boron carbide powders, which are used by us and our competitors to manufacture lightweight ceramic body armor.
Lightweight ceramic armor for military ground-based vehicles, boats and aircraft	Military ground-based vehicles, boats and aircraft require protection against automatic weapons. Weight, cost and vehicle compatibility are critical technical parameters.	We have developed a series of lightweight, cost effective ceramic armor systems and attachment mechanisms that have multi-hit protection at various threat levels and can be added to an existing vehicle or designed into new vehicles, boats and aircraft.
Missile radomes (nose cones)	Defensive tactical missile systems such as the PAC-3 (Patriot Advanced Capability) are designed to fly at extremely high velocities, survive tight turning radii and operate in severe weather conditions. These operating conditions preclude the use of conventional polymer materials for radomes.	We have developed advanced technical ceramic radomes made of fused silica ceramics which meet certain specifications of these tactical defensive missile systems, and have developed a modified silicon nitride radome for more demanding requirements. We have also established a precision diamond grinding capability to finish these radomes.

Market Opportunity	Demands of the Market	Our Solution
Advanced ceramic structural parts	<p style="text-align: center;">Industrial</p> <p>Applications such as high performance pump seals, blast nozzles, chemical processing, and pulp and paper manufacturing, require components with corrosion and wear resistant properties, mechanical strength, hardness, favorable friction properties and the ability to withstand extreme temperature fluctuations.</p>	We have developed products for each of these applications which have excellent wear resistant properties, lightness, hardness and the ability to withstand extremely high temperatures. We manufacture these products using primarily our EKasic® silicon carbide, silicon nitride and boron carbide ceramic.
Boron compounds and metallurgy	Increasing productivity requirements in primary industries are met with boron nitride powders, which are used as high temperature lubricants and release agents. As filler material in polymers and silicones, boron nitride is used for heat conducting and insulating films in the electronic industry. Aluminum and steel foundries increasingly require consumables with longer lifetimes to improve their overall efficiencies.	In the aluminum extrusion industry, boron nitride powder, spray or suspension is used as a release agent to keep the hot metal away from the extrusion die. In furnace and high temperature applications it is used as an insulation sleeve or support for graphite heaters. Boron nitride's largely inert behavior towards molten metals makes it an ideal material for applications in direct contact with such materials. We supply break rings for horizontal continuous casting and side-dams for thin strip casting. We also supply high density and high purity silicon nitride products for aluminum-foundries worldwide.
Evaporation boats	Packaging materials used for snack and other food products are often lined with an aluminum coating to preserve shelf life. The coating, or metallization, process requires a tool, called an evaporation boat, which can withstand the high temperature and corrosiveness of melted aluminum.	We have developed evaporation boats, typically made using boron nitride/titanium diboride, that can withstand direct contact with highly corrosive liquids, such as melted aluminum. These evaporation boats are used in the metallization of various surfaces, including paper, plastic and glass.

Market Opportunity	Demands of the Market	Our Solution
Industrial equipment requiring critical protection against severe wear or corrosion	Failure of industrial equipment is often caused by premature wearing out of surfaces due to abrasive action. An example is paper making equipment where the pulp slurry runs at 5,000 feet per minute.	Sintered reaction bonded silicon nitride (SRBSN) industrial wear parts are designed to replace hard metal or oxide ceramic wear surfaces, resulting in greater productivity, quality and longer uptime. Our proprietary advanced technical ceramic side dams are used in the production of steel in the continuous casting process.
Photovoltaic (solar cell) manufacturing requiring crucibles for melting silicon	In order to produce cost effective solar cell components, it is necessary to melt silicon in a crucible or vessel that will be able to contain the molten silicon yet not allow unwanted chemicals to contaminate the melt.	We have developed a high purity fused silica ceramic crucible (receptacle) which is being used by several photovoltaic cell manufacturers in their silicon melting operation in order to produce polycrystalline silicon. We also manufacture the fused silica powders that are a key material for the production of our ceramic crucibles.
Radioactive waste management and nuclear chemistry products	Increasing stockpiles of radioactive nuclear waste require materials that can be used to safely transport and store items such as spent nuclear fuel rods. New and existing nuclear power plants also require materials capable of containing neutron radiation during day-to-day operations.	The boron atom in boron carbide powder is able to capture neutrons, thus reducing the radioactive risk associated with transportation and storage of nuclear waste. Our Boral® product line, which consists of a hot-rolled sheet containing a core of uniformly distributed boron carbide and aluminum particles that is enclosed within layers of pure aluminum, forms a solid and effective barrier for the storage of nuclear waste. We also manufacture the boron isotope ¹⁰ B in its pure form. This isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant neutron radiation critical control. We also produce complementary chemical isotopes used in the normal operation and control of nuclear power plants.

<u>Market Opportunity</u>	<u>Demands of the Market</u>	<u>Our Solution</u>
Semiconductor silicon wafer manufacturing requiring ^{11}B isotopes	Silicon based semiconductor devices require 'p' dopants to move the electrons through the electronic materials.	We produce the boron isotope ^{11}B which is used in the semiconductor wafer manufacturing processes as an additive to semiconductor grade silicon as a "doping" agent and where ultra high purity boron is required.
Materials for precision investment casting	The market is demanding lower cost, thinner molds and faster mold build times.	We have developed fused silica refractory blends that enable the production of highly efficient, single-use mold systems for precision investment casting.
Ceramic bearings, bushings and seals for fluid handling	In order to make an effective transition in fluid handling pumps from the pump itself to the exterior, it is necessary to have an interface with excellent friction and erosion and corrosion properties.	We have developed a number of primarily silicon carbide compositions and shapes for a wide variety of precision components for use in contact with rotational elements in fluid handling pumps. These are produced primarily by our ESK Ceramics subsidiary in Kempten, Germany, and Bazet, France.
Specially designed heavy duty bearings and bushings	It is necessary to maintain the position and integrity of heavy duty rotational shafts in down hole oil drilling and/or water pumps in severe environments.	In June 2008, we acquired a series of proprietary designs for heavy duty "stacked bearings" and bushings which utilize our advanced technical ceramic sliding surface interface.
In converting silicon wafers to semiconductors, it is necessary to introduce atoms of the element boron into the silicon matrix.	The market has developed and generally utilizes technology known as ion implantation. Starting materials used in ion implantation such as BF_3 have been generally utilized for many years. However, as the requirements for higher current semiconductor chips increase and the number of chips per unit area on the silicon wafer increases, there is a need for ion implantation which improves the manufacturing throughput of high boron content in semiconductor chips.	Our acquisition of SemEquip, Inc. in August 2008 brought to Ceradyne the intellectual property for the "cluster" molecule $\text{B}_{18}\text{H}_{22}$ as well as other cluster molecules. These materials are designed to increase the productivity of the ion implantation technology in part due to the large numbers of atoms such as boron.

Market Opportunity	Demands of the Market	Our Solution
	Automotive/Diesel	
Heavy-duty diesel truck engines	In order to achieve diesel engine life of 500,000 miles or more without major maintenance, and to meet current environmental requirements, it may be necessary to replace metal engine components with longer lasting, lighter weight, lower friction ceramic parts at acceptable unit costs.	Our SRBSN ceramic cam rollers replace conventional steel cam rollers in order to allow diesel engines to run at higher internal pressures and thus meet environmental and other requirements.
Wear-resistant functional and frictional coatings, surface engineered components	Engines generate extreme vibration during operation that can cause components joined by nuts and bolts to loosen. Traditionally, locknut washers have been used for this application.	Our wear-resistant functional and frictional coatings utilizing entrapped hard particles, primarily diamonds, are applied to shims in lieu of using locknut washers. These coatings increase the static friction coefficient and minimize the effects of vibration and allow more economic and efficient designs of engines, particularly in the auto industry.
	Commercial	
Orthodontic brackets	Traditional stainless steel orthodontic brackets are often considered unsightly. Substitute clear plastic materials can be weak and may stain. Some orthodontic patients prefer aesthetically pleasing brackets which can be affixed to each tooth to support the arch wire.	Our translucent ceramic orthodontic brackets are inert, reveal the color of the patient's teeth, and allow the orthodontist to correct the patient's bite. Our marketing partner, 3M Unitek, sells this translucent ceramic bracket under the brand name Clarity™.
BORONEIGE® boron nitride powder	The cosmetic industry utilizes very fine, white, silky, smooth powders as a base for a wide range of products including lipstick, eye shadow, facial creams, rouge and other related products. There is an increasing demand for these base materials which can make up to forty percent of the end product. Generally, the requirements include white color, controlled chemistry and surface area.	Boron nitride, which is made by our ESK Ceramics subsidiary, is a well controlled micro structure white powder. The use of our unique boron nitride called BORONEIGE® is anticipated to grow as the availability of the base powders and the use of various cosmetic products increase.

Our Competitive Strengths

We believe that several aspects of our company provide us a competitive advantage in the markets we serve, including the following:

Broad Technical Expertise in Ceramic Material Science. Since the founding of our company in 1967, our core business has been researching, developing, designing, manufacturing and marketing advanced technical ceramic products. Specifically, our expertise is in a class of ceramics known as non-oxide structural ceramics. Many of our staff are technically trained, including 148 employees with degrees in ceramic engineering or related sciences, of which 32 have Ph.D. degrees. We have continuously sought to develop and manufacture innovative ceramic products not only for the markets that we currently serve but to identify and apply our experience and capabilities to emerging markets and applications. For example, our expertise allows us to develop ceramic armor products expeditiously and manufacture them on a significant scale.

Proprietary Equipment and Manufacturing Processes. The specialized equipment required to manufacture ceramic powders and advanced technical ceramics must often be custom designed and is not readily available. Over the past several decades, we have designed and constructed a substantial array of highly specialized and customized equipment and manufacturing processes, including our hot press lines and furnaces. We believe our custom equipment and manufacturing processes allow us to meet the high volume demands of our customers in the markets that we serve.

Vertically Integrated Manufacturer. We are a vertically integrated manufacturer of lightweight ceramic body armor and other ceramic products such as crucibles for photovoltaic solar cell manufacturing. Our ESK Ceramics subsidiary manufactures boron carbide powder — the key raw material used in the production of our body armor. ESK Ceramics has been a supplier of boron carbide powder to us for over 30 years. We form the boron carbide powder into ceramic armor plates using our own furnaces and hot presses. We then apply backing materials purchased from third parties to the plates to complete a ceramic body armor system ready to ship to our customers. Owning a source of our principal raw material, together with our manufacturing capacity at our Lexington, Kentucky plant, should allow us to fulfill current and anticipated demand for our ceramic body armor, while enabling us to manage our costs, product yields and high quality standards. Our acquisition of Minco, Inc. in 2007 provided Ceradyne with its own source of fused silica ceramic powders, which are the primary raw material in the manufacturing of crucibles (receptacles) used in the manufacturing of photovoltaic solar cells. The crucibles are used as the container for melting large (450 kilogram) ingots of silicon. Recently, we internally developed a proprietary hard ceramic coating designed to act as a barrier between the molten silicon and the Ceradyne crucible.

Strong Position in Multiple Markets. We maintain a strong position in many of the markets that we serve. We believe that we are the leading supplier of lightweight ceramic personnel armor products to the U.S. government based on the history of orders that the U.S. government has issued. We further believe that we supply a significant portion of products in many of the markets we serve including: boron carbide powders; translucent ceramic orthodontic brackets; ceramic missile radomes, commonly known as nose cones, for the PAC-3 missile program; sintered reaction bonded silicon nitride, which we call SRBSN, for industrial and automotive applications; evaporation boats used to apply the metallic coating to packaging materials; and wear resistant functional and frictional coatings for the automotive industry. We believe that our leadership position in ceramic body armor and in many of the other markets that we serve provides us with a key advantage in securing new and continuing business. Additionally, we believe that our EKasic® (silicon carbide) product line of industrial pump seals and bearings allows us to be a leader in fluid handling products.

Key Customer Relationships. We have longstanding relationships with many of our significant customers in the defense, industrial, automotive/diesel and commercial markets that we serve, which have enhanced our ability to obtain business over time. For example, for more than 20 years we have sold our advanced technical ceramic products to various agencies of the U.S. government. Since 2003, we have derived the majority of our revenues from the Army, Marines, Air Force and other branches of the U.S. military. We possess significant knowledge of the applicable purchasing requirements and product specifications within each of the branches of the U.S. military that we serve, and we believe that we have established an excellent reputation with key individuals within each branch.

Experienced Management Team and Entrepreneurial Culture. Our success is attributable in large part to the extensive knowledge and experience of our management team and key personnel. Our executive management team has substantial experience in advanced technical ceramic materials science and our Chief Executive Officer, our President of North American Operations and our Vice President of Operations each has more than 25 years of experience in the ceramics industry. Our management team has demonstrated its ability to identify, execute and integrate strategic acquisitions into our business through our acquisitions of ESK Ceramics in August 2004, Quest Technology in May 2004, a boron carbide/aluminum cladding product line known as Boral® in June 2006, Minco, Inc. in July 2007, EaglePicher Boron, LLC in August 2007, assets and intellectual property related to heavy duty “stacked bearings” and bushings in June 2008, and SemEquip, Inc. in August 2008. Moreover, we believe that the entrepreneurial culture that has been fostered at Ceradyne since 1967 enhances our ability to develop innovative products for the markets that we serve.

Our Business Strategy

Our goal is to create value for our stockholders by profitably developing, manufacturing and selling advanced technical ceramic components to customers in existing and new markets where there is a need for new materials that will increase the efficiency, productivity and life of our customers’ end products. Key elements of our strategy for achieving this goal include:

Capitalizing on Opportunities in the Defense Market. The current geopolitical climate, terrorist threats and heightened international conflicts such as those in Iraq and Afghanistan, have been the primary factors driving demand for our defense products. Our defense marketing and sales efforts emphasize sales of ceramic body armor for military personnel to the U.S. government and, with the authorization of the U.S. government, to foreign allies of the United States. We also intend to expand our lightweight ceramic armor products to address additional body armor applications as well as new defense applications in vehicles, boats and aircraft. In response to a solicitation notice from the U.S. military, we have developed a new generation of body armor that is capable of withstanding higher ballistic threats than current versions with approximately the same product weight.

Continuing to Increase our Non-Defense Revenue Base. We plan to continue to grow our non-defense customer base, primarily through promoting existing products to new customers and developing new products for new and existing customers. We focus on educating our current and potential customers on the advantages of our advanced technical ceramics compared to alternative solutions, and assisting them in developing advanced technical ceramic components for existing or new products and applications. Our technical and marketing staff educates our customers through direct sales visits, by preparing technical papers and product literature, and by participating in technical conferences, trade shows and exhibitions. Based on these efforts, we believe there is an opportunity to further expand the use of advanced technical ceramic products. For example, we are working with 3M Unitek on developing the next generation of translucent ceramic orthodontic brackets. We also are working with companies in the aluminum industry on utilizing ceramic materials in their next generation smelting production processes that have the potential to reduce the cost of producing aluminum. We also intend to further increase our customer, product and market base by converting certain advanced technical ceramics, originally developed for defense applications, to industrial and commercial applications. In addition to organically growing our product portfolio and market reach, we plan to continue to identify strategic acquisition opportunities that broaden our product lines within industrial and commercial markets. For example, a key strategic reason for our acquisitions of ESK Ceramics, the Boral® product line, Minco, Inc. and EaglePicher Boron, LLC., as well as the expansion of our operations into Canada and China, were to further increase our non-defense revenue base. Our acquisition of SemEquip, Inc. in August 2008 is intended to allow us to broaden our participation and position us to participate in future semiconductor markets. SemEquip’s development of cluster molecules such as B₁₈H₂₂ may be a key in the manufacture of next generation high current semiconductor devices. Our acquisition in June 2008 of certain assets and intellectual property related to heavy duty “stacked bearings” and bushings provides Ceradyne with a new product line of relatively large, rugged ceramic bearings and bushings. These components will be used in severe environments such as “down hole” oil drilling and submersible fluid handling pumps.

Identifying New Products and Markets. We intend to identify new products and markets to meet evolving customer requirements for high performance materials. Due to the special properties of the advanced technical ceramics we produce, we believe there are numerous applications and markets for such materials. Our research and development efforts have identified several new applications for advanced technical ceramics in both existing markets, such as the defense industry, and new markets, including the energy, metals production and chemical industries. Such new applications include lightweight ceramic armor for military vehicles, boats and aircraft; ceramic components that have the potential to facilitate extraction of oil from oil sands on a cost-effective basis; ceramic materials that have the potential to reduce significantly the cost of producing molten aluminum; chemical micro reactors, heat exchangers and hydraulic trim valves produced with our proprietary technology that have the potential to provide an economical substitute for steel in extreme environments; storage containers made with our boron carbide powder that have the potential to be used for long-term containment of nuclear waste from nuclear power plants; and small complicated ceramic components made using our injection molding technology that have the potential to be used as medical implants. We also expect to continue to benefit from the addition of ESK Ceramics' expertise in ceramic powders and products, which has expanded the scope and scale of our product development efforts.

Investing to Improve our Gross Margins and Manufacturing Efficiencies. We focus on cost containment, productivity enhancements and manufacturing efficiencies as a means to drive earnings growth. We have implemented lean manufacturing initiatives, such as Demand Flow® Technology and 5-S plus Safety in order to reduce inventories, scrap and queue times and to increase productivity. Additionally, we continue to evaluate opportunities to employ automation and dedicated work cells to expand our in-line production efficiency. We also continue to seek ways to reduce our manufacturing costs by evaluating opportunities to relocate or expand manufacturing operations within the United States as well as internationally. For example, in 2004, we began expanding our high energy-utilization manufacturing processes at our new Lexington, Kentucky facility, where the cost of electricity, which comprises a significant portion of our cost of product sales, is substantially lower than in California. We plan to evaluate strategic manufacturing relationships in international markets, including joint ventures or acquisitions, particularly in low cost manufacturing areas such as Mexico and China. We completed the construction in June 2007, of a new approximately 98,000 square foot facility in Tianjin, China for the manufacture of ceramic crucibles which are used for melting silicon in the photovoltaic solar cell manufacturing process. We are increasing this capacity and will start construction during 2009 of an approximately 200,000 square foot facility in Tianjin, China for the manufacture of ceramic crucibles. We also plan to develop strategic relationships with other manufacturing companies or key customers whose expertise or financial resources can assist us in accomplishing our objectives. We initiated a major improvement to our data and information technology systems with the implementation of SAP enterprise software applications. It is our intention to integrate the use of SAP software throughout our Company with a target completion date of December 2011.

Market Applications and Products

Our products are sold into four principal markets: defense, industrial, automotive/diesel and commercial. The following is a description of our principal products by market application:

Defense

Lightweight Ceramic Armor. We have developed and currently manufacture lightweight ceramic armor capable of protecting against threats as great as 12.7 millimeter armor piercing machine gun bullets. Compared to traditional steel armor plates, our ceramic armor systems offer weight savings as great as 40%. Using hot pressed Ceralloy® ceramic, our armor plates are laminated with either Spectra Shield®, Dyneema®, Kevlar™, fiberglass, custom hybrid laminates or aluminum, and formed into a wide variety of shapes, structures and components. Initially, our manufactured ceramic armor was used principally for military helicopter crew seats and airframe panels. We are now also a major supplier of lightweight ceramic body armor for the U.S. military, and lightweight ceramic armor for military helicopters. We are also a supplier of armor systems for military vehicles.

Boron Carbide Powders. We manufacture boron carbide powder, which is the principal raw material used in the production of our lightweight ceramic body armor. Our ESK Ceramics subsidiary is one of the world's leading manufacturers of this material. ESK Ceramics has been a supplier of boron carbide powder to us for over 30 years and periodically supplies our ceramic body armor competitors.

Missile Radomes (Nose Cones). We manufacture conical shaped, precision machined ceramic radomes which are designed for the front end of defensive missiles. These radomes are used where missile velocities are high and operating environments are severe, and the thermal shock and erosion resistance, high strength and microwave transparency properties of advanced technical ceramics are required. Our ceramic radomes are used on the PAC-3 (Patriot Advanced Capability) missile and various future missile system prototypes.

Industrial

Fluid Handling/Wear Parts. We supply products made primarily of our EKasic® silicon carbide, silicon nitride and boron carbide, which have excellent wear resistant properties, lightness, hardness, and can withstand extremely high temperatures. Products furnished are used in high performance pump seals, bearings for fluid handling, blast nozzles and chemical processing.

Boron Compounds and Metallurgy Ceramics. Boron nitride powders have excellent release properties and are highly resistant to wear and corrosion. These powders are used in the forming and bending of glass, as an additive in refractory materials, and as a lubricant for aluminum extrusion. Our silicon nitride products have excellent thermal shock resistance and temperature stability up to 1,200° Centigrade. These products are used for transportation of liquid aluminum, for use in low and high pressure casting and in liquid aluminum processes.

Evaporation Boats. Our evaporation boats are used in the metallization of various surfaces such as plastic, paper or glass. Metallization is a process based on the deposition of a metallic vapor under vacuum to coat a substrate surface with a thin layer of aluminum, zinc, copper or silver. The preferred metal for the metallizing process is aluminum. Evaporation boats have direct contact with highly corrosive molten metal alloys and are made out of a boron nitride/titanium diboride composite material. These products provide packaging manufacturers the ability to apply vaporized aluminum to packaging material that as a finished product helps to preserve and maintain the shelf life of food products.

Industrial Wear Components. Our industrial wear components are made primarily of our Ceralloy® 147 sintered reaction bonded silicon nitride (SRBSN). These SRBSN ceramic components are generally incorporated in high wear areas of industrial machinery where severe abrasive conditions would otherwise wear out vital components. Our wear resistant parts are used to replace parts made of materials such as tungsten carbide or ceramics such as aluminum oxide. Applications include paper making equipment, abrasive blasting nozzles, metal cutting tool inserts as well as custom products.

Radioactive Waste Management. Boron carbide powder has a high cross-section for capturing neutrons, making it an ideal material for the management of radioactive nuclear waste from nuclear power plants. Typical applications include use in neutron absorbing parts, such as control rods in nuclear power plants, and nuclear shielding in the storage and transportation of nuclear waste materials. Our Boral® product line, which consists of a rolled sheet containing a core of uniformly distributed boron carbide and aluminum particles that is enclosed within layers of pure aluminum, forms a solid and effective barrier for the storage of nuclear waste. We also produce the boron isotope ¹⁰B. This isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant neutron radiation critical control.

Ceramic-Impregnated Dispenser Cathodes. We manufacture ceramic-impregnated dispenser cathodes for microwave tubes used in radar, satellite communications, electronic countermeasures and other applications. Dispenser cathodes, when heated, provide a stream of electrons which are magnetically focused into an electron beam. Microwave dispenser cathodes are primarily composed of a porous tungsten matrix impregnated with ceramic oxide compounds. The use of ceramic-impregnated cathodes reduces the amount of energy necessary to create a high level of electron emissions. Our ceramic-impregnated cathodes are also used in ion lasers and cathode ray tubes.

Tempered Glass Furnace Components and Metallurgical and Industrial Tooling. Fused silica ceramic does not, to any material extent, expand when heated or contract when cooled. This material is therefore used for industrial tooling components and molds where complicated shapes and dimensions are maintained over a wide range of temperatures. Such applications include forming and shaping titanium metal used in aircraft manufacture. Other applications take advantage of fused silica's excellent thermal shock resistance and inertness when in contact with glass. We have the capability to make fused silica ceramic rollers up to 14 feet in length used in glass tempering furnaces.

Fused Silica Ceramic Crucibles. We manufacture fused silica ceramic crucibles, or receptacles, which are used in the fabrication of polycrystalline silicon for photovoltaic solar cells that convert sunlight into electricity. These crucibles are designed to withstand high temperatures and thermal shock when in contact with molten silicon, without contaminating the melt. In 2008 we introduced a proprietary hard ceramic coating to line the crucible's interior.

Precision Ceramics. We manufacture a variety of hot pressed Ceralloy® ceramic compositions that are precision diamond ground to exacting tolerances, primarily for microwave tube applications. The interior cavities of microwave tubes often require microwave absorbing ceramic components capable of operating at elevated temperatures and in high vacuums.

Samarium Cobalt Permanent Magnets. We manufacture and market our samarium cobalt magnets as components primarily for microwave tube applications. Electron beams in microwave tubes generated by the dispenser cathodes described above can be controlled by the magnetic force provided by these powerful permanent magnets. The magnets are generally small sub-components of microwave traveling wave tubes.

Boron Isotopes and Molecules for the Nuclear Industry. We enrich and manufacture the boron isotope ¹⁰B which is a material that is used by the nuclear power industry. The ¹⁰B isotope is critical to the safe operations of the U.S. nuclear power industry, waste storage, and the stability and safe-keeping of nuclear weapons.

Boron Isotopes for Semiconductors. We produce the boron isotope ¹¹B, which is used in the semiconductor manufacturing process as an additive to semiconductor grade silicon as a "doping" agent and where ultra high purity boron is required. With our acquisition of SemEquip, Inc. in August 2008, we now produce the cluster boron molecule B₁₈H₂₂ for next generation semiconductor devices.

Precision Investment Casting Products. We manufacture fused silica grains and powder products that are used in precision investment casting (PIC), a highly sophisticated manufacturing process used to make a wide range of precision dimensioned castings for a broad base of different industries. The process requires low expansion materials for one time use in the casting process. Our products include proprietary blends that reduce our customers' cast and cycle time.

Heavy Duty Bearings. In June 2008, we acquired the proprietary rights for a series of heavy duty rugged ceramic bearing components for down hole oil drilling and various water pump applications. The unique designs are intended to extend the life of drilling equipment by reducing premature failures during operations.

Automotive/Diesel

Wear-Resistant Functional and Frictional Coatings. We manufacture our EKagrip® Foils for wear-resistant functional and frictional coatings for fastener applications utilizing entrapped hard particles, primarily diamonds. This product line increases the static friction coefficient, minimizes the effects of vibration and allows more economic and efficient designs of engines, particularly in the auto industry.

Diesel Engine Components. We have been manufacturing ceramic cam rollers for heavy-duty diesel engines since 1999, and now have production contracts to supply cam rollers to several major engine companies. However, an original equipment manufacturer that had been using our ceramic cam rollers, developed a new diesel truck engine that was introduced in 2007 to meet new environmental regulations. This new engine is designed to use steel cam rollers rather than our more expensive ceramic cam rollers. Consequently, sales of our cam rollers to this manufacturer declined beginning in 2007 and we expect further

declines through 2009. We also supply a fuel systems manufacturer with components for a diesel fuel pump. In addition, we are engaged in development projects with a number of other diesel engine and fuel pump systems manufacturers worldwide for various ceramic components.

Commercial

Ceramic Orthodontic Brackets. In orthodontics, to correct a patient’s tooth alignment, usually a small stainless steel bracket is attached to each tooth. These brackets provide a guide to the archwire, which is the wire that sets into each bracket. The cosmetic appearance of this metal is often considered unattractive. Together with 3M Unitek, we have developed a ceramic bracket which 3M Unitek markets to orthodontists under the brand name Clarity™. The translucency of this ceramic bracket, together with the classic ceramic properties of hardness, chemical inertness and imperviousness, result in a cosmetic substitute for traditional stainless steel brackets. These brackets reveal the natural color of the patient’s teeth while performing the structural functions of traditional stainless steel brackets. We have recently developed and manufacture a next generation ceramic orthodontic bracket which 3M Unitek sells under the brand name Clarity SL™.

BORONEIGE® Boron Nitride Powder. We manufacture and market to the cosmetic industry a very fine, white, silky, smooth powder called BORONEIGE®, which is used as a base for a wide range of products including lipstick, eye shadow, facial creams, rouge and other related products.

Operating Segments and Facilities

We serve our markets through six segments with manufacturing facilities in several locations across the United States, one in Canada, one in China, and two locations in Europe — Germany and France. The following table includes a summary of our facilities and products comprising our six operating segments.

Operating Segment and Facility Location	Products
<p><i>Ceradyne Advanced Ceramic Operations</i></p> <p>Costa Mesa and Irvine, California⁽¹⁾ Approximately 240,000 square feet</p> <p>Lexington, Kentucky⁽²⁾ Approximately 115,000 square feet</p> <p>Wixom, Michigan⁽³⁾ Approximately 29,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Lightweight ceramic armor <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceralloy® 147 SRBSN wear parts • Precision ceramics <p><i>Automotive/Diesel Applications:</i></p> <ul style="list-style-type: none"> • Ceralloy® 147 SRBSN automotive/diesel engine parts <p><i>Commercial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic orthodontic brackets • Components for medical devices
<p><i>ESK Ceramics</i></p> <p>Kempton, Germany⁽⁴⁾ Approximately 599,000 square feet</p> <p>Bazet, France⁽⁵⁾ Approximately 88,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Boron carbide powders for body armor <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic powders: boron carbide, boron nitride, titanium diboride, calcium hexaboride and zirconium diboride • Silicon carbide parts • Evaporation boats for the packaging industry • High performance fluid handling pump seals <p><i>Automotive/Diesel Applications:</i></p> <ul style="list-style-type: none"> • EKagrip® functional and frictional coatings <p><i>Commercial Applications:</i></p> <ul style="list-style-type: none"> • BORONEIGE® boron nitride powder for cosmetics

Operating Segment and Facility Location	Products
<p><i>Ceradyne Semicon Associates</i> Lexington, Kentucky⁽⁶⁾ Approximately 35,000 square feet</p>	<p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic-impregnated dispenser cathodes for microwave tubes, lasers and cathode ray tubes • Samarium cobalt magnets
<p><i>Ceradyne Thermo Materials</i></p> <p>Scottdale and Clarkston, Georgia⁽⁷⁾ Approximately 225,000 square feet</p> <p>Tianjin, China⁽⁸⁾ Approximately 98,000 square feet</p> <p>Midway, Tennessee⁽⁹⁾ Approximately 105,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Missile radomes (nose cones) • High purity fused silica used to manufacture missile radomes (nose cones) <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Glass tempering rolls • Metallurgical tooling • Castable and other fused silica products • Crucibles for photovoltaic solar cell applications • Turbine components used in aerospace applications
<p><i>Ceradyne Canada</i></p> <p>Chicoutimi, Canada⁽¹⁰⁾ Approximately 86,000 square feet</p>	<p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Boral® structural neutron absorbing materials • Metal matrix composite structures
<p><i>Boron</i></p> <p>Quapaw, Oklahoma⁽¹¹⁾ Approximately 128,000 square feet</p> <p>North Billerica, Massachusetts⁽¹²⁾ Approximately 26,000 square feet</p>	<p><i>Industrial Applications:</i></p> <p>Nuclear Applications:</p> <ul style="list-style-type: none"> • Nuclear chemistry products for use in pressurized water reactors and boiling water reactors • Radioactive containment for use in spent fuel transport and storage • Burnable poisons for coating of uranium fuel pellets <p>Semiconductor Applications:</p> <ul style="list-style-type: none"> • Cluster molecules such as B₁₈H₂₂ for ion implantation for next generation P-dopants • Ionization chambers for ionizing cluster molecules for ion implantation • Development of cluster ion implantation sub-systems • Advanced ion source materials for the manufacture of logic and memory chips

(1) We have leases on our facilities in Costa Mesa, California, aggregating approximately 99,000 square feet, all of which expire in October 2010. We own our 40,000 square foot facility in Irvine, California. In Irvine, California, we occupy a 24,000 square foot facility under a lease that expires in April 2009 and a 76,000 square foot facility under a lease that expires in April 2011.

(2) We own our facility in Lexington, Kentucky.

(3) We have a lease on our Wixom, Michigan facility which expires in April 2010.

(4) We own our facility in Kempten, Germany, as well as the 28-acre property on which our facility is located.

(5) We own our facility in Bazet, France, as well as the four-acre property on which our facility is located.

(6) We own our facility in Lexington, Kentucky, as well as the five-acre property on which our facility is located.

- (7) We own an 85,000 square foot facility in Scottdale, Georgia, as well as the five-acre property on which our facility is located. We have a lease on our 140,000 square foot facility in Clarkson, Georgia which expires in June 2013.
- (8) We own our facility in Tianjin, China, as well as the four-acre property on which our facility is located.
- (9) We own our facility in Midway, Tennessee as well as the 40-acre property on which our facility is located.
- (10) We own our facility in Chicoutimi, Quebec, Canada, as well as the seven-acre property on which our facility is located.
- (11) We own our facility in Quapaw, Oklahoma as well as the 155-acre property on which our facility is located.
- (12) We lease our facility in North Billerica, Massachusetts.

Sales, Marketing and Customers

Each of our six operating segments maintains a separate sales and marketing force promoting its individual products. As of December 31, 2008 we had 100 employees directly involved in sales and marketing, including 63 sales and marketing personnel located outside the United States. We also have agreements with manufacturers' representatives in foreign countries who are compensated as a percent of sales in their territory. Sales to customers located outside the United States represented approximately 27.0% of our net sales in 2008, 18.0% in 2007 and 15.9% in 2006.

We continue to explore various domestic and international relationships to increase our sales and market penetration. We seek long-term relationships such as multi-year agreements or exclusive relationships with our customers to achieve a more consistent and predictable flow of orders and shipments.

We sell products and components to the U.S. government and government agencies, as well as to government contractors, original equipment manufacturers and to end users. The U.S. government and government agencies collectively represented approximately 61.8% of our net sales in 2008, 71.6% in 2007 and 73.4% in 2006.

We sell our translucent ceramic orthodontic brackets, commonly known as braces, only to 3M Unitek. Sales to 3M Unitek represented approximately 1.5% of our net sales in 2008, 1.7% in 2007 and 1.6% in 2006. In December 2005, we entered into a new supply agreement with 3M Unitek that expires in December 2010, and which may be extended by 3M Unitek at its option for an additional two years. This new agreement replaced our original, March 1986 joint development and supply agreement with 3M Unitek. 3M Unitek is a major manufacturer of stainless steel orthodontic brackets and, early in our relationship, shared with us the functional specifications and properties which ceramic brackets would be required to satisfy. With this information and our experience with translucent ceramics in defense applications, we developed, and in 1987 began manufacturing, translucent ceramic brackets. Under the original supply agreement, 3M Unitek was required to purchase ceramic orthodontic brackets exclusively from Ceradyne until September 2007. Under the terms of the new agreement, 3M Unitek will continue to purchase 100% of their Clarity and Transcend brand ceramic orthodontic product lines exclusively from us for as long as 3M Unitek continues to sell such products. The new agreement further stipulates that Unitek must purchase from Ceradyne at least 50% of the ceramic orthodontic brackets 3M Unitek requires for next generation designs, which it introduced in 2007.

Manufacturing Processes

We employ a number of advanced technical ceramic manufacturing processes that enable us to deliver high quality products designed to meet specific customer requirements. The processes used to manufacture our principal products are described below.

Hot Pressing. Our hot pressing process is generally used to fabricate ceramic shapes for lightweight ceramic armor. We have designed and constructed induction heated furnaces capable of operating at temperatures exceeding 4,000°F in inert atmospheres at pressures up to 5,000 pounds per square inch. With this equipment, we can fabricate parts more than 26 inches in diameter, which is considered large for advanced technical ceramics. Using multiple cavity dies and special tooling, we can produce a number of parts in one furnace during a single heating and pressing cycle.

Our raw materials are fine powders procured from our ESK Ceramics subsidiary, as well as from several outside suppliers. After we process them, the powders are either loaded directly into the hot pressing molds or are shaped into pre-forms prior to loading into the hot pressing molds. The powders are placed in specially prepared graphite tooling, most of which we machine to shape. Heat and pressure are gradually applied to the desired level, carefully maintained and finally reduced. The furnace is then removed from the press and allowed to cool, permitting the press to be used with another furnace. For most products, this cycle takes approximately 20 hours. The resultant ceramic product generally has mechanical, chemical and electrical properties of a quality approaching theoretical limits. Almost all products, other than armor, are then finished by diamond grinding to meet precise dimensional specifications.

Ceramic Powders (Boron Carbide TETRABOR®, Boron Nitride, Titanium Diboride, Calcium Hexaboride, Zirconium Diboride). We purchase raw materials like carbon, boric acid and oxides from outside vendors. These raw materials are converted into the final formulation in large high temperature processes using an arc furnace. After the resultant material is cooled, it is broken down into fine particulates that are then purified through a chemical treatment. The next process is the production and classification of various grain sizes. The manufacturing processes result in a very high and consistent quality powder. The resulting finished ceramic powder products are used in a wide range of applications, such as ceramics and powders for abrasives, armor, neutron absorption and refractories.

Sintering and Reaction Bonding of Silicon Nitride (SRBSN). The sintering of reaction bonded silicon nitride results in our Ceralloy® 147 SRBSN, which is used in industrial and automotive/diesel applications. This SRBSN process begins with relatively inexpensive high purity elemental silicon (Si) powders, which contrasts sharply with some other competitors' manufacturing techniques which start with relatively more expensive silicon nitride (Si₃N₄) powders.

After additives are incorporated by milling and spray drying, the silicon powders are formed into shapes through conventional ceramic processing such as dry pressing. These shapes are then fired in a nitrogen atmosphere which converts the silicon part to a silicon nitride part. At this step (reaction bonding), the silicon nitride is pressure sintered in an inert atmosphere increasing the strength of the component threefold. As a result of SRBSN processing, the ceramic crystals grow in an intertwining "needle-like" fashion which we have named NeedleLok™. The NeedleLok™ structure results in a strong, tough, high fracture energy part. This process can be used to produce extremely high production volumes of parts due to the use of conventional pressing processes.

Manufacture of Translucent Ceramics (Transtar®). We produce translucent aluminum oxide (Transtar®) components primarily for use as orthodontic ceramic brackets. We purchase the high purity powders from outside vendors and process them using dedicated conventional ceramic mechanical dry presses. The formed blanks are then fired in a segregated furnace in a hydrogen atmosphere at over 3,000°F until the ceramics enter into a mechanically strong, translucent condition. These fired translucent brackets then have certain critical features diamond ground into them. The next step is a proprietary treatment of the bonding side in order to permit a sound mechanical seal when bound to the patient's teeth. In the final step we furnace braze a stainless steel channel into each archwire slot which has been previously diamond ground into the bracket.

Functional Coatings (Surface Engineered). Our functional coatings are formed by the deposition of hard particles, primarily diamonds, in a nickel layer on steel, aluminum or titanium. We purchase the hard particles — sized between nanometers and 60µm — from outside vendors and customize these raw materials through chemical treatment. Before being coated, the metal parts are chemically cleaned and deburred. The final product is manufactured by an electroless nickel coating process with simultaneous embedding of hard particle grains. The final step is the hardening of the nickel surface by a heat treatment process up to 660°F.

Evaporation Boats (LaserMet®, DiMet®, TriMet®, FlashMet®). Evaporation boats are ceramic sintered parts consisting of titanium diboride/boron nitride and other nitride compositions for our TriMet® product. These components, in the form of ceramic powders, are milled and conditioned. The key forming process is hot pressing, which results in solid sintered billets. From these sintered billets, the evaporation boats are machined with proprietary processes to various types and shapes.

Sintered Parts. For the production of sintered parts, we either buy raw materials like silicon carbide from outside vendors or use our own ceramic powders. With our specific developed processes, we condition the ceramic powders by incorporating additives, milling, and spray drying into ready-to-press powders. We then utilize the processing steps of forming, green machining, sintering and final machining as the materials are transformed into various shapes. We utilize a broad range of technological processes and equipment to accomplish this. Examples of these processes include cold isostatic pressing, axial dry pressing, injection molding, extrusion molding, pressure sintering, hot pressing, hot isostatic pressing and pressureless sintering.

Diamond Grinding. Many of our advanced technical ceramic products must be finished by diamond grinding because of their extreme hardness. Our finished components typically are machined to tolerances of $\pm .001$ inch and occasionally are machined to tolerances up to $\pm .0001$ inch. To a very limited extent, we also perform diamond grinding services for customers independent of our other manufacturing processes to specifications provided by the customer. Our diamond grinding facilities can perform surface grinding, diameter grinding, ultrasonic diamond grinding, diamond lapping, diamond slicing and honing. The equipment includes manual, automatic and computer numerically controlled, or CNC, grinders. We have specially adapted the CNC grinders for precision grinding of ceramic contours to exacting tolerances.

Sintering of Fused Silica Ceramics. Sintering of fused silica ceramics is the process we use to fabricate fused silica ceramic shapes for applications in crucibles for use in the manufacturing of photovoltaic solar cells, metallurgical tooling, missile radomes (nose cones) and other industrial uses. To fabricate fused silica ceramic shapes, fused silica powders are made into unfired shapes through slip casting or other ceramic forming processes. These unfired "green" shapes are fired at temperatures up to 2,500°F. The final shapes are often marketed in the "as fired" condition or, in some cases, precision diamond ground to achieve specific dimensional tolerances or surface finishes required by certain customers.

Injection Molding. Certain markets, like medical device components, require ceramic shapes that are small, highly configured and held to tight dimensional tolerances. Many of these can only be produced by the injection molding process. At the present time these powders tend to be oxide ceramics, primarily zirconia, alumina and/or blends thereof that we mix in house. The ceramic powder is then blended with organic ingredients that constitute a proprietary binder system. The resultant feedstock allows us to process the material through a standard injection-molding machine into a precision mold designed by us.

Boron Carbide and Aluminum Metal Matrix Composites. For the production metal matrix composite materials, we hot press relatively large ingots of aluminum and boron carbide. These ingots are subsequently either extruded or rolled and then cut into the final configuration. For the production of Boral®, we acquire an extruded aluminum material into which we place a proprietary mixture of aluminum and boron carbide powder. We roll this material into thin sheets of shield material, which can then be cut into numerous sizes.

Boron Isotopes. We use gravity to separate natural boron material into the two isotopes of boron, ¹⁰B and ¹¹B through the use of a large tower. We then convert these isotopes into specific molecules requested by our customers, such as boric acid, zirconium diboride, boron trifluoride or Boron metal. We employ a broad range of technological equipment and processes to produce the isotopically enriched molecule of choice.

High Purity Fused Silica. To produce our fused silica powder products, we melt washed quartz sand into large ingots using an electric arc melting process and then crush the ingots into powder products using various crushing, grinding, milling, and size separation equipment. The melting process transforms the quartz raw material into fused silica glass. The phase transformation that occurs during the melting process results in a finished product whose thermal expansion is much less than that of the quartz sand raw material.

Raw Materials

The starting raw materials for our manufacturing operations are generally fine, synthetic powders available from several domestic and foreign sources, including our subsidiary, ESK Ceramics. ESK Ceramics supplied 1,061 tons of boron carbide powder to us in 2006, 1,078 tons in 2007 and 923 tons in 2008. We have owned ESK Ceramics since August 23, 2004. Our Minco, Inc. subsidiary, which we acquired on July 10,

2007, supplies us with high purity fused silica powders. Other raw materials, such as the backing material for ceramic armor, graphite and metal components, are procured from several commercial sources.

Quality Control

We make our products to a number of exacting specifications. In order to meet both internal quality criteria and customer requirements, we implement a number of quality assurance programs such as in-process statistical process control (SPC). We implement these quality programs separately at each of our manufacturing locations and in different ways depending on the processes. The results of these well deployed programs assist us in understanding and predicting limited exposure to non-conforming products.

Our Advanced Ceramic Operations, ESK Ceramics, Boron Products, Minco and Thermo Materials facilities have received ISO 9001 Certification. Semicon Associates and SemEquip, Inc. are ISO 9000 compliant.

Engineering and Research

Our engineering and research efforts consist of application engineering in response to customer requirements, in addition to new materials and product development aimed at creating demand for new products. Our efforts create new products, modify existing products to fit specific customer needs and result in developing enhanced ceramic processes.

We allocate costs associated with application engineering and research between cost of product sales and research and development expense. Application engineering efforts devoted to specific customer orders generally are recognized as cost of product sales, while the balance of engineering and research costs is included in research and development and expensed as incurred. Our research and development expenses were approximately \$14.8 million in 2008, \$17.6 million in 2007, and \$9.9 million in 2006.

Competition

Our products compete with advanced technical ceramic products and powders from other companies, as well as with high strength steel alloys and plastic products. When competing with other advanced technical ceramic products and powders, we believe the principal competitive factors are manufacturing capacity and the ability to deliver products, price, product performance, material specifications, application engineering capabilities, customer support and reputation. Some of our competitors include ArmorWorks, The Protective Group, Ceramtec, the Armor Holdings and Cercom subsidiaries of BAE Systems, CoorsTek, Denka, Momentive Performance Materials, Hitachi, HC Starck, Kyocera's Industrial Ceramics Group, Morgan, Saint Gobain, Kennametal, Spectra-Mat, UK Abrasives, Vesuvius, C-E Minerals, NHTC, Holtec, Nukem and General Electric. Many of our current or potential competitors have greater financial, marketing and technical resources than we do. We cannot guarantee that we will be able to compete successfully against our current or future competitors. If we fail to compete successfully, there could be material adverse effects on our business, financial condition and results of operations. In many applications we also compete with manufacturers of non-ceramic materials. When competing with high strength steel alloys and plastic products, we may not be able to compete effectively when price is a primary consideration, because our products are typically more expensive as a result of higher manufacturing costs associated with the production of advanced technical ceramics.

Backlog

We record an item as backlog when we receive a contract, purchase order or other notification indicating the number of units to be purchased, the purchase price, specifications, delivery requirements and other customary terms and conditions. Our backlog was approximately \$238.9 million as of December 31, 2007 and approximately \$126.4 million as of December 31, 2008. We expect that substantially all of our backlog as of December 31, 2008 will be shipped during 2009.

Patents, Licenses and Trademarks

We rely primarily on trade secrecy to protect compositions and processes that we believe are proprietary. In certain cases, the disclosure of information concerning such compositions or processes in issuing a patent could be competitively disadvantageous. However, our management believes that patents are important for technologies where trade secrecy alone is not a reliable source of protection. Accordingly, we have applied for, or have been granted, several U.S. patents relating to compositions, products or processes that our management believes are proprietary, including lightweight ceramic armor.

We have been issued two U.S. patents relating to translucent ceramics for orthodontic brackets. The first of these two patents expired in September 2007, and the second patent expires in October 2013. We co-invented and co-own these patents with 3M Unitek. Together with 3M Unitek, we have granted licenses to companies whose ceramic orthodontic brackets infringe our joint patents. These companies pay both of us royalties based on sales of their orthodontic ceramic brackets for the remaining life of the patents.

In addition to the above, we have been issued 45 U.S. patents and have 75 patents pending and have applied for corresponding foreign patents in various foreign countries. Of the number of patents indicated above, our ESK Ceramics subsidiary, has been issued 12 U.S. patents, while 6 patents are pending, and our SemEquip subsidiary has been issued 17 U.S. patents and 60 patents are pending.

The proprietary coarse grained silicon carbide materials, including silicon carbide materials with graphite inclusions, are protected by patents in Europe, the United States, Canada, Japan and the Czech Republic. These patents expire in 2017. Other patents and one patent pending also relate to sintered silicon carbide materials, the earliest expiring in 2010. Another two patents for evaporation boats have been issued in Europe, the United States, Canada and Japan. The earliest of these patents expires in 2019. One other patent is on Ekagrip® friction enhancing coatings, which expires in 2019, and there is an additional patent pending on Ekagrip®. Other patents relate to boron nitride materials and composite ceramic materials.

The patents issued to our SemEquip subsidiary relate to its ion source and method of making semiconductor devices. SemEquip's pending patent applications relate to its ion source, semiconductor devices and synthesis of the molecular cluster source feed material, octadecaborane, B₁₈H₂₂, used in its ion source.

"Ceralloy®," the name of our technical ceramics, "Ceradyne®" and the Ceradyne logo, comprising the stylized letters "CD®," are our major trademarks registered in the United States and various foreign countries. We also have other trademarks, including "Transtar®," "Semicon®," "Thermo®," "Netshape®," "Defender®," "NeedleLok™," "Thermo-Sil™," "Boral®," and "Ramtech™". The ESK Ceramics logo, and ESK Ceramics' major product trademarks, including "TETRABOR®," "EKasic®," "DiMet®," "TriMet®," "MYCROSINT®," "EKagrip®," "BOROMID®," "EKamold®," "LaserMet®," "EllipsoMet®" and "EKatherm®" are registered in Germany and many countries worldwide. The ESK Ceramics' product trademarks "BORONEIGE®" and "EKathemis®" are registered in Germany and registration has been applied for in many countries worldwide. The Minco logo, consisting of an ingot design featuring the word "Minco" in the center of the ingot, is registered in the United States. SEMEQUIP®, CLUSTERION®, CLUSTERCARBON®, and CLUSTERBORON® are registered trademarks in the United States and CLUSTERBORON® is also registered in Japan, South Korea and Taiwan.

Employees

As of December 31, 2008 we had 2,388 employees, including 130 employees with undergraduate or graduate degrees in ceramic engineering or related sciences. Of these total employees, 1,877 were in manufacturing, 247 were in engineering and research, 97 were in sales and marketing, and 167 were in general management, finance and administration. We also use temporary labor in some of our production operations. We generally consider our relationship with employees to be excellent. None of our U.S.-based employees are represented by labor unions. The employees of ESK Ceramics have elected a work council, an entity which represents employees and is entitled to information and co-determination rights under German law. We consider our relationship with the work council to be good.

Availability of SEC Filings

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You can read our SEC filings over the Internet at the SEC's website at

<http://www.sec.gov>. We also make our SEC filings available free of charge through our Internet website as soon as reasonably practicable after we electronically file them with, or furnish them to, the SEC. Our website address is www.ceradyne.com. The reference to our website address does not constitute incorporation by reference into this report of the information contained at that site.

EXECUTIVE OFFICERS OF CERADYNE

Our executive officers and their ages as of February 24, 2009 are as follows:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Joel P. Moskowitz	69	Chairman of the Board, Chief Executive Officer and President
David P. Reed	54	Vice President, and President of North American Operations and Assistant Corporate Secretary
Jerrold J. Pellizzon	55	Chief Financial Officer and Corporate Secretary
Michael A. Kraft	46	Vice President of Nuclear and Semiconductor Business Units
Thomas Jüngling	45	Vice President, and President of ESK Ceramics
Bruce R. Lockhart	46	Vice President, and President of Thermo Materials
Jeffrey J. Waldal	44	Vice President, and President of Semicon Associates
Kenneth R. Morris	55	Vice President of Operations
Thomas A. Cole	62	Vice President, Business Development

Joel P. Moskowitz co-founded our predecessor company in 1967. He served as our President from 1974 until January 1987, and has served as our President since September 1987. In addition, Mr. Moskowitz has served as our Chairman of the Board and Chief Executive Officer since 1983. Mr. Moskowitz currently serves on the Board of Trustees of Alfred University. Mr. Moskowitz obtained a B.S. in Ceramic Engineering from Alfred University in 1961 and an M.B.A. from the University of Southern California in 1967.

David P. Reed joined us in November 1983, and has served as a Vice President since January 1988. In February 2005, Mr. Reed was appointed to the newly created position of President of North American Operations, with responsibility for all the company's Advanced Ceramic Operations in Costa Mesa, Irvine and San Diego, California, as well as the new plant in Lexington, Kentucky; Ceradyne Thermo Materials, in Scottdale, Georgia; and Ceradyne Semicon Associates, in Lexington, Kentucky. Mr. Reed's focus has been and will continue to be on lightweight ceramic armor systems. Prior to joining us, Mr. Reed served as Manager, Process Engineering for the Industrial Ceramic Division of Norton Co. from 1980 to 1983. Mr. Reed obtained a B.S. in Ceramic Engineering from Alfred University in 1976 and an M.S. in Ceramic Engineering from the University of Illinois in 1977.

Jerrold J. Pellizzon joined us in September 2002 and serves as our Chief Financial Officer and Corporate Secretary. Prior to joining us, Mr. Pellizzon was Chief Executive Officer of DrSoy Nutrition, Inc., a developer of soy protein based food products, from 2000 until 2002. From 1994 through 2000, Mr. Pellizzon served as Chief Operating Officer and Chief Financial Officer of Met-Rx Substrate Technologies. From 1984 to 1993, Mr. Pellizzon was Chief Financial Officer for Breton Construction, Inc., and served on their executive committee and board of directors. Prior to 1984, Mr. Pellizzon held executive and management positions at Duke Timber Construction/Tobin Steel Company and was employed as a C.P.A. in public accounting. Mr. Pellizzon obtained his B.S. in Economics from UCLA in 1975.

Michael A. Kraft joined us in February 2005 and served as Vice President of Sales, Marketing and Business Development until June 2007, when he was appointed Vice President of Nuclear and Semiconductor Business Units. Prior to joining us, Mr. Kraft was Managing Director of BVI Capital Partners, an investment bank that provides restructuring services, from 2003 through 2005, and President and Founder of KAM Solutions, LLC, an engineering and materials testing services firm, in 2003. From 2000 through 2002, Mr. Kraft was President, USA, for Rational AG and from 1993 through 2000, he held various management

and marketing positions with Kulicke & Soffa Industries, Inc. Prior to 1993, Mr. Kraft held various management and marketing positions with General Electric Company. He holds degrees with honors from Michigan State University in electrical engineering and an M.B.A. degree from Pennsylvania State University.

Thomas Jüngling joined us in July 2005 as Director of Business Development and Technology Integration and has served in the newly created position of Chief Technology Officer since January 2006. In September 2007, Mr. Jüngling was promoted to President of our ESK Ceramics subsidiary, and he was appointed a Vice President of Ceradyne in December 2007. Prior to joining us, Mr. Juengling was Business Unit Manager at Inovon GmbH & Co. KG, Germany. From 1996 to 2004, Mr. Jüngling held various positions at Elektroschmelzwerk, Kempten GmbH (ESK Ceramics) and Wacker-Chemie GmbH, Germany. Mr. Jüngling obtained his Diploma in Mechanical Engineering in 1988 and his PhD in Engineering (Material Science) in 1992, both from the University of Karlsruhe, Germany.

Bruce R. Lockhart joined our Thermo Materials division as its President in September of 2001, and was appointed a Vice President of Ceradyne in February 2003. Prior to joining us, Mr. Lockhart had 16 years of varied experience in the ceramic industry, the majority of which was with Thermal Ceramics Inc., a provider of products for engineered heat management solutions. Mr. Lockhart received a B.S. in Ceramic Engineering from Clemson University in 1985 and a M.B.A. from Clemson University in 1990.

Jeffrey J. Waldal joined our Semicon Associates division in 1995 as a quality manager, and was promoted to manufacturing manager in 1997 and to President of Semicon in 1999. Mr. Waldal was elected as a Vice President in February 2003. He is currently responsible for the operations, finances and marketing at Semicon Associates. Mr. Waldal began his career as senior materials technician at United Technologies — Pratt & Whitney Aircraft. He was employed for eight years at Ladish Company, Inc. as quality supervisor and quality manager. Mr. Waldal currently serves on the board of directors as Chairman for Kentucky Manufacturing Assistance Center and is a member of the University of Kentucky College of Engineering Dean's Advisory Council. Mr. Waldal obtained a degree in Non-Destructive Testing from Hutchinson Technology Institute in 1984, a B.A. in Business Management from the University of Kentucky in 1995, and an M.B.A. from Eastern Kentucky University in 1998.

Kenneth R. Morris joined us in January 2005 as Director of Body Armor and was promoted in July 2006 to Vice President of Operations. Mr. Morris has been engaged in the advanced technical ceramic industry for more than 25 years. In 1994, he joined Kyocera Industrial Ceramics Company as Plant Manager. During 1999, he became the Director of North American Operations and in 2004 advanced to the position of Product Development Manager for Impact Protection Materials. He served as Vice President and General Manager of The Carborundum Company from 1986 to 1994. He was formerly employed by Ceradyne from 1983 to 1984 as Materials Manager and as Assistant Vice President of Operations for its silicon carbide division from 1984 to 1986. He began his career with Kyocera International in 1979, working in supply chain management. The ceramic operations he has been responsible for have produced products to support the semiconductor, aerospace, electro-optical and defense markets.

Thomas A. Cole joined Ceradyne when we acquired Minco, Inc. in July 2007. He had been serving as Minco's President and Chief Executive Officer since 2000. He was appointed Ceradyne's Vice President of Business Development in March 2008. Mr. Cole's early career was with Corning Inc. for 17 years in various manufacturing and operating roles mostly in technical ceramics and advanced refractories. He left Corning in 1987 when he participated in a buyout of Corning's Corhart Refractories Division and since then was engaged in fixing troubled businesses and selling them. He successfully completed the cycle with seven companies over the last twenty years before joining Ceradyne. Mr. Cole received a B.S. from the College of Ceramics at Alfred University in 1969 and an M.B.A. from the University of Buffalo in 1971.

Our officers are appointed by and serve at the discretion of our Board of Directors.

ITEM 1A. RISK FACTORS

This Annual Report on Form 10-K contains forward-looking statements, as described at page 3 of this report under the caption "Note Regarding Forward-Looking Statements." We believe that the risks described

below are the most important factors which may cause our actual future results of operations to differ materially from the results projected in the forward-looking statements.

Risks Related to Our Business

A substantial portion of our revenues is derived from the sale of defense related products, primarily ceramic body armor. If demand for ceramic body armor declines, if federal budget appropriations involving our products are reduced, if we fail to obtain new government contracts or delivery orders under existing contracts, or if existing government contracts or orders are cancelled, our revenues, profit and cash flow will be materially and adversely affected.

In recent years, a substantial portion of our revenues has been derived from the sale of defense related products, particularly ceramic body armor, either directly or indirectly to the U.S. government. The sale of defense related products represented 61.8% of our revenues in 2008, 74.0% in 2007 and 76.2% in 2006. We anticipate that a substantial portion of our revenues for the foreseeable future will continue to come from sales of defense related products; however, we expect that sales of defense related products will be lower in 2009 than they were in 2008. Our dependence on defense related business, and on sales of ceramic armor in particular, entails several risks, including those described below.

Our defense related business is highly sensitive to changes in national and international defense and budget priorities. For example, in the years 2003 through 2007, our revenues from the sale of ceramic body armor increased significantly due to the U.S. military's acceleration of its program to equip its soldiers with ceramic body armor systems, in part, because of the war in Iraq. In 2008, however, demand for ceramic body armor began to decline due in part to the reduction in hostilities in Iraq and because most combat troops were already equipped with the current generation of ceramic body armor, known as ESAPI. The outlook for ceramic body armor in 2009 and beyond is uncertain for several reasons, including President Obama's announced priority of withdrawing troops from Iraq by mid 2010, and the rate at which the U.S. military will proceed with implementing the next ballistic threat generation of ceramic body armor plates, known as XSAPI (discussed further below). Demand for ceramic body armor could decline further from 2008 levels could decline further from 2008 levels for a variety of reasons, including a lessening of conflicts in the Middle East and other high risk areas, or a reduction in U.S. defense budget appropriations. If that were to occur, our revenues from the sale of defense related products would be reduced and our profit and cash flow could be materially and adversely affected.

Many defense contracts are awarded in an open competitive bidding process, and our past success in winning government contracts does not guarantee that we will win any new contracts in the future. Our success depends upon our ability to successfully compete for and retain such government contracts. If we, or if prime contractors for which we are a subcontractor, fail to win any future bids, or if we are unable to replace business lost upon cancellation, expiration or completion of a contract, our revenues, profit and cash flow from the sale of defense related products would be reduced.

Moreover, government contracts typically may be cancelled by the government at any time without penalty, other than our right to be reimbursed for certain expenses and inventory. If the U.S. government were to cancel any of our government contracts, our revenues, profit and cash flow would be reduced.

As of December 31, 2008, all orders under the \$747.5 million adjusted maximum value Indefinite Delivery/Indefinite Quantity (ID/IQ) contract for ceramic body armor awarded to us in August 2004 had been released and the corresponding shipments were completed in 2008. In October 2008, we were awarded an (ID/IQ) contract by the U.S. Army for the next ballistic threat generation of ceramic body armor plates, known as XSAPI, as well as for the current generation of ESAPI plates. This five-year contract has a maximum value of \$2.3 billion. However, we anticipate that the government will order either XSAPI or ESAPI, but not both. Therefore, the total amount of this ID/IQ award likely will not exceed \$1.1 billion over the life of the contract. Two of our competitors were awarded similar ID/IQ contracts. We expect that government orders under these contracts will be split among the three successful bidders, so our sales under our contract will likely be less than the \$1.1 billion possible total amount. Delivery orders under this contract have been delayed due

primarily to a protest by one of our competitors. Because of this delay, we expect that initial production quantity delivery orders under these ID/IQ contracts will not be issued until March 2009 or later. However, there can be no assurance as to when or to what extent Ceradyne will receive production quantity deliveries under its ID/IQ contract.

If the performance requirements for ceramic body armor are modified by the U.S. military, we may incur delays or additional costs to change the design of our product, or we may not be able to satisfy the new requirements with our existing ceramic materials and processes. If this were to occur, our costs could increase and our revenues, profit and cash flow would decline.

The ceramic body armor we manufacture must comply with stringent performance specifications established by the U.S. military, such as weight and the level of ballistic protection it must provide, and these specifications may be modified by the military in new procurements, as well as under existing contracts. For example, during the quarter ended March 31, 2005, the U.S. military directed us to modify the specifications of the lightweight ceramic body armor that we had been manufacturing, from the version commonly referred to as SAPI (small arms protective insert), to a revised requirement commonly referred to as ESAPI (enhanced small arms protective insert). The revised requirement is more difficult to manufacture than the SAPI version. The change to this new design resulted in production delays and increased costs to us during the first quarter of 2005 as we developed new designs to meet the revised requirement and experienced manufacturing inefficiencies. In October 2008, we were awarded an Indefinite Delivery/Indefinite Quantity (ID/IQ) contract by the U.S. Army for the next generation of body armor, known as XSAPI, which is required to meet a higher ballistic threat than the current ESAPI body armor. Although our first article deliveries under this contract successfully passed ballistic tests, in the event we receive production quantity delivery orders for XSAPI body armor under this procurement, there is no assurance that we will be able to manufacture XSAPI in volume without experiencing delays or additional costs to satisfy the higher ballistic requirements. In the future, the U.S. military may make additional changes to the performance requirements for body armor, and we may experience delays or additional costs to satisfy the new requirements, or we may be unable to meet the new requirements at all with our existing ceramic materials and processes. If this were to occur, our revenues from ceramic body armor would decline and our profitability would suffer.

We rely on two critical materials to make ceramic body armor. A delay or inability to obtain sufficient quantities of these materials could limit the amount of body armor we can manufacture and therefore result in reduced revenues, profit and cash flow.

The critical materials required to manufacture our ceramic body armor are boron carbide powder, which is the principal raw material used in the production of the ceramic armor plates, and an ultra-high molecular weight polyethylene textile material, which we laminate to the surface of the ceramic armor plates.

We obtain substantially all of our boron carbide powder from ESK Ceramics, which has been a supplier of boron carbide powder to us for over 30 years. We acquired ESK Ceramics in August 2004, and it is now our subsidiary. If our ESK Ceramics subsidiary experiences production problems, supplies of boron carbide powder may be insufficient from other sources to meet our requirements for ceramic body armor.

The ultra-high molecular weight polyethylene textile material is available in the United States only from Honeywell International, Inc., under the brand name Spectra Shield®, and from Royal DSM N.V., under the brand name Dyneema®. Although we believe that sufficient quantities of these materials will be available to fulfill our projected needs, a delay or interruption in the supply of either of these materials could adversely affect our ability to fulfill our current orders for ceramic body armor.

If a delay or reduction in supplies of boron carbide powder or either Spectra Shield or Dyneema occurs, we may not be able to ship all of our orders for ceramic body armor, which could result in reduced revenues, profit and cash flow.

We have recently added significant manufacturing capacity. If demand for our products declines, we may have inefficient or under-utilized capacity, and our gross margins, profit and cash flow may suffer.

In response to the increased demand for ceramic body armor for military personnel and cam rollers for diesel engines, as well as our other products, we have added significant manufacturing capacity since early 2002.

Demand for our products, particularly ceramic armor and cam rollers, may not remain at levels sufficient to utilize all of the manufacturing capacity that we have added since early 2002. Much of our manufacturing facilities and production equipment, such as our furnaces and hot presses, are special purpose in nature and cannot be adapted easily to make other products. Also, a substantial amount of the boron carbide powder produced by ESK Ceramics is currently used by us and our competitors to make ceramic body armor. If the demand for ceramic body armor declines substantially from current levels, ESK Ceramics may have significant under-utilized capacity for boron carbide powder. Therefore, a substantial decline in demand for our ceramic body armor or cam rollers could result in significant excess manufacturing capacity, which would result in under absorption of overhead expense and reduced profit.

An original equipment manufacturer that had been using our ceramic cam rollers developed a new diesel truck engine that was introduced in 2007 to meet new environmental regulations. This new engine is designed to use steel cam rollers rather than our more expensive ceramic cam rollers. Consequently, sales of our cam rollers to this customer declined beginning in 2007 and we expect further declines through 2009. Unless we can replace this lost business with sales of our ceramic cam rollers to new customers, our revenues, profits and cash flow from this product line will decline further in 2009.

If we fail to increase our non-defense revenue, and if the demand for ceramic body armor decreases, our revenues, profit and cash flow will be materially and adversely affected.

In 2008, more than 60% of our revenues and more than 68% of our gross profits were from sales of defense-related products. Because our dependence on defense-related products exposes us to significant risks, part of our business strategy is to continue to increase our non-defense revenue base by identifying new products and markets for our advanced technical ceramics, and by increasing sales to our existing non-defense customers. Our ability to execute this strategy successfully depends, in part, on our ability to increase market acceptance of our advanced technical ceramics as a replacement for materials such as metals, plastics and traditional ceramics. While advanced technical ceramics have certain advantages over other materials, such as the ability to withstand extremely high temperatures and combining hardness with light weight, they are more expensive to produce. As a result, the market for advanced technical ceramic products may be limited to high-end applications where price is not a critical competitive factor, where the characteristics of advanced technical ceramics may justify the higher costs compared to other materials or where other materials are not suitable. Due to these limitations on the market for advanced technical ceramics, the market for our products may not grow as we anticipate and we may not be able to increase our non-defense revenue base. If we are unable to execute this strategy, and if the demand for ceramic body armor decreases, our revenues, profit and cash flow will be materially and adversely affected.

Growth in our operations may strain our resources, and if we fail to successfully manage potential future growth, we could incur higher operating costs and delays in the production of our products, which could result in reduced revenues, profit and cash flow.

The volume of orders for ceramic body armor for military personnel, as well as the introduction of new products and recent acquisitions of other businesses, are placing, and will continue to place, a significant strain on our operational, financial and managerial resources and personnel. To effectively manage potential future growth, we must continue to:

- add manufacturing capacity and personnel;
- implement and improve our operational, financial and management information systems;
- develop the management skills of our managers and supervisors;

- add new management personnel; and
- train, motivate and manage our employees.

Any failure to effectively manage growth could result in increased operating costs and delays in the development and production of our products. If this occurs, our revenues, profit and cash flow could decline.

We may generate less profit than expected or even lose money on our fixed price government contracts.

Most of our government contracts provide for a predetermined, fixed price for the products we sell regardless of the costs we incur. When making proposals for fixed-price contracts, we must rely on our ability to accurately estimate our costs and ability to manufacture and deliver the products on time and at a reasonable profit. Our actual production costs may, however, exceed forecasts due to unanticipated delays or increased cost of materials, components, labor, capital equipment or other factors. As a result, we may incur losses on fixed price contracts that we had expected to be profitable, or such contracts may be less profitable than we expected, which could have a material adverse effect on our business, financial condition and results of operations.

Our business is subject to various laws and regulations favoring the U.S. government's contractual position, and our failure to comply with such laws and regulations could harm our operating results and prospects.

As a contractor to the U.S. government, we must comply with laws and regulations relating to the formation, administration and performance of federal government contracts that affect how we do business with our customers and may impose added costs on our business. These rules generally favor the U.S. government's contractual position. For example, these regulations and laws include provisions that allow unsuccessful bidders to protest or challenge contracts we have been awarded, and allow the government to unilaterally terminate, reduce or modify our government contracts.

The accuracy and appropriateness of certain costs and expenses used to substantiate our direct and indirect costs for the U.S. government under fixed-price contracts are subject to extensive regulation and audit by the Defense Contract Audit Agency, an agency of the U.S. Department of Defense. Responding to governmental audits, inquiries or investigations may involve significant expense and divert management's attention. Our failure to comply with these or other laws and regulations could result in contract termination, suspension or debarment from contracting with the federal government, civil fines and damages and criminal prosecution and penalties. Any of these consequences could have a material adverse effect on our business, financial condition, results of operations and liquidity.

We currently depend entirely on 3M Unitek for sales of our ceramic orthodontic brackets. If we are unable to maintain our existing level of business with 3M Unitek our revenues, profit and cash flow from this product line will decline.

We sell our ceramic orthodontic brackets exclusively to 3M Unitek under a five year supply agreement that we entered into with 3M Unitek in December 2005. This supply agreement replaces our original agreement with 3M Unitek that would have expired in September 2007, under which 3M Unitek was required to purchase all ceramic orthodontic brackets exclusively from us, and we were permitted to sell ceramic orthodontic brackets only to 3M Unitek. Under the terms of the new agreement, 3M Unitek will continue to purchase their Clarity and Transcend brand ceramic orthodontic product lines exclusively from us for as long as 3M Unitek continues to sell those products. The new agreement further stipulates that Unitek must purchase from Ceradyne at least 50% of the ceramic orthodontic brackets 3M Unitek requires for next generation designs, which it introduced in 2007. Except under limited circumstances, Ceradyne is not permitted to sell ceramic orthodontic brackets to any other customers under the new agreement. As a result of our agreement with 3M Unitek, our revenue from ceramic orthodontic brackets is dependent entirely upon 3M Unitek. 3M Unitek also offers traditional stainless steel orthodontic brackets. We cannot guarantee that 3M Unitek will devote substantial marketing efforts to the sale of our ceramic orthodontic brackets, or that 3M Unitek will not reassess its commitment to our product. If 3M Unitek fails to actively market our ceramic orthodontic brackets

or decides to promote a competing product over ours, this could cause the sales of our ceramic orthodontic brackets to decline.

Moreover, the first of our two patents for our ceramic orthodontic brackets, which we jointly own with 3M Unitek, expired in September 2007. Consequently, we may not be able to prevent third parties from manufacturing and selling competitive ceramic orthodontic brackets. Ceramic orthodontic brackets manufactured and sold by third parties may be less expensive than ours and may cause sales of our ceramic orthodontic brackets to decline either as a result of pricing pressure or loss of market share.

In addition, the future success of our ceramic orthodontic brackets depends on our ability to maintain and increase market acceptance for our product compared to other competitive solutions, including traditional stainless steel brackets and newer products such as transparent plastic orthodontic aligners, synthetic sapphire brackets and other ceramic brackets. If 3M Unitek reduces its purchases of ceramic orthodontic brackets from us or if competitive products gain market share, the sales of our ceramic orthodontic brackets may decline, resulting in a decrease in our revenues, profit and cash flow.

Our business is subject to risks associated with doing business outside the United States.

Shipments to customers outside of the United States accounted for approximately 27.0% of our sales in 2008, 18.0% of our sales in 2007 and 15.9% of our sales in 2006. Our ESK Ceramics subsidiary is located in Germany and France. Its sales to customers located outside of the United States represented approximately 70.7% of its total sales during 2008, approximately 65.9% of its total sales during 2007, and approximately 57.1% of its total sales during 2006. The increase in foreign sales in 2008 compared to 2007 was due primarily to increased sales of our products in the Asian market as a result of the opening, in June 2007, of our 98,000 square foot facility in Tianjin, China, where we manufacture ceramic crucibles, primarily for the Chinese market. We will commence construction during 2009 of an additional 200,000 square foot facility in Tianjin, China to expand production capacity for ceramic crucibles, which we believe will lead to further growth in sales in the Asian market.

We anticipate that international shipments will account for a significant portion of our sales for the foreseeable future. Therefore, the following risks associated with international business activities could have material adverse effects on our performance:

- burdens to comply with multiple and potentially conflicting foreign laws and regulations, including export requirements, tariffs and other barriers, health and safety requirements, and unexpected changes in any of these factors;
- difficulty in staffing and managing international operations;
- differences in intellectual property protections;
- difficulty in obtaining export licenses from the U.S. government for sales of our defense-related products;
- potentially adverse tax consequences due to overlapping or differing tax structures;
- fluctuations in currency exchange rates; and
- risks associated with operating a business in a potentially unstable political climate.

We have traditionally invoiced our sales from the United States to customers in foreign countries in U.S. dollars. Consequently, if the U.S. dollar becomes more expensive relative to the currencies of our foreign customers, the price of our products that we export from the United States to those countries will rise and our sales into those countries may fall. In addition, in the future, we may be required to denominate foreign sales in the local currencies of our customers. In that case, if the U.S. dollar were to become more expensive relative to the currencies of our foreign customers, we would receive fewer U.S. dollars for each unit of foreign currency that we receive when our customers pay us. Therefore, a more expensive U.S. dollar would cause us to incur losses upon the conversion of accounts receivable denominated in foreign currencies. Such losses could harm our results of operations.

Our ESK Ceramics subsidiary invoices approximately 63.3% of its sales in Euros. ESK Ceramics' sales to customers located in the United States are invoiced in U.S. dollars. If the Euro becomes more expensive relative to the currencies of ESK Ceramics' customers located outside the European Union, the price of its products sold to customers in those countries will rise and its sales into those countries may fall.

We may make future acquisitions which may be difficult to integrate, divert management resources, result in unanticipated costs, or dilute our stockholders.

Part of our continuing business strategy is to make acquisitions of, or investments in, companies, products or technologies that complement our current products, enhance our market coverage, technical capabilities or production capacity, or offer growth opportunities. Future acquisitions could pose numerous risks to our operations, including:

- we may have difficulty integrating the purchased operations, technologies or products;
- we may incur substantial unanticipated integration costs;
- assimilating the acquired businesses may divert significant management attention and financial resources from our other operations and could disrupt our ongoing business;
- acquisitions could result in the loss of key employees, particularly those of the acquired operations;
- we may have difficulty retaining or developing the acquired businesses' customers;
- acquisitions could adversely affect our existing business relationships with suppliers and customers;
- we may fail to realize the potential cost savings or other financial benefits and/or the strategic benefits of the acquisitions; and
- we may incur liabilities from the acquired businesses for infringement of intellectual property rights or other claims, and we may not be successful in seeking indemnification for such liabilities or claims.

In connection with these acquisitions or investments, we could incur debt, amortization expenses related to intangible assets, large and immediate write-offs, assume liabilities, or issue stock that would dilute our current stockholders' percentage of ownership. We may not be able to complete acquisitions or integrate the operations, products or personnel gained through any such acquisition without a material adverse effect on our business, financial condition and results of operations.

The cost of electricity is a significant portion of our cost of product sales. An increase in the cost of electricity may cause our profit margins to decline.

Electricity is essential for the production of our products and comprises a significant portion of our cost of product sales. The cost of electricity for our manufacturing operations in the United States, Europe and China was approximately \$13.2 million during 2008, approximately \$13.5 million during 2007, and approximately \$11.1 million during 2006. Over the last several years, the cost of electricity from utility companies has increased, particularly in California where a significant portion of our manufacturing facilities are located. Fluctuations in the cost of electricity affect our ability to accurately forecast future energy costs and consequently our profitability. If the cost of electricity were to increase substantially, our gross profit margins may decline.

We may not be able to adequately safeguard our intellectual property rights and trade secrets from unauthorized use, and we may become subject to claims that we infringe on others' intellectual property rights.

We rely on a combination of patents, trade secrets, trademarks, and other intellectual property laws, nondisclosure agreements with employees and customers and other protective measures to preserve our proprietary rights to our products and production processes. These measures afford only limited protection and may not preclude competitors from developing products or processes similar or superior to ours. Moreover, the

laws of certain foreign countries do not protect intellectual property rights to the same extent as the laws of the United States.

Although we implement protective measures and intend to defend our proprietary rights, these efforts may not be successful. From time to time, we may litigate within the United States or abroad to enforce our issued or licensed patents, to protect our trade secrets and know-how or to determine the enforceability, scope and validity of our proprietary rights and the proprietary rights of others. For example, we are currently involved in two lawsuits in Germany that we initiated to enforce our proprietary rights. Enforcing or defending our proprietary rights could be expensive, requires management's attention and might not bring us timely or effective relief.

Furthermore, third parties may assert that our products or processes infringe their patent rights. Our patents may be challenged, invalidated or circumvented. Although there are no pending or threatened intellectual property lawsuits against us, we may face litigation or infringement claims in the future. Infringement claims could result in substantial costs and diversion of our resources even if we ultimately prevail. A third party claiming infringement may also obtain an injunction or other equitable relief, which could effectively block the distribution or sale of allegedly infringing products. Although we may seek licenses from third parties covering intellectual property that we are allegedly infringing, we may not be able to obtain any such licenses on acceptable terms, if at all.

Our ability to operate effectively could be impaired if we were to lose the services of our key personnel, or if we are unable to recruit qualified managers and key personnel in the future.

Our success depends on the continued service of our management team and key personnel, including Joel P. Moskowitz, our Chairman and Chief Executive Officer and President; David P. Reed, our Vice President, and President of North American Operations; Jerrold J. Pellizzon, our Chief Financial Officer and Corporate Secretary; and Thomas Jüngling, the President of our ESK Ceramics subsidiary. Mr. Moskowitz was diagnosed with non-Hodgkin's lymphoma in October 2004. He completed chemotherapy treatments in January 2005, and his current diagnosis indicates that the non-Hodgkin's lymphoma is in remission.

If Mr. Moskowitz becomes unable to continue working due to health reasons, or if one or more of these individuals were to resign or otherwise terminate their employment with us, we could experience a loss of sales, delays in new product development and diversion of management resources, and we may have difficulty replacing any of these individuals. We do not have employment agreements or key person insurance on any of our executive employees.

Competition for qualified managers and key personnel is intense and we may not be able to recruit and retain such personnel. If we are unable to retain our existing managers and employees or hire and integrate new personnel, we may experience operating inefficiencies, production delays and reduced profitability.

Our manufacturing facilities are subject to a number of operational risks, including hazards associated with ceramic manufacturing and natural disasters, any of which could have a material adverse impact on our productivity and results of operations.

Due to the nature of our business, we are exposed to hazards associated with ceramic manufacturing, such as:

- accidents or mechanical failure;
- fires or explosions of furnaces; and
- employee exposure to extreme temperatures or hazardous substances.

In addition, the location of our facilities exposes us to potential earthquakes and other natural disasters. These hazards may cause personal injury, loss of life and damage to property, which could lead to a substantial interruption or suspension of operations, potential loss of customers and sales, government fines and lawsuits by injured persons. Any such consequences could have an adverse effect on the productivity and profitability of a particular manufacturing facility or on us as a whole.

Defects in our products could harm our reputation for quality products, increase our operating expenses, reduce sales of our products and impact cash flow.

Our products have in the past contained, and may in the future contain, errors or defects that may be detected at any point in the life of the products. Such errors could result in delays in shipping and sales during the period required for their correction and additional expense associated with their reworking or replacement. Real or perceived defects in our products may result in product returns, loss of sales, delays in market acceptance, injury to our reputation and increased warranty costs, which could reduce our sales and profit. For example, in March 2002, the U.S. government notified us that several lots of our SAPI lightweight ceramic body armor failed to pass ballistics reverification tests. As a result, we stopped production of our SAPI product, modified the design of our product and resumed shipping approximately four months later. In addition, we agreed to correct or replace at our expense all supplies of our SAPI product sales that did not meet the original contractual requirements.

If we are unable to compete successfully against current and future competitors, our revenues could decline.

Our products compete with advanced technical ceramic products from other companies, as well as with high strength steel alloys and plastic products.

When competing with other advanced technical ceramic products, we believe the principal competitive factors are:

- manufacturing capacity and the ability to deliver products;
- price;
- product performance;
- material specifications;
- application engineering capabilities;
- customer support; and
- reputation.

When competing with high strength steel alloys and plastic products, we may not be able to compete effectively when price is a primary consideration, because our products are typically more expensive as a result of higher manufacturing costs associated with the production of advanced technical ceramics.

Some of our competitors include Armor Works, The Protective Group, Ceramtec, the Armor Holdings and Cercom subsidiaries of BAE Systems, CoorsTek, Denka, Momentive Performance Materials, Hitachi, HC Starck, Kyocera's Industrial Ceramics Group, Morgan, Saint Gobain, Kennametal, Spectra-Mat, UK Abrasives, Vesuvius, C-E Minerals, NHTC, Holtec, Nukem and General Electric. Many of our current or potential competitors have greater financial, marketing and technical resources than we do. If we fail to compete successfully against our current or future competitors, our revenues, profit and cash flow could decline.

Uninsured losses arising from third party claims brought against us could result in payment of substantial damages, which would decrease our cash reserves and could harm our profit and cash flow.

Our products are used in applications where the failure to use our products properly or their malfunction could result in serious bodily injury or death. We may not have adequate insurance to cover the payment of any potential claim related to such injuries or deaths. Insurance coverage may not continue to be available to us or, if available, may be at a significantly higher cost.

We are subject to extensive government regulation, and our failure or inability to comply with these regulations could subject us to penalties and result in a loss of our government contracts, which could reduce our revenues, profit and cash flow.

We must comply with and are affected by various government regulations that impact our operating costs, profit margins and our internal organization and operation of our business. Furthermore, we have production contracts with governmental entities and are subject to additional rules, regulations and approvals applicable to government contractors. We are also subject to routine audits to assure our compliance with these requirements. Our failure to comply with these regulations, rules and approvals could result in the imposition of penalties and the loss of our government contracts and disqualification as a U.S. government contractor. As a result, our revenues, profit and cash flow could be reduced.

In addition, a number of our employees involved with defense related business are required to obtain security clearances from the U.S. government. Our business may suffer if we or our employees are unable to obtain the security clearances that are required.

Like other companies operating internationally, we are subject to the Foreign Corrupt Practices Act and other laws which prohibit improper payments to foreign governments and their officials by U.S. and other business entities. Violations of the Foreign Corrupt Practices Act may result in severe criminal penalties, which could have a material adverse effect on our business, financial condition, results of operations and liquidity.

If we fail to comply with environmental laws and regulations, we could incur an increase in our operating costs and a decrease in our profit and cash flow.

We are subject to a variety of environmental regulations relating to the use, storage, discharge and disposal of hazardous materials used to manufacture our products. Authorities could impose fines, suspend production, alter our manufacturing processes, or stop our operations if we do not comply with these regulations.

Until 1997, we produced certain products using beryllium oxide, which is highly toxic in powder form. This powder, if inhaled, can cause chronic beryllium disease in a small percentage of the population. We have been sued in the past by former employees and by employees of one of our customers and by their family members alleging that they had contracted chronic beryllium disease as a result of exposure to beryllium oxide powders used in our products. The last of these claims was settled in 2002, and all of these claims have been dismissed without our incurring material liability. We may not, however, be able to avoid future liability to persons who may allege that they contracted chronic beryllium disease as a result of exposure to the beryllium oxide we used in prior years.

Any failure to comply with current or subsequently enacted environmental statutes and regulations could subject us to liabilities, fines or the suspension of production. Furthermore, any claims asserted against us in the future related to exposure to beryllium oxide powder may not be covered by insurance. Even if covered, the amount of insurance may be inadequate to cover any adverse judgment.

Fines and other punishments imposed on us for environmental violations and expenses we incur to remedy or comply with environmental regulations and future liability for incidences of chronic beryllium disease contracted by employees or employees of customers would decrease our cash reserves and could harm our profitability.

Our long term investments are subject to risks which may cause losses and affect the liquidity of these investments.

Our long term investments at December 31, 2008 included \$24.4 million of auction rate securities which is net of the cumulative to date pre-tax impairment and pre-tax other than temporary impairment charges. Cumulatively to date, we have incurred \$8.6 million in pre-tax impairment charges against other comprehensive income and pre-tax other than temporary impairment charges of \$8.0 million related to these securities. For the year ended December 31, 2008, we incurred \$7.8 million in pre-tax impairment charges against other

comprehensive income and pre-tax other than temporary impairment charges of \$5.9 million against current earnings. The Company's investments in auction rate securities represent interests in collateralized debt obligations supported by pools of residential and commercial mortgages or credit cards, insurance securitizations and other structured credits, including corporate bonds. These auction rate securities are intended to provide liquidity via an auction process that resets the applicable interest rate at predetermined calendar intervals, allowing investors to either roll over their holdings or gain immediate liquidity by selling such interests at par. During the second half of the year 2007, the auctions for these securities failed and in 2008 there was no liquid market for these securities. As a result of current negative conditions in the global credit markets, auctions for our investment in these securities have recently failed to settle on their respective settlement dates. Consequently, the investments are not currently liquid through the normal auction process. If they remain illiquid and a buyer is not found outside the auction process, the value of these securities may decline further.

We review impairments associated with the above in accordance with Emerging Issues Task Force (EITF) 03-1 and FSP SFAS 115-1 and 124-1, "The Meaning of Other-Than-Temporary-Impairment and Its Application to Certain Investments," to determine the classification of the impairment as "temporary" or "other-than-temporary." A temporary impairment charge results in an unrealized loss being recorded in the other comprehensive income component of stockholders' equity. Such an unrealized loss does not reduce net income for the applicable accounting period because the loss is not viewed as other-than-temporary. We believe that a portion of the impairment of its auction rate securities investments is temporary and a portion is other-than-temporary.

Risks Related to our Common Stock

Our stock price has been volatile, and the value of an investment in our common stock may decline.

The market price and trading volume of our common stock has been subject to significant volatility, and this trend may continue. The value of our common stock may decline regardless of our operating performance or prospects. Factors affecting our market price include:

- initiation of coverage by securities analysts, securities analysts' buy/sell recommendations and any expressed beliefs of securities analysts regarding our business prospects or estimated trading multiples;
- our perceived prospects;
- variations in our operating results and whether we have achieved our key business targets;
- the limited number of shares of our common stock available for purchase or sale in the public markets;
- sales or purchases of large blocks of our stock;
- changes in, or our failure to meet, our earnings estimates;
- differences between our reported results and those expected by investors and securities analysts;
- decreases in our trading multiples on an absolute basis or relative to comparable companies;
- announcements of new contracts by us or our competitors;
- market reaction to any future acquisitions, joint ventures or strategic investments announced by us or our competitors;
- developments in the financial markets;
- market reaction to any adverse publicity or news stories; and
- general economic, political or stock market conditions.

Recent events have caused stock prices for many companies, including ours, to fluctuate in ways unrelated or disproportionate to their operating performance. The general economic, political and stock market

conditions that may affect the market price of our common stock are beyond our control. The market price of our common stock at any particular time may not remain the market price in the future. In the past, securities class action litigation has been instituted against companies following periods of volatility in the market price of their securities. Any such litigation, if instituted against us, could result in substantial costs and a diversion of management's attention and resources.

Delaware law may delay or prevent a change in control, and may discourage bids for our common stock at a premium over its market price.

We are subject to the provisions of section 203 of the Delaware General Corporation Law. These provisions prohibit large stockholders, in particular a stockholder owning 15% or more of the outstanding voting stock, from consummating a merger or combination with a corporation unless this stockholder receives board approval for the transaction or 66 $\frac{2}{3}$ % of the shares of voting stock not owned by the stockholder approve the merger or transaction. These provisions of Delaware law may have the effect of delaying, deferring or preventing a change in control, and may discourage bids for our common stock at a premium over its market price.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

We serve our markets through six operating segments with manufacturing facilities in several locations across the United States, one in Canada, one in China and two locations in Europe — Germany and France. Please see the table under the caption "Operating Segments and Facilities" in Item 1 of this report for a summary of our facilities and products comprising our six operating segments.

ITEM 3. LEGAL PROCEEDINGS

In August, September and December 2006, shareholder derivative lawsuits were filed in the California Superior Court for Orange County, purportedly on behalf of Ceradyne against various current and former officers and directors of the Company relating to alleged backdating of stock options. Each state court complaint alleged claims for breach of fiduciary duty, abuse of control, gross mismanagement, waste of corporate assets, unjust enrichment, accounting, rescission, constructive trust, and violations of California Corporations Code. All state court actions have been consolidated into one case, designated, In re Ceradyne, Inc. Derivative Litigation, Orange County Superior Court, Case No. 06-CC-00156.

In September and December 2006, shareholder derivative lawsuits were filed in the United States District Court for the Central District of California, purportedly on behalf of Ceradyne against various current and former officers and directors of the Company relating to alleged backdating of stock options. All federal court actions have been consolidated into one case, designated, In re Ceradyne, Inc. Derivative Litigation, Master File No. SA CV 06-919 JVS. The consolidated federal action alleges, pursuant to a first amended consolidated complaint filed on September 17, 2007, claims for violations of Section 10(b) of the Securities Exchange Act and Rule 10b-5 thereunder, violations of Section 14(a) of the Securities Exchange Act, violations of Section 20(a) of the Securities Exchange Act, insider selling under the California Corporations Code, as well as common law claims for accounting, breach of fiduciary duty, aiding and abetting breaches of fiduciary duty, unjust enrichment, rescission and waste.

The plaintiffs in both the state and federal actions seek to require the individual defendants to rescind stock options they received which have an exercise price below the closing price of the Company's common stock on the date of grant, to disgorge the proceeds of options exercised, to reimburse the Company for damages of an unspecified amount, and also seek certain equitable relief, attorneys' fees and costs.

In summary, there are currently two shareholder derivative actions pending which contain substantially similar allegations. The cases filed in the Orange County Superior Court have been consolidated into one case,

designated, *In re Ceradyne, Inc. Derivative Litigation*, Orange County Superior Court, Case No. 06-CC-00156. The cases filed in the United States District Court for the Central District of California have all been consolidated into one case, designated, *In re Ceradyne, Inc. Derivative Litigation*, Master File No. SA CV 06-919 JVS.

On September 26, 2008, all of the parties to the two derivative actions entered into a memorandum of understanding agreeing in principle to a proposed global settlement of these derivative actions. On November 28, 2008, the parties filed a stipulation of settlement with the federal court. The proposed settlement calls for the Company to adopt certain corporate governance reforms and payment by the Company's insurance carriers of \$1.125 million in attorney's fees to the plaintiffs' attorneys, without any payment by Ceradyne or the other defendants, and for dismissal of the actions with prejudice. The Company and the individual defendants have denied and continue to deny any and all allegations of wrongdoing in connection with this matter, but believe that given the uncertainties and cost associated with litigation, the settlement is in the best interests of the Company, its stockholders, and the individual defendants. On January 9, 2009, the federal court granted preliminary approval of the settlement and set a final approval hearing for May 18, 2009.

The proposed settlement is conditioned upon final court approval after notice to Ceradyne's shareholders and expiration of the time for appeal from any order of the Court approving the settlement. There can be no assurance that the final settlement will be obtained.

A class action lawsuit was filed on March 23, 2007, in the California Superior Court for Orange County (Civil Action No. 07CC01232), in which it is asserted that the representative plaintiff, a former Ceradyne employee, and the putative class members, were not paid overtime at an appropriate overtime rate. The complaint alleges that the purportedly affected employees should have had their regular rate of pay for purposes of calculating overtime, adjusted to reflect the payment of a bonus to them for the four years preceding the filing of the complaint. The complaint further alleges that a waiting time penalty should be assessed for the failure to timely pay the correct overtime payment. Ceradyne has filed an answer denying the material allegations of the complaint. We believe that the lawsuit is without merit on the basis that our bonus policy is discretionary and is not of the type that is subject to inclusion in the regular hourly rate for purposes of calculating overtime, and we have been vigorously defending this action. The motion for class certification was heard on November 13, 2008 and class certification was granted. On January 6, 2009, the court entered an order certifying the class. Ceradyne has filed a petition for writ of mandate to have the Court of Appeal review the decision concerning class certification as Ceradyne contends that the putative class members are not similarly situated and, therefore, this case should not proceed as a class action. No ruling has been made by the Court of Appeal as of the date of this report.

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

No matters were submitted to a vote of security holders during the fourth quarter of 2008.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is traded on the Nasdaq Stock Market under the symbol "CRDN." The following table shows the high and low closing sale prices for our common stock as reported by the Nasdaq Stock Market during the calendar quarters indicated:

	High	Low
Year Ended December 31, 2007		
First Quarter	\$61.75	\$50.56
Second Quarter	\$74.72	\$55.20
Third Quarter	\$83.59	\$64.95
Fourth Quarter	\$78.19	\$42.27
Year Ended December 31, 2008		
First Quarter	\$50.15	\$27.92
Second Quarter	\$43.13	\$32.27
Third Quarter	\$49.70	\$32.19
Fourth Quarter	\$36.06	\$18.15

As of February 9, 2009, there were 372 holders of record of our common stock.

We have never declared or paid cash dividends on our common stock and do not plan to pay any cash dividends in the near future. Our current policy is to retain all funds and earnings for use in the operation and expansion of our business.

We did not sell any equity securities during the year ended December 31, 2008 that were not registered under the Securities Act of 1933.

The following table sets forth information regarding shares of our common stock that we repurchased during the fourth quarter ended December 31, 2008.

Issuer Purchases of Equity Securities

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs
Month No. 1 (October 1 to October 31, 2008)	—	—	1,128,237	\$65,080,754
Month No. 2 (November 1 to November 30, 2008)	300,000	\$22.91	1,428,237	\$58,207,373
Month No. 3 (December 1 to December 31, 2008)	150,000	\$19.42	1,578,237	\$55,294,808
Total	450,000	\$21.75	1,578,237	\$55,294,808

- (1) On March 4, 2008, we announced that our board had authorized the repurchase of up to \$100.0 million of our common stock in open market transactions, including block purchases, or in privately negotiated transactions. We did not set a time limit for completion of this repurchase program, and we may suspend or terminate it at any time.

ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data as of December 31, 2004, 2005 and 2006 and for the years ended December 31, 2004 and 2005 are derived from our audited consolidated financial statements for those periods, which are not included in this report. The selected consolidated financial data as of December 31, 2007 and 2008 and for the years ended December 31, 2006, 2007 and 2008 are derived from our audited consolidated financial statements which are included in this report beginning on page F-1. The following data is qualified in its entirety by and should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our consolidated financial statements and the related notes included elsewhere in this report.

	Year Ended December 31,				
	2008 ⁽¹⁾	2007 ⁽²⁾	2006	2005	2004 ⁽³⁾
	(amounts in thousands, except per share data)				
Statement of Income Data:					
Net sales	\$680,197	\$756,835	\$662,888	\$368,253	\$215,612
Cost of product sales	414,885	450,787	401,991	237,115	146,518
Gross profit	265,312	306,048	260,897	131,138	69,094
Operating expenses:					
Selling	31,231	26,917	22,919	20,694	8,266
General and administrative	43,889	40,801	35,293	21,014	14,131
Acquisition related charges	9,824	—	—	—	—
Research and development	14,782	17,552	9,909	7,802	3,341
Total operating expenses	99,726	85,270	68,121	49,510	25,738
Income from operations	165,586	220,778	192,776	81,628	43,356
Other income (expense):					
Royalty income	66	174	120	145	146
Interest income	7,553	12,394	6,687	434	476
Miscellaneous, net	(4,425)	(2,599)	(919)	275	1,602
Interest expense	(4,155)	(4,204)	(4,105)	(9,252)	(1,661)
Total other income (expense)	(961)	5,765	1,783	(8,398)	563
Income before provision for income taxes	164,625	226,543	194,559	73,230	43,919
Provision for income taxes	57,875	82,278	66,155	26,452	16,346
Net income	<u>\$106,750</u>	<u>\$144,265</u>	<u>\$128,404</u>	<u>\$ 46,778</u>	<u>\$ 27,573</u>
Net income per share:					
Basic	\$ 4.04	\$ 5.29	\$ 4.77	\$ 1.90	\$ 0.52
Diluted	\$ 4.00	\$ 5.20	\$ 4.69	\$ 1.86	\$ 0.51
Weighted average number of common shares outstanding:					
Basic	26,446	27,252	26,924	24,635	21,442
Diluted	26,689	27,732	27,352	25,107	21,900

	As of December 31,				
	2008	2007	2006	2005	2004
	(amounts in thousands)				
Balance Sheet Data:					
Cash and cash equivalents	\$215,282	\$155,103	\$ 13,547	\$ 91,542	\$ 4,521
Short term investments	6,140	29,582	190,565	7,839	10,041
Working capital	400,835	353,923	332,063	212,309	78,389
Total assets	854,997	783,286	613,815	430,193	316,354
Total long-term debt	121,000	121,000	121,000	121,000	109,725
Stockholders' equity	628,076	578,629	406,611	250,520	135,041

- (1) The operations of SemEquip, Inc. have been consolidated with ours since August 11, 2008.
- (2) The operations of Minco, Inc. have been consolidated with ours since July 10, 2007. The operations of Ceradyne Boron Products have been consolidated with ours since September 1, 2007.
- (3) The operations of ESK Ceramics have been consolidated with ours since September 1, 2004.

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

The following discussion and analysis of our financial condition and results of operations should be read together with "Selected Consolidated Financial Data," and our consolidated financial statements and related notes included elsewhere in this report. This discussion and analysis contains forward-looking statements that involve risks and uncertainties. We base these statements on assumptions that we consider reasonable. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors discussed in "Note Regarding Forward-Looking Statements," "Item 1A — Risk Factors," and elsewhere in this report.

Overview

We develop, manufacture and market advanced technical ceramic products, ceramic powders and components for defense, industrial, automotive/diesel and commercial applications. Our products include:

- lightweight ceramic armor for soldiers and other military applications;
- ceramic industrial components for erosion and corrosion resistant applications;
- ceramic powders, including boron carbide, boron nitride, titanium diboride, calcium hexaboride, zirconium diboride and fused silica, which are used in manufacturing armor and a broad range of industrial products and consumer products;
- evaporation boats for metallization of materials for food packaging and other products;
- durable, reduced friction, ceramic diesel engine components;
- functional and frictional coatings primarily for automotive applications;
- translucent ceramic orthodontic brackets;
- ceramic-impregnated dispenser cathodes for microwave tubes, lasers and cathode ray tubes;
- ceramic crucibles for melting silicon in the photovoltaic solar cell manufacturing process;
- ceramic missile radomes (nose cones) for the defense industry;
- fused silica powders for precision investment casting (PIC) and ceramic crucibles;
- neutron absorbing materials, structural and non-structural, in combination with aluminum metal matrix composites that serve as part of a barrier system for spent fuel wet and dry storage in the nuclear

industry, and non-structural neutron absorbing materials for use in the transport of nuclear fresh fuel rods;

- nuclear chemistry products for use in pressurized water reactors and boiling water reactors;
- boron dopant chemicals for semiconductor silicon manufacturing and for ion implanting of silicon wafers; and
- ceramic bearings and bushings for oil drilling and fluid handling pumps.

Our customers include the U.S. government, prime government contractors and large industrial, automotive, diesel and commercial manufacturers in both domestic and international markets.

We conduct our operations primarily through six operating segments. The following table includes a summary of our products by applications for our six segments.

Operating Segment and Facility Location	Products
<p><i>Ceradyne Advanced Ceramic Operations</i></p> <p>Costa Mesa and Irvine, California Approximately 240,000 square feet</p> <p>Lexington, Kentucky Approximately 115,000 square feet</p> <p>Wixom, Michigan Approximately 29,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Lightweight ceramic armor <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceralloy® 147 SRBSN wear parts • Precision ceramics <p><i>Automotive/Diesel Applications:</i></p> <ul style="list-style-type: none"> • Ceralloy® 147 SRBSN automotive/diesel engine parts <p><i>Commercial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic orthodontic brackets • Components for medical devices
<p><i>ESK Ceramics</i></p> <p>Kempton, Germany Approximately 599,000 square feet</p> <p>Bazet, France Approximately 88,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Boron carbide powders for body armor <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic powders: boron carbide, boron nitride, titanium diboride, calcium hexaboride and zirconium diboride • Silicon carbide parts • Evaporation boats for the packaging industry • High performance fluid handling pump seals <p><i>Automotive/Diesel Applications:</i></p> <ul style="list-style-type: none"> • EKagrip® functional and frictional coatings <p><i>Commercial Applications:</i></p> <ul style="list-style-type: none"> • BORONEIGE® boron nitride powder for cosmetics
<p><i>Ceradyne Semicon Associates</i></p> <p>Lexington, Kentucky Approximately 35,000 square feet</p>	<p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Ceramic-impregnated dispenser cathodes for microwave tubes, lasers and cathode ray tubes • Samarium cobalt magnets

Operating Segment and Facility Location	Products
<p><i>Ceradyne Thermo Materials</i></p> <p>Scottdale and Clarkston, Georgia Approximately 225,000 square feet</p> <p>Tianjin, China Approximately 98,000 square feet</p> <p>Midway, Tennessee Approximately 105,000 square feet</p>	<p><i>Defense Applications:</i></p> <ul style="list-style-type: none"> • Missile radomes (nose cones) • High purity fused silica used to manufacture missile radomes (nose cones) <p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Glass tempering rolls • Metallurgical tooling • Castable and other fused silica products • Crucibles for photovoltaic solar cell applications • Turbine components used in aerospace applications
<p><i>Ceradyne Canada</i></p> <p>Chicoutimi, Quebec, Canada Approximately 86,000 square feet</p>	<p><i>Industrial Applications:</i></p> <ul style="list-style-type: none"> • Boral® structural neutron absorbing materials • Metal matrix composite structures
<p><i>Boron</i></p> <p>Quapaw, Oklahoma Approximately 128,000 square feet</p> <p>North Billerica, Massachusetts Approximately 26,000 square feet</p>	<p><i>Industrial Applications:</i></p> <p><i>Nuclear Applications:</i></p> <ul style="list-style-type: none"> • Nuclear chemistry products for use in pressurized water reactors and boiling water reactors • Radioactive containment for use in spent fuel transport and storage • Burnable poisons for coating of uranium fuel pellets <p><i>Semiconductor Applications:</i></p> <ul style="list-style-type: none"> • Cluster molecules such as B₁₈H₂₂ for ion implantation for next generation P-dopants • Ionization chambers for ionizing cluster molecules for ion implantation • Development of cluster ion implantation sub-systems • Advanced ion source materials for the manufacture of logic and memory chips

The tables below show, for each of our six segments, revenues and income before provision for income taxes in the periods indicated.

Segment revenues (in millions):

	Year Ended December 31,		
	2008	2007	2006
Advanced Ceramic Operations	\$450.5	\$587.3	\$528.7
ESK Ceramics	152.2	160.6	148.1
Semicon Associates	8.6	8.0	9.1
Thermo Materials	80.2	32.0	15.0
Ceradyne Canada	5.2	3.9	2.4
Boron	19.0	7.7	—
Inter-segment elimination	(35.5)	(42.7)	(40.4)
Total revenue from external customers	\$680.2	\$756.8	\$662.9

Segment income before provision for taxes (in millions):

	<u>Year Ended December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Advanced Ceramic Operations	\$149.1	\$212.6	\$177.0
ESK Ceramics	4.2	13.4	17.3
Semicon Associates	1.4	1.1	1.6
Thermo Materials	23.7	2.3	0.9
Ceradyne Canada	(0.1)	(3.0)	(0.7)
Boron	(15.5)	0.7	—
Inter-segment elimination	<u>1.8</u>	<u>(0.6)</u>	<u>(1.5)</u>
Total segment income before provision for taxes	\$164.6	\$226.5	\$194.6

We categorize our products into four market applications. The table below shows the percentage contribution of our total sales to external customers of each market application in the different time periods.

	<u>Year Ended December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Defense	61.8%	74.0%	76.2%
Industrial	30.6	20.1	17.0
Automotive/Diesel	5.8	4.2	5.2
Commercial	<u>1.8</u>	<u>1.7</u>	<u>1.6</u>
Total	100.0%	100.0%	100.0%

The principal factor contributing to our growth in sales from 2002 through 2007 was increased demand by the U.S. military for ceramic body armor that protects soldiers, which has been driven primarily by military conflicts such as those in Iraq and Afghanistan. Shipments of the current generation of ESAPI (enhanced small arms protective inserts) body armor for the U.S. Army represented 27.6% of our total revenues and 48.8% of our body armor revenues in 2008. These shipments were made against a \$747.5 million adjusted value Indefinite Delivery/Indefinite Quantity (ID/IQ) contract awarded to us in August 2004 and represent the final deliveries against that contract.

Our sales also increased from 2004 through 2007 because of our acquisition of ESK Ceramics in August 2004, our acquisition of Minco, Inc. in July 2007, our acquisition of EaglePicher Boron, LLC in August 2007, which we renamed Boron Products, LLC, and the recent expansion of our operations into China. Our sales declined in 2008 primarily because of reduction in shipments of body armor.

In October 2008, we were awarded an ID/IQ contract by the U.S. Army for the next ballistic threat generation of ceramic body armor plates, known as XSAPI, as well as additional deliveries of the current generation of ESAPI plates. This five-year contract has a maximum value of \$2.3 billion. However, we anticipate that the government will order either XSAPI or ESAPI, but not both. Therefore, the total amount of this ID/IQ award likely will not exceed \$1.1 billion over the life of the contract. Two of our competitors were awarded similar ID/IQ contracts. We expect that government orders under these contracts will be split among the three successful bidders, so the potential orders we may receive under our contract will likely be less than the \$1.1 billion possible total amount. Delivery orders under this contract have been delayed due primarily to a protest by one of our competitors. Because of this delay, we expect that initial production quantity delivery orders under these ID/IQ contracts will not be issued until March 2009 or later. However, there can be no assurance as to when or to what extent Ceradyne will receive production quantity deliveries under its ID/IQ contract. Since it is our policy to include in backlog only delivery orders with firm delivery dates, our backlog at December 31, 2008 does not include any amounts under this ID/IQ contract.

Based on our current backlog for ceramic body armor, we expect our shipments of ceramic body armor to be lower in fiscal year 2009 than in 2008. Moreover, government contracts typically may be cancelled by the

government at any time without penalty. For the next several quarters, and perhaps longer, demand for ceramic body armor is likely to be the most significant factor affecting our sales.

Although we believe that demand for ceramic body armor will continue for many years, the quantity and timing of government orders depends on a number of factors outside of our control, such as the amount of U.S. defense budget appropriations and the level of international conflicts. Moreover, ceramic armor contracts generally are awarded in an open competitive bidding process. Therefore, our future level of sales of ceramic body armor will depend on the U.S. military's continued demand for these products and our ability to successfully compete for and retain this business.

Our ESK Ceramics subsidiary produces boron carbide powder, which serves as a starter ceramic powder in the manufacture of our lightweight ceramic body armor. Owning this source of our principal raw material, together with the substantial manufacturing capacity for ceramic armor at our Lexington, Kentucky plant and in our Irvine, California facility, should allow us to fulfill current and anticipated demand for our ceramic body armor.

Our order backlog was \$126.4 million as of December 31, 2008 and \$238.9 million as of December 31, 2007. Orders for ceramic armor represented approximately \$65.5 million, or 51.8% of the total backlog as of December 31, 2008 and \$179.5 million, or 75.1% of the total backlog as of December 31, 2007. We expect that substantially all of our order backlog as of December 31, 2008 will be shipped during 2009.

Our sales to customers located outside of the United States have varied in recent years, representing \$184.0 million, or 27.0% of net sales in 2008, \$136.2 million, or 18.0% of net sales in 2007, and \$105.7 million, or 15.9% of net sales in 2006. We currently have sales offices in Germany, China, England and Canada as well as commissioned independent sales representatives in other parts of Europe and Asia. Of our sales to customers located outside the United States, 49.0% were denominated in U.S. dollars during 2008.

Net Sales. Our net sales consist primarily of revenues from the sale of products, which we recognize when an agreement of sale exists, the product has been delivered according to the terms of the sales order and collection is reasonably assured.

Cost of Product Sales. Our cost of product sales includes the cost of materials, direct labor expenses and manufacturing overhead expenses. Our business requires us to maintain a relatively high fixed manufacturing overhead. As a result, our gross profit, in absolute dollars and as a percentage of net sales, is greatly impacted by our sales volume and the corresponding absorption of fixed manufacturing overhead expenses. Additionally, because many of our products are customized, we are frequently required to devote resources to sustaining engineering expenses, which we also include in cost of product sales.

The cost of electricity comprises a significant portion of our cost of product sales. In 2004, we began expanding our high-energy utilization silicon nitride manufacturing operations at our facility in Lexington, Kentucky, where costs, particularly for electricity and occupancy, are lower than in California. We have increased our manufacturing capacity for the production of body armor plates by adding three hot press lines at this facility. We chose this facility for the location of the hot press expansion for the same reasons: lower cost of electricity and occupancy. The cost of electricity for our manufacturing operations in the United States and Europe was approximately \$13.2 million, or 3.2% as a percentage of cost of product sales in 2008, approximately \$13.5 million, or 3.0% as a percentage of cost of product sales in 2007, and approximately \$11.1 million, or 2.8% as a percentage of cost of product sales in 2006.

Selling Expenses. Our selling expenses consist primarily of salaries and benefits for direct sales and marketing employees, commissions for direct sales employees and for independent sales representatives, trade show expenses, rent for our sales offices, product literature, and travel and entertainment expenses.

General and Administrative Expenses. Our general and administrative expenses consist primarily of employee salaries and benefits, employee bonuses, which are computed quarterly and accrued in the quarter earned, professional service fees, rent for facilities and expenses for information technology.

Research and Development Expenses. Our research and development expenses consist primarily of employee salaries and benefits, materials and supplies related to ongoing application engineering in response

to customer requirements, and the research and development of new materials technology and products. These costs are expensed as incurred.

Review of Historical Stock Option Grant Procedures

In July 2006, the Company voluntarily initiated a review of its historical stock option grant practices and related accounting treatment. The review was conducted by a Special Committee comprised of three independent members of the Company's Board of Directors, with the assistance of independent legal counsel and forensic accounting experts. The scope of the Special Committee's review included all stock options granted by the Company from January 1997 through September 2003. The Special Committee has completed its review.

Until September 2003, stock option grants generally were approved by unanimous written consents signed by the members of the Stock Option Committee of the Board of Directors. Throughout this period, the Stock Option Committee consisted of the CEO and one other non-management Director. The date specified as the grant date in each unanimous written consent was used (i) to determine the exercise price of the options and (ii) as the accounting measurement date.

The review found that from January 1997 through September 2003, the date selected by management as the grant date and accounting measurement date was the date specified in the unanimous written consent, but that, in all but one case, the unanimous written consents were not prepared, approved or executed by the Company's Stock Option Committee until a later date. There were a total of 23 grant dates from January 1997 through September 2003. The Company's CEO was responsible for selecting the grant dates and followed a consistent practice of seeking low grant prices and he was unaware of the accounting implications of the method he used. Therefore, the use of the date specified in the unanimous written consent as the accounting measurement date was incorrect in all but one case. The proper accounting measurement date was the date the unanimous written consent was signed by the members of the Stock Option Committee.

Based upon information gathered during the review by independent legal counsel, the Special Committee and the Board of Directors have concluded that, while the Company applied an option price date selection practice that resulted in the use of incorrect accounting measurement dates for options granted between January 1997 and September 2003, the accounting errors resulting from the use of incorrect measurement dates were not the product of any deliberate or intentional misconduct by the Company or its executives, staff or Board of Directors. However, as a result of using revised measurement dates for options granted from January 1997 through September 2003, the Company recorded a charge in the second quarter ended June 30, 2006 of \$3.4 million (\$2.3 million after income taxes) pertaining to the years ended December 31, 1997 to 2005 and the six months ended June 30, 2006 (the "Stock-Based Charge"). The Stock-Based Charge was included as a component of general and administrative expenses in the consolidated statements of income as this is where the affected individual's normal compensation costs are recorded. The Stock-Based Charge includes non-cash compensation expense of \$2.2 million (\$1.4 million after income taxes) primarily related to stock option grants made during the period from January 1997 through September 2003 that should have been measured as compensation cost at the actual stock option grant dates, and subsequently amortized to expense over the vesting period for each stock option grant. The Stock-Based Charge also includes \$1.2 million (\$0.9 million after income taxes) of estimated additional employment and other taxes that are expected to become payable.

From September 2003 to February 2005, all stock option grants were approved at meetings held by the Stock Option Committee, and, since February 2005, all stock option grants have been approved at meetings held by the Compensation Committee of the Board of Directors. The dates of these meetings have been used correctly as the accounting measurement date for all stock options granted since September 2003.

Had this estimated Stock-Based Charge been reflected, as and when incurred, in the Company's results of operations for prior years, the impact on net income for Ceradyne's fiscal years ended December 31 would have been a reduction of \$21,000 in 1997, a reduction of \$45,000 in 1998, a reduction of \$47,000 in 1999, a reduction of \$104,000 in 2000, a reduction of \$269,000 in 2001, a reduction of \$74,000 in 2002, a reduction of \$347,000 in 2003, a reduction of \$611,000 in 2004, and a reduction of \$324,000 in 2005. As of

December 31, 2006, the total remaining incremental stock-based compensation charge related to these stock option grants that are expected to vest in future periods with a revised accounting measurement date is immaterial. There was no impact on revenue or net cash provided by operating activities as a result of the estimated compensation charge.

The Company does not believe that a restatement of its prior-period financial statements is required for the Stock-Based Charge. Based on the materiality guidelines contained in SEC Staff Accounting Bulletin No. 99, Materiality (SAB 99), the Company believes that the Stock-Based Charge is not material to any of the individual prior periods affected and the aggregate Stock-Based Charge is not material to the results for the year ended December 31, 2006.

Prior to December 31, 2006, the current members of Ceradyne's Board of Directors, all current executive officers and all other employees of the Company amended all unexercised stock options they held which had an exercise price that is less than the price of the Company's common stock on the actual date of grant, by increasing the exercise price to an amount equal to the closing price of the common stock as of the actual grant date. The Company has and will continue to reimburse all non-executive officer employees for the increase in the exercise price for the modified options as they vest. Such reimbursement has and will not be material.

Results of Operations

The following table sets forth certain income and expense items from our financial statements for the years ended December 31, 2008, 2007 and 2006, expressed as a percentage of net sales.

	<u>Year Ended December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Net sales	100.0%	100.0%	100.0%
Cost of product sales	<u>61.0</u>	<u>59.6</u>	<u>60.6</u>
Gross profit	<u>39.0</u>	<u>40.4</u>	<u>39.4</u>
Operating expenses:			
Selling	4.6	3.6	3.5
General and administration	6.5	5.4	5.3
Acquisition related charge	1.4	—	—
Research and development	<u>2.2</u>	<u>2.3</u>	<u>1.5</u>
Income from operations	24.3	29.1	29.1
Other income (expense)	<u>(0.1)</u>	<u>0.8</u>	<u>0.3</u>
Income before provision for income taxes	<u>24.2</u>	<u>29.9</u>	<u>29.4</u>
Net income	<u>15.7%</u>	<u>19.1%</u>	<u>19.4%</u>

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

Net Sales. Our net sales for the year ended December 31, 2008 were \$680.2 million, a decrease of \$76.6 million, or 10.1%, from \$756.8 million in the corresponding prior year period.

Our Advanced Ceramic Operations division had net sales for the year ended December 31, 2008 of \$450.5 million, a decrease of \$136.8 million, or 23.3%, from \$587.3 million in the prior year. The primary reason for this decrease was that shipments of ceramic body and other armor components for defense customers amounted to \$409.7 million, a decrease of \$141.6 million, or 25.7%, from \$551.3 million of net sales in the prior year due to reduced demand from the U.S. Department of Defense. The decrease in armor sales was partially offset by a \$6.6 million increase in net sales of our automotive/diesel component product line, including cam rollers, from \$11.0 million in 2007 to \$17.6 million in 2008. The primary reason for the increase in sales of the automotive/diesel component product line was \$5.0 million of shipments of ceramic

cam rollers to our North American automotive suppliers because their customers were making forward purchases of the current engine which is being replaced by a new, more expensive engine. The remaining increase of \$1.1 million was due to more ceramic cam rollers shipped to European suppliers for use in off-highway engines.

Our ESK Ceramics subsidiary had net sales for the year ended December 31, 2008 of \$152.2 million, a decrease of \$8.4 million, or 5.2%, from \$160.6 million in the prior year. Approximately \$11.5 million of the sales in 2008 are attributable to a higher value of the Euro versus the U.S. dollar in 2008 compared to 2007. Sales of industrial products for the year ended December 31, 2008 were \$96.9 million, an increase of \$4.3 million, or 4.7%, from the \$92.6 million in the prior year. On a constant currency basis, sales of industrial products for the year ended December 31, 2008 decreased by \$3.0 million. Sales of automotive/diesel products for the year ended December 31, 2008 were \$21.8 million, an increase of \$1.1 million, or 5.4%, from the \$20.7 million in the prior year. On a constant currency basis, sales of automotive/diesel products for the year ended December 31, 2008 decreased by \$0.7 million. The decreases in sales on a constant currency basis for industrial and automotive/diesel products were primarily the result of a severe economic contraction in the fourth quarter of 2008. Sales of defense products for the year ended December 31, 2008 were \$30.9 million, a decrease of \$14.3 million, or 31.7% from the \$45.2 million in the prior year. Included in sales of defense products for the year ended December 31, 2008 were inter-segment sales of \$28.4 million compared to \$40.7 million in the prior year, a decrease of \$12.3 million of shipments to our Advanced Ceramic Operations division. The balance of the decrease was due to a reduction in sales of boron carbide powder to third parties in the defense industry for the year ended December 31, 2008, because their sales of ceramic body armor declined. On a constant currency basis, sales of defense products decreased by \$16.5 million for the year ended December 31, 2008.

Our Semicon Associates division had net sales for the year ended December 31, 2008 of \$8.6 million, an increase of \$0.6 million, or 7.3%, from \$8.0 million in the prior year. The increase in sales reflects higher shipments of microwave and laser cathodes of \$0.9 million; this was partially offset by lower shipments of cathode ray tubes and magnets in 2008 when compared to 2007.

Our Thermo Materials division had net sales for the year ended December 31, 2008 of \$80.2 million, an increase of \$48.2 million, or 150.3%, from \$32.0 million in the prior year. The increase was due in part to the growth of \$29.5 million in sales of crucibles used in the manufacture of photovoltaic cells for the solar energy markets, including \$24.4 million by our new operation in China. Also contributing to the increase in sales during 2008 was \$16.1 million in sales, including inter-company sales, as a result of a full year inclusion of the financial results of Minco, Inc. which we acquired and initially consolidated commencing July 10, 2007. Sales to the defense industry were higher by \$2.4 million due to increased demand for ceramic missile radomes.

Our Ceradyne Canada subsidiary had net sales for the year ended December 31, 2008 of \$5.2 million, an increase of \$1.3 million, or 33.4%, from \$3.9 million in the prior year. The increase in sales reflects higher shipments of our Boral® product line to the nuclear industry of \$2.5 million. This was partially offset by a \$1.2 million reduction in sales of metal matrix composite products.

Our Boron segment which includes our Ceradyne Boron Products subsidiary, which we acquired on August 31, 2007, and our SemEquip, Inc. subsidiary, which we acquired on August 11, 2008 had net sales for the year ended December 31, 2008, of \$19.0 million, an increase of \$11.2 million, or 144.7%, from \$7.8 million in the prior year. The increase in sales was the result of a full year consolidation in 2008 of the Ceradyne Boron Products subsidiary while results in 2007 included net sales for the period from September 1 to December 31, 2007. Also contributing to the increase was the consolidation as of August 11, 2008 of the results of SemEquip, Inc., which had sales of \$0.7 million for the period from August 11 through December 31, 2008.

Gross Profit. Our gross profit for the year ended December 31, 2008 was \$265.3 million, a decrease of \$40.7 million, or 13.3%, from \$306.0 million in the prior year. As a percentage of net sales, gross profit was 39.0% for the year ended December 31, 2008, compared to 40.4% for the prior year. The decrease in gross profit as a percentage of net sales in the year ended December 31, 2008 was the result of lower sales,

particularly of body armor, resulting in a poorer sales mix and lower operating leverage resulting in less absorption of manufacturing overhead expenses. The decrease in gross profit was primarily caused by the decrease in body armor and other armor component sales; this resulted in a reduction of \$63.4 million of gross profit compared to 2007 results. This decrease was partially offset by gross profit from the increased sales of ceramic crucibles and the full year consolidation in 2008 of operations of our Minco, Inc. and Ceradyne Boron Products subsidiaries, both of which were acquired in 2007.

Our Advanced Ceramic Operations division posted gross profit for the year ended December 31, 2008 of \$187.9 million, a decrease of \$59.9 million, or 24.2%, from \$247.8 million in the prior year. As a percentage of net sales, gross profit was 41.7% for the year ended December 31, 2008, compared to 42.2% for the prior year. The primary reasons for the decrease in gross profit and gross profit as a percentage of net sales were decreased sales of body armor, resulting in poorer sales mix and lower operating leverage causing manufacturing overhead to be under absorbed.

Our ESK Ceramics subsidiary had a gross profit for the year ended December 31, 2008 of \$38.2 million, a decrease of \$10.2 million, or 21.0%, from \$48.4 million for the year ended December 31, 2007. Gross profit as a percentage of net sales was 25.1% in 2008 compared to 30.1% in 2007. The decrease in gross profit and in gross profit as a percentage of net sales in the year ended December 31, 2008 was the result of increased labor and electricity expenses, continued price reductions in our evaporation boat and our functional coating businesses due to competitive forces, and a reduction in higher margin boron carbide powder sales to external customers.

Our Semicon Associates division had gross profit for the year ended December 31, 2008 of \$2.6 million, an increase of \$0.7 million, or 37.6%, from \$1.9 million in the prior year. As a percentage of net sales, gross profit was 30.8% for the year ended December 31, 2008, compared to 24.0% for the prior year. The increase in gross profit and in gross profit as a percentage of net sales in the year ended December 31, 2008 was due primarily to price increases that were successfully passed on to customers of our microwave and laser cathodes products.

Our Thermo Materials division had gross profit for the year ended December 31, 2008 of \$32.9 million, an increase of \$25.2 million, or 328.9%, from \$7.7 million in the prior year. As a percentage of net sales, gross profit was 41.0% for the year ended December 31, 2008, compared to 24.8% for the prior year. The improvements in gross profit and gross profit as a percentage of sales were primarily due to lower sales of fused silica and casting product lines which have lower gross margins and an increase in the sales of crucibles which have higher gross margins. Also contributing to the increase in gross profit was the full year consolidation in 2008 of operations of our Minco, Inc. subsidiary, which was initially consolidated as of July 10, 2007.

Our Ceradyne Canada subsidiary had gross profit for the year ended December 31, 2008 of \$1.3 million, an increase of \$3.2 million, from a negative gross profit of \$1.9 million in the prior year. The increase in gross profit was due to an improved sales mix caused by increased sales of our Boral® product line in 2008 and higher operating leverage.

Our Ceradyne Boron segment, which includes our Ceradyne Boron Products subsidiary, which we acquired on August 31, 2007, and our SemEquip, Inc. subsidiary, which we acquired on August 11, 2008, had gross profit of \$0.6 million, a decrease of \$2.3 million, or 79.9%, from \$2.9 million in the prior year. The decrease was primarily caused by a \$1.6 million gross loss from the results of SemEquip, Inc. which were consolidated from August 11, 2008. Our Ceradyne Boron Products subsidiary had gross profit of \$2.2 million for the year ended December 31, 2008, a decrease of \$0.7 million, or 24.2%, from \$2.9 million in the prior year. Contributing to the decrease were poor manufacturing yields and a decrease in sales of higher margin products to the semiconductor industry when compared to 2007.

Selling Expenses. Our selling expenses for the year ended December 31, 2008 were \$31.2 million, an increase of \$4.3 million, or 16.0%, from \$26.9 million in the prior year. Selling expenses, as a percentage of net sales, increased from 3.6% for the year ended December 31, 2007 to 4.6% of net sales for the year ended December 31, 2008. Selling expenses at our ESK Ceramics subsidiary, which constitute a relatively large

portion of the total, are denominated in Euros and increase when translated into dollars at lower exchange rates; this caused an increase of \$1.5 million in selling expenses in 2008. Other factors contributing to the increase were \$2.2 million of additional selling expenses due to the full year consolidation in 2008 of the results of our Ceradyne Boron Products which was initially consolidated commencing September 1, 2007, \$0.5 million of additional selling expenses due to the full year consolidation in 2008 of our Minco subsidiary which was initially consolidated commencing July 10, 2007, and \$0.7 million of selling expenses due to the inclusion of the results of our recently acquired SemEquip, Inc. subsidiary. These increases were partially offset by a reduction in headcount and related personnel and travel expenses of \$0.6 million at our ACO division. The increase in selling expenses as a percentage of net sales was due to a reduction in net sales that was not fully offset by a proportionate decrease in selling expenses.

General and Administrative Expenses. Our general and administrative expenses for the year ended December 31, 2008 were \$43.9 million, an increase of \$3.1 million, or 7.6%, from \$40.8 million in the year ended December 31, 2007. General and administrative expenses, as a percentage of net sales, increased from 5.4% for the year ended December 31, 2007 to 6.5% of net sales for the year ended December 31, 2008. The consolidation of the operations of our Minco, Inc. and Ceradyne Boron Products subsidiaries for all of 2008 and the consolidation of our SemEquip, Inc. subsidiary commencing as of August 11, 2008, contributed \$1.8 million to the increase in general and administrative expenses for the year ended December 31, 2008. General and administrative expenses also increased in 2008 due to a \$1.5 million increase in professional fees for auditing, tax and information technology consulting services, and due to \$0.5 million of additional expenses in connection with the expansion of our business in China. These increases were partially offset by a reduction in bonus payments of \$1.5 million as a result of a decrease in pre-tax income in 2008 compared to 2007.

Acquisition Related Charge. We incurred an acquisition-related compensation charge of \$9.8 million for the year ended December 31, 2008 associated with a pre-closing commitment by SemEquip, Inc. for incentive compensation for several of its employees and advisors. This \$9.8 million charge includes \$1.7 million of cash paid by Ceradyne at closing, and the balance represents the discounted present value of the portion of the estimated contingent consideration payable as incentive compensation to these employees and advisors over 15 years. For additional information regarding this acquisition, see Note 3 of Notes to Condensed Consolidated Financial Statements commencing at Page F-6 of this report.

Research and Development Expenses. Our research and development expenses for the year ended December 31, 2008 were \$14.8 million, a decrease of \$2.8 million, or 15.8%, from \$17.6 million in the prior year. Research and development expenses, as a percentage of net sales, decreased from 2.3% for the year ended December 31, 2007 to 2.2% of net sales for the year ended December 31, 2008. The primary reason for these decreases were the reduction in expenses associated with the development of next generation body armor products and the development of combat vehicle armor.

Other Income (Expense). Our net other income and expense for the year ended December 31, 2008 was a net expense of \$1.0 million, a decrease of \$6.7 million, or 116.7%, from \$5.8 million of other net income in the prior year. There were two principal reasons for this decrease. We earned \$4.8 million less interest income on our cash balances and short-term marketable securities because of a substantial decline in interest rates in 2008. We also incurred charges of \$5.9 million for impairment due to other than temporary reductions in the value of our investments in auction rate securities. Interest expense for the year ended December 31, 2008 was approximately \$4.2 million, a decrease of \$50,000, or 1.2%, from \$4.2 million in the prior year.

Income before Provision for Income Taxes. Our income before provision for income taxes for the year ended December 31, 2008 was \$164.6 million, a decrease of \$61.9 million, or 27.3%, from \$226.5 million in the prior year.

Our Advanced Ceramic Operations division's income before provision for income taxes for the year ended December 31, 2008 was \$149.1 million, a decrease of \$63.6 million, or 29.9%, from \$212.7 million in the prior year. The decrease in income before provision for income taxes for the year ended December 31, 2008 was a result of lower sales of body armor and a decrease in gross margins as a result of a poorer sales mix and lower operating leverage.

Our ESK Ceramics subsidiary's income before provision for income taxes for the year ended December 31, 2008 was \$4.2 million, a decrease of \$9.2 million, or 68.5%, from \$13.4 million in the prior year. The decrease in income before provision for income taxes for the year ended December 31, 2008 was the result of increased labor and electricity expenses, continued price reductions in our evaporation boat and our functional coating businesses due to competitive forces, a reduction in higher margin boron carbide powder sales to external customers and the negative impact of the exchange rate of the Euro when compared to the U.S. dollar.

Our Semicon Associates division's income before provision for income taxes for the year ended December 31, 2008 was \$1.4 million, an increase of \$246,000, or 21.8%, from \$1.1 million in the prior year. The increase in income before provision for income taxes for the year ended December 31, 2008 was a result of higher sales of our microwave and laser cathodes products resulting in improved sales mix and operating leverage.

Our Thermo Materials division's income before provision for income taxes for the year ended December 31, 2008 was \$23.7 million, an increase of \$21.4 million, or 928.4%, from \$2.3 million in the prior year. The increase in income before provision for income taxes for the year ended December 31, 2008 was due to a sales mix change from lower sales of fused silica and casting product lines which have lower gross margins and an increase in the sales of crucibles, primarily in China, and defense products which have higher gross margins. The operations of our Minco, Inc. subsidiary, which were consolidated for all of 2008 compared to only part of 2007, contributed \$1.5 million to the increase in income before provision for income taxes for the year ended December 31, 2008 compared to a contribution of \$166,000 in the prior year.

Our Ceradyne Canada subsidiary's loss before provision for income taxes improved to \$69,000 for the year ended December 31, 2008, from a loss before provision for taxes of \$3.0 million in the prior year. The decrease in the loss before provision for income taxes for the year ended December 31, 2008 was due to an improved sales mix caused by increased sales of our Boral® product line in 2008 compared to 2007 and higher operating leverage.

Our Boron segment's loss before provision for income taxes for the year ended December 31, 2008 was \$15.5 million, a decrease of \$16.2 million from income before provision for income taxes of \$0.7 million in the prior year. The decrease was primarily caused by a \$13.8 million loss before provision for income taxes incurred by our SemEquip, Inc. subsidiary, which we acquired on August 11, 2008. Included in the loss was a \$9.8 million acquisition-related compensation charge associated with a pre-closing commitment by SemEquip, Inc. for incentive compensation for several of its employees and advisors. SemEquip is a late stage development company that incurred operating losses in connection with the development and marketing of "cluster molecules" such as B₁₈H₂₂ for use in the ion implantation of boron (B) in the manufacturing of semiconductors. We anticipate that SemEquip will continue to incur operating losses for the next two fiscal years. Additionally, our Boron Products subsidiary incurred a loss before provision for income taxes for the year ended December 31, 2008 of \$1.7 million due to a reduction of sales of high margin products to the semiconductor industry as a result of a business contraction in that industry and poor manufacturing yields.

Income Taxes. Our provision for income taxes for the year ended December 31, 2008 was \$57.9 million, a decrease of \$24.4 million, or 29.7%, from \$82.3 million in the prior year. The effective income tax rate for the year ended December 31, 2008 was 35.2% compared to 36.3% in the prior year. The decrease in the effective tax rate from the prior year resulted from a higher proportion of our pre-tax income originating from our operations in China where we did not pay income tax. Income taxes also decreased because pre-tax income was lower in 2008 compared to 2007.

Year Ended December 31, 2007 Compared to Year Ended December 31, 2006

Net Sales. Our net sales for the year ended December 31, 2007 were \$756.8 million, an increase of \$93.9 million, or 14.2%, from \$662.9 million in the corresponding prior year period.

Our Advanced Ceramic Operations division had net sales for the year ended December 31, 2007 of \$587.3 million, an increase of \$58.6 million, or 11.1%, from the \$528.7 million in the prior year. The primary

reason for this improvement was the shipment of \$551.3 million of ceramic body and other armor components for defense customers, an increase of \$63.1 million, or 12.9%, from the \$488.2 million of net sales in the prior year due to increased demand from the U.S. Department of Defense. Net sales for our automotive/diesel component product line, including cam rollers, were \$11.0 million, a decrease of \$6.0 million, or 35.6%, from the \$17.0 million in the prior year. The primary reasons for this decrease were that our customers produced less heavy-duty diesel truck engines in 2007 and two of our customers replaced some of our ceramic cam rollers with cheaper steel products. Net sales of our orthodontic brackets product line were \$10.6 million, an increase of \$229,000, or 2.2%, from the \$10.4 million in the prior year.

Our ESK Ceramics subsidiary had net sales for the year ended December 31, 2007 of \$160.6 million, an increase of \$12.4 million, or 8.4%, from the \$148.2 million in the prior year. Approximately \$7.9 million of this increase is attributable to a higher value of the Euro versus the U.S. dollar in 2007 compared to 2006. Sales of industrial products for the year ended December 31, 2007 were \$92.6 million, an increase of \$14.0 million, or 17.9%, from the \$78.6 million in the prior year. This increase was the result of a higher demand for fluid handling and industrial wear parts. Sales of automotive/diesel products for the year ended December 31, 2007 were \$20.7 million, an increase of \$3.4 million, or 20.0%, from the \$17.3 million in the prior year. This was caused by sales to new original equipment manufacturer (OEM) customers in 2007. Sales of defense products for the year ended December 31, 2007 were \$45.2 million, a decrease of \$7.1 million, or 13.5%, from the \$52.3 million in the prior year. Included in sales of defense products for the year ended December 31, 2007 were inter-segment sales of \$40.7 million compared to \$40.4 million in the prior year. The decrease was due to a decrease of \$7.4 million in sales of boron carbide powder to third parties in the defense industry for the year ended December 31, 2007, partially offset by an increase of \$300,000 in sales of boron carbide powder to our Advanced Ceramic Operations division. Third parties purchased less boron carbide powder in 2007 because their sales of ceramic body armor declined.

Our Semicon Associates division had net sales for the year ended December 31, 2007 of \$8.0 million, a decrease of \$1.1 million, or 12.1%, from the \$9.1 million in the prior year. The decrease in sales reflects lower shipments of microwave and laser cathodes of \$0.7 million and \$300,000 of magnets in 2007 when compared to 2006.

Our Thermo Materials division had net sales for the year ended December 31, 2007 of \$32.0 million, an increase of \$17.0 million, or 113.2%, from the \$15.0 million in the prior year. The increase was due to an increase of \$4.7 million in sales of crucibles used in the manufacture of photovoltaic cells for the solar energy markets. Of this increase, \$2.1 million was from sales of crucibles manufactured by our new operation in China. Also contributing \$12.1 million of the increase in sales was the consolidation of our acquisition, Minco, Inc., as of July 10, 2007. Offsetting these increases, were a decline in sales to the defense industry and a reduction in sales of ceramic rollers to the glass industry.

Our Ceradyne Canada subsidiary, which commenced operations in July 2006, had net sales for the year ended December 31, 2007 of \$3.9 million, an increase of \$1.5 million, or 62.8% from the \$2.4 million in the prior year. The increase was due to a full year of operations in 2007 compared to only six months in 2006, and an increase in sales of metal matrix composite products.

Our Ceradyne Boron subsidiary, which we acquired on August 31, 2007, had net sales for the four month period ended December 31, 2007 of \$7.8 million.

Gross Profit. Our gross profit was \$306.0 million for the year ended December 31, 2007, an increase of \$45.1 million, or 17.3%, from \$260.9 million in the prior year. As a percentage of net sales, gross profit was 40.4% for the year ended December 31, 2007, compared to 39.4% for the prior year. The increase in gross profit as a percentage of net sales in the year ended December 31, 2007 was the result of increased sales, particularly of body armor, improved sales mix and higher operating leverage. The increase in gross profit was primarily caused by the increase in body armor sales and the inclusion of our acquisitions during 2007 of Minco, Inc. and Ceradyne Boron Products in our consolidated results of operations.

Our Advanced Ceramic Operations division posted gross profit of \$247.8 million for the year ended December 31, 2007, an increase of \$38.1 million, or 18.2%, from \$209.7 million in the prior year. As a

percentage of net sales, gross profit was 42.2% for the year ended December 31, 2007, compared to 39.7% for the prior year. The primary reasons for the increase in gross profit and gross profit as a percentage of net sales were increased sales of body armor, improved sales mix and higher operating leverage.

Our ESK Ceramics subsidiary had a gross profit of \$48.4 million, or 30.1% of net sales, for the year ended December 31, 2007, compared to gross profit of \$47.7 million, or 32.2% of net sales, for the year ended December 31, 2006. The decrease in gross profit as a percentage of net sales in the year ended December 31, 2007 was the result of increased labor and electricity expenses, continued price reductions in our evaporation boat business due to competitive forces and a reduction in higher margin armor sales to external customers.

Our Semicon Associates division had gross profit of \$1.9 million for the year ended December 31, 2007, a decrease of \$0.6 million, or 23.9%, from \$2.5 million in the prior year. As a percentage of net sales, gross profit was 24.0% for the year ended December 31, 2007, compared to 27.8% for the prior year. The decrease in gross profit and in gross profit as a percentage of net sales in the year ended December 31, 2007 were due primarily to sales returns and losses in our magnet business and lower sales of microwave and laser cathodes resulting in higher per unit manufacturing expenses.

Our Thermo Materials division had gross profit of \$7.7 million for the year ended December 31, 2007, an increase of \$4.5 million, or 141.5%, compared to \$3.2 million in the prior year. As a percentage of net sales, gross profit was 24.8% for the year ended December 31, 2007, compared to 21.1% for the prior year. The improvements in gross profit and gross profit as a percentage of sales were primarily due to lower sales of fused silica and casting product lines which have lower gross margins and an increase in the sales of crucibles which have higher gross margins. Also contributing \$2.3 million of the increase in gross profit was the consolidation of our new acquisition, Minco, Inc., as of July 10, 2007.

Our Ceradyne Canada subsidiary, which commenced operations in July 2006, had a gross loss for the year ended December 31, 2007 of \$1.9 million, an increase in the gross loss of \$1.3 million, or 226.6%, from the \$0.6 million gross loss in the prior year. The increase in the gross loss was caused by the continuation of start up expenses and higher scrap rates.

Our Ceradyne Boron subsidiary, which we acquired on August 31, 2007, contributed \$2.9 million of gross profit for the four month period ended December 31, 2007.

Selling Expenses. Our selling expenses were \$26.9 million for the year ended December 31, 2007, an increase of \$4.0 million, or 17.4%, from \$22.9 million in the prior year. Selling expenses, as a percentage of net sales, increased from 3.5% for the year ended December 31, 2006 to 3.6% of net sales for the year ended December 31, 2007. The increase in selling expenses as a percentage of net sales was due to higher personnel expenses that could not be offset by price increases to customers. Increases in the number of employees and related personnel expenses and an additional \$1.2 million of selling expenses from the consolidations of our acquisitions of Minco, Inc. as of July 10, 2007 and Ceradyne Boron Products as of September 1, 2007 primarily accounted for the increase in selling expenses for the year ended December 31, 2007.

General and Administrative Expenses. Our general and administrative expenses for the year ended December 31, 2007 were \$40.8 million, an increase of \$5.5 million, or 15.6%, from \$35.3 million in the year ended December 31, 2006. General and administrative expenses, as a percentage of net sales, increased from 5.3% for the year ended December 31, 2006 to 5.4% of net sales for the year ended December 31, 2007. Contributing \$3.1 million to the increase in general and administrative expenses for the year ended December 31, 2007 was the consolidation of our 2007 acquisitions of Minco, Inc. and Ceradyne Boron Products. Also contributing to the increase in general and administrative expenses for the year ended December 31, 2007 were increases in the number of employees and related personnel expenses, including increased bonus accruals as a result of the Company's higher operating profits. The comparison to the prior year was favorably impacted by a non-cash charge of \$2.2 million in the second quarter of 2006 based on the results of our Special Committee's review of our historical stock option practices, including our underlying option grant documentation and procedures, as described in more detail above under the caption "Overview — Review of Historical Stock Option Grant Procedures," and a related charge for payroll tax and penalties of \$1.2 million.

Research and Development Expenses. Our research and development expenses for the year ended December 31, 2007 were \$17.6 million, an increase of \$7.7 million, or 77.1%, from \$9.9 million in the prior year. Research and development expenses, as a percentage of net sales, increased from 1.5% for the year ended December 31, 2006 to 2.3% of net sales for the year ended December 31, 2007. The primary reason for these increases were development of next generation body armor products and the continuing development of combat vehicle armor.

Other Income (Expense). Our net other income for the year ended December 31, 2007 was \$5.8 million, compared to net other income of \$1.8 million in the prior year. The primary reason for the increase was an increase in interest income received from investing higher cash balances in short-term marketable securities. Offsetting this was a charge of \$2.1 million for impairment due to the other than temporary reduction in the value of our investments in auction rate securities. Interest expense was \$4.2 million in the year ended December 31, 2007, compared to \$4.1 million in the prior year.

Income before Provision for Income Taxes. Our income before provision for income taxes for the year ended December 31, 2007 was \$226.5 million, an increase of \$31.9 million, or 16.4%, from the \$194.6 million in the prior year.

Our Advanced Ceramic Operations division's income before provision for income taxes for the year ended December 31, 2007 was \$212.7 million, an increase of \$35.7 million, or 20.1%, from \$177.0 million in the prior year. The increase in income before provision for income taxes for the year ended December 31, 2007 was a result of higher sales of body armor and an increase in gross margins as a result of improved sales mix and higher operating leverage.

Our ESK Ceramics subsidiary's income before provision for income taxes for the year ended December 31, 2007 was \$13.4 million, a decrease of \$3.9 million, or 22.7%, from \$17.3 million in the prior year. The decrease in income before provision for income taxes for the year ended December 31, 2007 was the result of increased labor and electricity expenses, higher selling expenses due to increases in the number of employees and related personnel expenses, higher research and development expenses because of the development of next generation ceramic powders for body armor products, and the negative impact of the exchange rate of the Euro when compared to the U.S. dollar.

Our Semicon Associates division's income before provision for income taxes for the year ended December 31, 2007 was \$1.1 million, a decrease of \$449,000, or 28.4%, from \$1.6 million in the prior year. The decrease in income before provision for income taxes for the year ended December 31, 2007 was a result of lower sales of our microwave and laser cathodes products resulting in higher per unit manufacturing expenses, and sales returns and losses in our magnet business.

Our Thermo Materials division's income before provision for income taxes for the year ended December 31, 2007 was \$2.3 million, an increase of \$1.4 million, or 161.5%, from \$0.9 million in the prior year. The increase in income before provision for income taxes for the year ended December 31, 2007 was primarily due to a sales mix change due to lower sales of fused silica and casting product lines which have lower gross margins and an increase in the sales of crucibles which have higher gross margins. Also contributing to the increase in income before provision for income taxes for the year ended December 31, 2007 was \$166,000 of operating profit from our new acquisition, Minco, Inc.

Our Ceradyne Canada subsidiary's loss before provision for income taxes for the year ended December 31, 2007 was \$3.0 million, an increase of \$2.4 million, or 347.2%, from \$0.7 million in the prior year. The increase in the loss before provision for income taxes for the year ended December 31, 2007 was caused by the continuation of start up expenses, higher scrap rates and lower sales resulting in higher per unit expenses.

Our Ceradyne Boron Product subsidiary's income before provision for income taxes for the year ended December 31, 2007 was \$0.7 million.

Income Taxes. Our provision for income taxes for the year ended December 31, 2007 was \$82.3 million, an increase of \$16.1 million, or 24.4%, from \$66.2 million in the prior year. The effective income tax rate for the year ended December 31, 2007 was 36.3% compared to 34.0% in the corresponding prior year period. The

increase in the effective tax rate results from higher state tax rates due to apportionment of more sales inside of California and decreases in extraterritorial income related deductions. These increases to the effective tax rate were partially offset by an increase in the manufacturing deduction.

Liquidity and Capital Resources

We generally have met our operating and capital requirements with cash flow from operating activities and proceeds from the sale of shares of our common stock.

Our net cash position increased by \$60.2 million during the year ended December 31, 2008, compared to a \$141.6 million increase during the year ended December 31, 2007. For the year ended December 31, 2008, cash flow provided by operating activities amounted to \$156.0 million. The primary factors contributing to cash flow from operating activities in the year ended December 31, 2008, were net income of \$106.8 million, and adjustments of non-cash amounts related to depreciation and amortization of \$36.7 million, stock compensation of \$3.1 million, and \$5.9 million of unrealized losses on auction rate securities. Also contributing to the increase in cash flow from operating activities was a decrease in accounts receivable and other receivables of \$21.2 million due to lower sales compared to the previous year, a decrease in production tooling of \$2.0 million due to lower production volume, an increase of \$9.8 million in other long term liabilities due primarily to the accrual of the pre-acquisition commitment by SemEquip, Inc. to pay incentive compensation to several of its employees and advisors, and an increase of \$6.3 million in the accrual for employee benefits at our ESK and Boron Products subsidiaries due to poor investment results during 2008 at their respective pension funds. These contributions to our cash flow from operating activities were offset in part by deferred income taxes of \$1.7 million, increased levels of inventories of \$6.6 million, an increase of \$10.8 million in prepaid expenses due to an increase in tax deposits, and decreases of \$13.3 million in accounts payable, \$3.3 million in accrued expenses and income taxes payable. Higher levels of inventories were largely caused by a \$6.9 increase in raw materials and finished goods inventory in connection with the expansion of our ceramic crucible business in China and in the United States, an increase of \$1.8 million at our Boron segment and an increase of \$4.7 million in inventory at our ESK subsidiary. ESK experienced rapidly declining sales in the fourth quarter of 2008 and due to long lead times in their production cycle could not reduce their inventory levels quick enough to offset the decline in sales during the quarter. These increases in inventory levels were partially offset by a decrease of \$8.9 million in inventories at our ACO division because of a reduction in sales in 2008. Decreases in accounts payable and accrued expenses were caused by lower levels of business activity at our ACO division. Income taxes payable decreased because of lower levels of pre-tax net income in 2008 compared to 2007.

Investing activities consumed \$49.5 million of our cash for the year ended December 31, 2008. This included \$27.2 million for acquisitions, comprising \$23.1 million (net of \$2.2 million cash received) for the acquisition of SemEquip, Inc. and \$4.1 million for the acquisition certain assets and developed technology related to proprietary technical ceramic bearing patents and intellectual property. We also spent \$44.0 million for the purchase of property, plant and equipment. Included in this amount is \$7.2 million for additional capacity for the production of ceramic crucibles at our China and Atlanta facilities, an additional \$3.6 to support the production of raw materials at our Minco subsidiary that are consumed in the production of the ceramic crucibles, \$9.9 million for the purchase of land and buildings to expand our general production capacity at our ESK Ceramics subsidiary's plant in Kempten, Germany, \$6.7 million to increase capacity for the fluid handling product line at ESK and \$3.0 million for rolling mill equipment to support future growth at our Canada segment. These expenditures were partially offset by \$21.7 million of proceeds from sales and maturities of marketable securities.

Financing activities during the year ended December 31, 2008 consumed net cash of \$43.6 million. During the year, we purchased and retired 1,578,237 shares of our common stock at an aggregate cost of \$44.7 million under a stock repurchase program authorized by our Board of Directors. We are authorized to repurchase and retire an additional \$55.3 million for a total of \$100.0 million. The negative effect of exchange rates on cash and cash equivalents of \$2.7 million during the year ended December 31, 2008 was due to our investment in our German subsidiary, ESK Ceramics, and in our Chinese subsidiary, Ceradyne (Tianjin) Technical Ceramics., Ltd.

Our net cash position increased by \$141.6 million during the year ended December 31, 2007, compared to a \$78.0 million decrease during the year ended December 31, 2006. For the year ended December 31, 2007, cash flow provided by operating activities amounted to \$153.6 million. The primary factors contributing to cash flow from operating activities in the year ended December 31, 2007, were net income of \$144.3 million, and adjustments of non-cash amounts related to depreciation and amortization of \$26.8 million and stock compensation of \$2.5 million. A decrease in production tooling and prepaid expenses of \$4.8 million and increases in other liabilities and other long term liability of \$6.1 million added an aggregate of \$10.9 million to cash flow. These contributions were offset in part by deferred income taxes of \$2.3 million, increase in accounts receivable and other receivables of \$3.7 million due to higher amounts of sales over the previous year, increased levels of inventories of \$6.3 million, and decreased levels of accounts payable, accrued expenses, income tax payable and employee benefits that added an aggregate of \$18.4 million. The increase in inventory was due to the increase in sales and production to support the growth of the Advanced Ceramic Operations segment.

During the year ended December 31, 2007, we used \$20.9 million of our cash for investing activities. Uses of cash included \$42.2 million for capital expenditures, \$99.1 million in acquisition costs related to the purchases of Minco, Inc. and Ceradyne Boron Products, purchases of marketable securities of \$700.4 million and we allocated \$2.7 million of cash to a restricted status. Capital expenditures included \$7.8 million to construct a building and purchase equipment for our expansion in China for the production of ceramic crucibles used to manufacture photovoltaic solar cells and \$2.9 million for the expansion at ESK Ceramics for increased production capacity for our BORONEIGE® boron nitride product line. Proceeds from maturities and sales of marketable securities added \$823.5 million of cash flow from investing activities.

Financing activities during the year ended December 31, 2007 provided net cash of \$5.2 million. We received cash proceeds of \$401,000 relating to the issuance of common stock under our stock plan, and proceeds of \$1.3 million from issuance of stock due to exercise of stock options and the gross tax benefit of \$3.5 million due to exercise of stock options and issuance of stock upon vesting of restricted stock units. The effect of exchange rates on cash and equivalents was a positive \$3.7 million due to our investments in our German subsidiary, ESK Ceramics, and in our Chinese subsidiary, Ceradyne (Tianjin) Technical Ceramics Co., Ltd.

During December 2005, we issued \$121.0 million principal amount of 2.875% senior subordinated convertible notes due December 15, 2035. Interest on the notes is payable on December 15 and June 15 of each year, commencing on June 15, 2006. The notes are convertible into 17.1032 shares of our common stock for each \$1,000 principal amount of the notes (which represents a conversion price of approximately \$58.47 per share), subject to adjustment. The notes are convertible only under certain circumstances, including if the price of our common stock reaches, or the trading price of the notes falls below, specified thresholds, if the notes are called for redemption, if specified corporate transactions or fundamental change occur, or during the 10 trading days prior to maturity of the notes. We may redeem the notes at any time after December 20, 2010, for a price equal to 100% of the principal amount plus accrued and unpaid interest, including contingent interest (as described below), if any, up to but excluding the redemption date.

With respect to each \$1,000 principal amount of the notes surrendered for conversion, we will deliver the conversion value to holders as follows: (1) an amount in cash equal to the lesser of (a) the aggregate conversion value of the notes to be converted and (b) \$1,000, and (2) if the aggregate conversion value of the notes to be converted is greater than \$1,000, an amount in shares or cash equal to such aggregate conversion value in excess of \$1,000.

The notes contain put options, which may require us to repurchase in cash all or a portion of the notes on December 15, 2012, December 15, 2015, December 15, 2020, December 15, 2025, and December 15, 2030 at a repurchase price equal to 100% of the principal amount of the notes to be repurchased plus accrued and unpaid interest, including contingent interest (as described below), if any, to but excluding the repurchase date.

We are obligated to pay contingent interest to the holders of the notes during any six-month period from June 15 to December 14 and from December 15 to June 14, commencing with the six-month period beginning December 20, 2010 and ending on June 14, 2011, if the average trading price of the note for the five trading

day period ending on the third trading day immediately preceding the first day of the relevant contingent interest period equals \$1,200 (120% of the principal amount of a note) or more. The amount of contingent interest payable per note for any relevant contingent interest period shall equal 0.25% per annum of the average trading price of a note for the five trading day period ending on the third trading day immediately preceding the first day of the relevant contingent interest period.

In December 2005, we established an unsecured \$10.0 million bank line of credit. As of December 31, 2008, there were no outstanding amounts on the line of credit. However, the available line of credit at December 31, 2008 has been reduced by outstanding letters of credit in the amount of \$1.8 million. The interest rate on the credit line is based on the LIBOR rate for a period of one month plus a margin of 0.6 percent, which equaled 1.0 percent as of December 31, 2008. There is an additional charge per quarter based on a ratio of funded debt to consolidated earnings before interest, income taxes, depreciation and amortization. For the quarter ended December 31, 2008, based on this ratio the additional charge for the unused portion of the credit line amounted to 0.2 percent of the undisbursed portion of the credit line.

Pursuant to the bank line of credit, the Company is subject to certain covenants, which include, among other things, the maintenance of specified minimum amounts of tangible net worth and quick assets to current liabilities ratio. At December 31, 2008, the Company was in compliance with these covenants.

Our cash, cash equivalents and short-term investments totaled \$224.1 million at December 31, 2008, compared to \$187.3 million at December 31, 2007. At December 31, 2008, we had working capital of \$400.8 million, compared to \$353.9 million at December 31, 2007. Our cash position includes amounts denominated in foreign currencies, and the repatriation of those cash balances from our ESK Ceramics subsidiary does not result in additional tax costs. We believe that our current cash and cash equivalents on hand and cash available from the sale of short-term investments, cash available from additional borrowings under our revolving line of credit and cash we expect to generate from operations will be sufficient to finance our anticipated capital and operating requirements for at least the next 12 months. Our anticipated capital requirements primarily relate to the possible expansion of our manufacturing facilities in China and normal replacements of equipment. We also may utilize cash, and, to the extent necessary, borrowings from time to time to acquire other businesses, technologies or product lines that complement our current products, enhance our market coverage, technical capabilities or production capacity, or offer growth opportunities. We have no present agreements for any material acquisitions.

Our material contractual obligations and commitments as of December 31, 2008 are as follows (amounts in thousand):

	Payments Due by Period				
	Total	Less than 1 Year	2-3 Years	4-5 Years	After 5 Years
Debt, principal amount	\$121,000	\$ —	\$ —	\$ —	\$121,000
Capital lease obligations	81	26	45	10	—
Non-cancelable leases	6,709	2,997	3,328	384	—
Pension benefits	10,243	649	1,599	1,819	6,176
Information technology services	1,998	744	1,247	7	—
Cash commitments for interest expense . .	93,926	3,479	6,958	6,958	76,533
Utility contract	9,710	\$ —	9,710	\$ —	\$ —
Total contractual obligations	<u>\$243,669</u>	<u>\$7,895</u>	<u>\$22,887</u>	<u>\$9,178</u>	<u>\$203,709</u>

As of December 31, 2008, we have \$7.2 million of uncertain tax positions. We are unable to make a reasonable estimate regarding settlement of these uncertain tax positions, and as a result, they have been excluded from the table.

Off-Balance Sheet Arrangements

The only off-balance sheet arrangement is the conversion feature of our 2.875% convertible senior subordinated notes discussed above.

Critical Accounting Policies and Estimates

Management's discussion and analysis of financial condition and results of operations, as well as disclosures included elsewhere in this report are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. Preparing these consolidated financial statements requires our management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingencies. Management has not determined how reported amounts would differ based on the application of different accounting policies. Management has also not determined the likelihood that materially different amounts could be reported under different conditions or using different assumptions. We believe that the critical accounting policies that most impact the consolidated financial statements are as described below. A summary of our significant accounting policies is included in Note 2 to our consolidated financial statements which begin on page F-1 of this report.

The application of accounting policies requires the use of judgment and estimates. As it relates to the Company, estimates and forecasts are required to determine sales returns and reserves, rebate reserves, allowances for doubtful accounts, reserves for excess and obsolete inventory, investments in unconsolidated affiliates, workers' compensation liabilities, employee benefit related liabilities, income taxes, any temporary or other than temporary impairment of assets, forecasted transactions to be hedged, litigation reserves and contingencies.

These matters that are subject to judgments and estimation are inherently uncertain, and different amounts could be reported using different assumptions and estimates. Management uses its best estimates and judgments in determining the appropriate amount to reflect in the financial statements, using historical experience and all available information. The Company also uses the assistance of outside experts where appropriate. The Company applies estimation methodologies consistently from year to year.

The Company believes the following are the critical accounting policies which could have the most significant effect on the Company's reported results and require subjective or complex judgments by management.

Sales Recognition. Sales are recorded when all of the following have occurred: an agreement of sale exists, the product has been delivered according to the terms of the sales order and collection is reasonably assured. Management is required to make judgments about whether or not collection is reasonably assured. We reduce revenue with reserves for sales returns. Allowances, which are recorded at the time revenue is recognized, in accordance with SFAS No. 48, "Revenue Recognition When Right of Return Exists," are based upon historical sales returns. We do not record a warranty reserve on the sale of our products. For our largest product line, body armor, all of which is sold to the U.S. government, each lot of body armor is tested at an independent laboratory and the lot cannot be released for shipment to the U.S. government until positive test results are received by both the U.S. government and us. For our non-body armor sales, we have experienced minimal claims from these types of sales. Additionally, due to the inherent nature, strength, durability and structural properties of ceramics, as well as a rigid quality control program that includes, for some of our customers, having the customer accept quality test results prior to shipment, we do not believe a warranty reserve is necessary.

Accounts Receivable. We review our trade accounts receivables and our estimates of the allowance for doubtful accounts each period. The allowance for doubtful accounts is determined by analyzing specific customer accounts and assessing the risk of uncollectibility based on insolvency, disputes or other collection issues. In addition, we routinely analyze the different aging categories and establish allowances based on the length of time receivables are past due (based on contractual terms). A write-off will occur if the settlement of the account receivable is less than the carrying amount or we ultimately determine the balance will not be

collected. The amounts we will ultimately realize could differ materially from the amounts assumed in arriving at the allowance for doubtful accounts in the financial statements included in this report beginning on page F-1.

Inventories. Inventories are valued at the lower of cost (first-in, first-out) or market. The write-down of inventory for obsolete items is based on our estimate of the amount considered obsolete based on specific reviews of inventory items. In estimating the allowance, we rely on our knowledge of the industry as well as our current inventory levels. The amounts we will ultimately realize could differ from the estimated amounts. Inventory costs include the cost of material, labor and manufacturing overhead.

Accounting for Long-Lived Assets. In accordance with Statement of Financial Accounting Standards ("SFAS"), SFAS No. 144, "Accounting for the Impairment or Disposal for Long-Lived Assets" ("SFAS 144") long-lived assets and intangible assets with definite lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Impairment indicators include, among other conditions, cash flow deficits, historic or anticipated declines in revenue or operating profit and adverse legal or regulatory developments. If it is determined that such indicators are present and the review indicates that the assets will not be fully recoverable, based on undiscounted estimated cash flow over the remaining amortization periods, their carrying values are reduced to estimated fair market value. Estimated fair market value is determined primarily using the anticipated cash flow discounted at a rate commensurate with the risk involved. For the purposes of identifying and measuring impairment, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flow are largely independent of the cash flow of other assets and liabilities.

Goodwill and Intangible Assets. In accordance with SFAS No. 142, "Goodwill and Other Intangible Assets" ("SFAS 142") goodwill is not being amortized, but instead is subject to an annual assessment of impairment by applying a fair-value based test.

The Company performs an annual impairment test for goodwill as of the fiscal year end in the fourth quarter of each year. Goodwill is allocated to six reporting units, which represent the Company's operating segments. The Company has defined its reporting units and completed the impairment testing of goodwill at the operating segment level, as defined by SFAS 131, "Disclosures about Segments of an Enterprise and Related Information." The Company's reporting units are: Advanced Ceramics Operations, Semicon Associates, Thermo Materials, ESK Ceramics, Ceradyne Canada and Ceradyne Boron Products. SFAS 142 requires the Company to compare the fair value of the goodwill to the carrying amount on an annual basis to determine if there is potential impairment. If the fair value of goodwill is less than the carrying value, an impairment loss is recorded to the extent that the fair value of the goodwill is less than the carrying value. Fair value was determined based on discounted cash flows and market multiples for each business unit with significant goodwill. We compared each reporting unit's fair value to its carrying value. The use of discounted cash flows requires that we make various economic, market and business assumptions in developing our internal forecasts, the useful life over which cash flows will occur, and determination of our weighted average cost of capital that reflect our best estimates when performing the annual impairment test. We believe the methods we use to determine these underlying assumptions and estimates are reasonable. However, our assumptions and estimates may differ significantly from actual results, or circumstances could change in the future which may then cause us to later conclude that an impairment exists, or with hindsight, it may appear that we could have understated the extent of impairment based on new information that was unknown at the prior testing date. We may incur a goodwill impairment charge in the future, if for example, the market price of our stock materially declines, if the financial results of our operations deteriorate or other circumstances require an impairment charge. At December 31, 2008, our net book value was below our market capitalization. Based on a control factor that was considered and the discounted cash flows used in our assessment, an impairment to goodwill was not warranted at December 31, 2008. At December 31, 2008, no impairment of goodwill had occurred. Intangible assets with definite lives are amortized over their estimated useful lives based on the economic consumption method.

Pension. The Company provides pension benefits to its employees of its subsidiaries of ESK Ceramics and Ceradyne Boron Products. For the pension plans of both subsidiaries, we make several assumptions that

are used in calculating the expense and liability of the plans. These key assumptions include the expected long-term rate of return on plan assets and the discount rate. In selecting the expected long-term rate of return on assets, we consider the average future rate of earnings expected on the funds invested or to be invested to provide for the benefits under the pension plans. This includes considering the plans' asset allocations and the expected returns likely to be earned over the life of this plan. The discount rate reflects the estimated rate at which an amount that is invested in a portfolio of high-quality debt instruments would provide the future cash flows necessary to pay benefits when they come due. In addition the expense and liabilities of the plan were determined using other assumptions for future experience, such as mortality rates. The actuarial assumptions used by us may differ materially from actual results due to changing market and economic conditions or longer or shorter life spans of the participants. Our actual results could differ materially from those we estimated, which could require us to record a greater amount of pension expense.

Recent Accounting Pronouncements

In December 2007, the FASB issued SFAS No. 141R, "Business Combinations" ("SFAS 141R") which establishes principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. The statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statement to evaluate the nature and financial effects of the business combination. SFAS 141R is effective for financial statements issued for fiscal years beginning after December 15, 2008. The Company does not expect SFAS 141R will have an impact on its consolidated financial statements when effective, but the nature and magnitude of the specific effects will depend upon the nature, terms and size of the acquisitions the Company consummates after the effective date.

In December 2007, the FASB issued SFAS No. 160, "Noncontrolling Interests in Consolidated Financial Statements, an amendment of ARB No. 51" ("SFAS 160"). SFAS 160 introduces significant changes in the accounting and reporting for business acquisitions and noncontrolling interest ("NCI") in a subsidiary. SFAS 160 also changes the accounting for and reporting for the deconsolidation of a subsidiary. Companies are required to adopt the new standard for fiscal years beginning after December 15, 2008. The Company has evaluated the impact of this standard and does not expect it to have a significant impact on its financial position, results of operations or cash flows.

In March 2008, the FASB issued SFAS No. 161, "Disclosures about Derivative Instruments and Hedging Activities — an amendment of FASB Statement No. 133" ("SFAS 161"), which changes the disclosure requirements for derivative instruments and hedging activities. Entities are required to provide enhanced disclosures about (a) how and why an entity uses derivative instruments, (b) how derivative instruments and related hedged items are accounted for under Statement 133 and its related interpretations, and (c) how derivative instruments and related hedged items affect an entity's financial position, financial performance, and cash flows. Companies are required to adopt SFAS 161 for fiscal years beginning after November 15, 2008.

In May 2008, the FASB issued SFAS No. 162, "The Hierarchy of Generally Accepted Accounting Principles." The statement is intended to improve financial reporting by identifying a consistent hierarchy for selecting accounting principles to be used in preparing financial statements that are prepared in conformance with generally accepted accounting principles. Unlike Statement on Auditing Standards (SAS) No. 69, "The Meaning of Present in Conformity With GAAP," FAS No. 162 is directed to the entity rather than the auditor. The statement is effective 60 days following the SEC's approval of the Public Company Accounting Oversight Board (PCAOB) amendments to AU Section 411, "The Meaning of Present Fairly in Conformity with GAAP," and is not expected to have any impact on the Company's results of operations, financial condition or liquidity.

In May 2008, FASB Staff Position ("FSP") No. APB 14-1, "Accounting for Convertible Debt Instruments That May be Settled in Cash upon Conversion (Including Partial Cash Settlement)" ("FSP No. APB 14-1") was issued which specifies that issuers of such instruments should separately account for the liability and equity components in a manner that will reflect the issuer's nonconvertible debt borrowing rate when interest

cost is recognized in subsequent periods. FSP No. APB 14-1 is effective for financial statements issued for fiscal years beginning after December 15, 2008. Early adoption is not permitted. The Company has evaluated the impact of this standard and it is expected to reduce reported earnings upon adoption.

In June 2008, the FASB issued FSP Emerging Issues Task Force (EITF) No. 03-6-1, "Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities." Under the FSP, unvested share-based payment awards that contain rights to receive nonforfeitable dividends (whether paid or unpaid) are participating securities, and should be included in the two-class method of computing EPS. The FSP is effective for fiscal years beginning after December 15, 2008, and interim periods within those years, and is not expected to have a significant impact on the Company's results of operations, financial condition or cash flows.

In April 2008, FSP No. FAS 142-3, "Determination of the Useful Life of Intangible Assets" ("FSP No. FAS 142-3") was issued which provides for additional considerations to be used in determining useful lives and requires additional disclosure regarding renewals. FSP No. FAS 142-3 is effective for fiscal years beginning after December 15, 2008. Early adoption is not permitted. The Company is currently evaluating the impact of this standard.

In October 2008, the FASB issued FSP SFAS No. 157-3, "Determining the Fair Value of a Financial Asset When the Market for That Asset Is Not Active", ("FSP 157-3"), to clarify the application of the provisions of SFAS 157 in an inactive market and how an entity would determine fair value in an inactive market. FSP 157-3 was effective upon issuance and applies to the Company's current financial statements. The application of the provisions of FSP 157-3 did not materially affect the Company's results of operations or financial condition as of and for the year ended December 31, 2008.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Our exposure to market rate risk for changes in interest rates relates primarily to our investment portfolio and our debt. We have not used derivative financial instruments in our investment portfolio. We place our investments with high-quality issuers and, by policy, limit the amount of credit exposure to any one issuer. We protect and preserve our invested funds by limiting default, market and reinvestment risk. Our investments in marketable securities consist primarily of high-grade corporate and government securities with maturities of less than two years. Investments purchased with an original maturity of three months or less are considered cash equivalents. Our long term investments at December 31, 2008 included \$24.4 million of auction rate securities net of a pre-tax temporary impairment charge of \$8.6 million against accumulated other comprehensive income and a pre-tax other than temporary impairment charge of \$8.0 million against earnings. The Company's investments in ARS represent interests in collateralized debt obligations supported by pools of residential and commercial mortgages or credit cards, insurance securitizations and other structured credits, including corporate bonds. These auction rate securities are intended to provide liquidity via an auction process that resets the applicable interest rate at predetermined calendar intervals, allowing investors to either roll over their holdings or gain immediate liquidity by selling such interests at par. During the second half of the year 2007, the auctions for these securities failed. As a result of current negative conditions in the global credit markets, auctions for the Company's investment in these securities have recently failed to settle on their respective settlement dates. Consequently, the investments are not currently liquid through the normal auction process and may be liquid if a buyer is found outside the auction process.

The Company reviews impairments associated with the above in accordance with Emerging Issues Task Force (EITF) 03-1 and FSP SFAS 115-1 and 124-1, "The Meaning of Other-Than-Temporary-Impairment and Its Application to Certain Investments," to determine the classification of the impairment as "temporary" or "other-than-temporary." A temporary impairment charge results in an unrealized loss being recorded in the other comprehensive income component of stockholders' equity. Such an unrealized loss does not reduce net income for the applicable accounting period because the loss is not viewed as other-than-temporary. The Company believes that a portion of the impairment of its auction rate securities investments is temporary and a portion is other-than-temporary.

We classify all of our investments as available-for-sale. Available-for-sale securities are carried at fair value, with unrealized gains and losses, net of tax, reported in a separate component of stockholders' equity. Average maturity of our investment portfolio is 97 days; therefore, the movement of interest rates should not have a material impact on our balance sheet or income statement.

At any time, a significant increase/decrease in interest rates will have an impact on the fair market value and interest earnings of our investment portfolio. We do not currently hedge this interest rate exposure. We have performed a sensitivity analysis as of December 31, 2008 and 2007, using a modeling technique that measures the change in the fair values arising from a hypothetical 50 basis points and 100 basis points adverse movement in the levels of interest rates across the entire yield curve, which are representative of historical movements in the Federal Funds Rate with all other variables held constant. The analysis covers our investment and is based on the weighted-average maturity of our investments as of December 31, 2008 and 2007. The sensitivity analysis indicated that a hypothetical 50 basis points adverse movement in interest rates would result in a loss in the fair values of our investment instruments of approximately \$0.5 million at December 31, 2008 and approximately \$2,500 at December 31, 2007. Similarly a hypothetical 100 basis points adverse movement in interest rates would result in a loss in the fair values of our investments of approximately \$1.0 million at December 31, 2008 and approximately \$5,000 at December 31, 2007.

Actual maturities may differ from contractual maturities because the issuer of the securities may have the right to repurchase such securities. We classify short-term investments in current assets, as all such investments are available for current operations.

We are not exposed to market risks related to fluctuations in interest rates on our debt as it is fixed rate debt. Consequently, we do not utilize interest rate swaps or other types of derivative financial instruments regarding our debt.

Foreign Currency Fluctuations

We enter into foreign exchange forward contracts to reduce earnings and cash flow volatility associated with foreign exchange rate changes to allow our management team to focus its attention on its core business operations. Accordingly, we enter into contracts which change in value as foreign exchange rates change to economically offset the effect of changes in value of foreign currency assets and liabilities, commitments and anticipated foreign currency denominated sales and operating expenses. We enter into foreign exchange forward contracts in amounts between minimum and maximum anticipated foreign exchange exposures, generally for periods not to exceed one year. These derivative instruments are not designated as accounting hedges.

We measure the financial statements of our foreign subsidiaries using the local currency as the functional currency. Assets and liabilities of these subsidiaries are translated at the exchange rate on the balance sheet date. Revenues, costs and expenses are translated at the rates of exchange prevailing during the year. Translation adjustments resulting from this process are included in stockholders' equity. Gains and losses from foreign currency transactions are included in other income miscellaneous.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The Consolidated Financial Statements and Supplementary Data commence at page F-1 of this report and an index thereto is included in Part IV, Item 15 of this report.

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, we carried out an evaluation, under the supervision and with the participation of our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934) were effective.

Changes in Internal Control over Financial Reporting

Our management evaluated our internal control over financial reporting and there have been no changes during the fiscal quarter ended December 31, 2008 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2008. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control — Integrated Framework. Based on our assessment, we have concluded that, as of December 31, 2008, our internal control over financial reporting was effective based on those criteria.

We have excluded one of our wholly-owned subsidiaries, SemEquip, Inc., from our assessment of internal control over financial reporting as of December 31, 2008 because we acquired this company in 2008. The total assets of SemEquip, Inc. represent 8.6% of our consolidated assets as of December 31, 2008, and its revenues represent 0.1% of our consolidated revenues for the year ended December 31, 2008.

Ceradyne's independent registered public accounting firm, PricewaterhouseCoopers LLP, issued a report on the effectiveness of our internal control over financial reporting as of December 31, 2008, which appears herein.

ITEM 9B. OTHER INFORMATION

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information in response to this item (except for certain information concerning executive officers included in Part I of this report) is incorporated by reference from the registrant's definitive proxy statement to be filed with the Commission within 120 days after the close of registrant's fiscal year.

ITEM 11. EXECUTIVE COMPENSATION

Information in response to this item is incorporated by reference from the registrant's definitive proxy statement to be filed with the Commission within 120 days after the close of registrant's fiscal year.

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

Information in response to this item is incorporated by reference from the registrant's definitive proxy statement to be filed with the Commission within 120 days after the close of registrant's fiscal year.

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

Information in response to this item is incorporated by reference from the registrant's definitive proxy statement to be filed with the Commission within 120 days after the close of registrant's fiscal year.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information in response to this item is incorporated by reference from the registrant's definitive proxy statement to be filed with the Commission within 120 days after the close of registrant's fiscal year.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) List of documents filed as part of this report:

Financial Statements:

	<u>Page</u>
Report of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets at December 31, 2008 and 2007	F-2
Consolidated Statements of Income for the Years Ended December 31, 2008, 2007 and 2006 . .	F-3
Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2008, 2007 and 2006	F-4
Consolidated Statements of Cash Flows for the Years Ended December 31, 2008, 2007 and 2006	F-5
Notes to Consolidated Financial Statements	F-6

(b) List of Exhibits

<u>Exhibit Number</u>	<u>Description</u>
2.1	Sale and Purchase Agreement dated June 26, 2007, among Ceradyne, Inc., Ceradyne EPB, Inc., EaglePicher Boron, LLC, EaglePicher Technology Holdings, LLC and EaglePicher Corporation. Incorporated herein by reference to Exhibit 2.1 to the Registrant's Form 10-Q Report for the quarter ended June 30, 2007.
3.1	Restated Certificate of Incorporation of Ceradyne, Inc., as filed with the Secretary of State of Delaware on May 25, 1987. Incorporated herein by reference to Exhibit 3.1 to the Registrant's Form 10-Q Report for the quarter ended June 30, 2006.
3.2	Certificate of Amendment of Restated Certificate of Incorporation of Ceradyne, Inc., as filed with the Secretary of State of Delaware on June 8, 2006. Incorporated herein by reference to Exhibit 3.2 to the Registrant's Form 10-Q Report for the quarter ended June 30, 2006.
3.3	Bylaws of Registrant. Incorporated herein by reference to Exhibit 3.3 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007.
3.4	Amendment to Bylaws of Registrant, adopted April 29, 1996. Incorporated herein by reference to Exhibit 3.4 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007.
3.5	Amendment to Bylaws of Registrant, adopted December 18, 2007. Incorporated herein by reference to Exhibit 3.5 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2007.
4.1	Indenture dated December 19, 2005, between Ceradyne, Inc. and Union Bank of California, N.A., as Trustee. Incorporated herein by reference to Exhibit 4.1 of Registrant's Form 8-K Current Report dated December 13, 2005, filed with the Commission on December 19, 2005.
4.2	First Supplemental Indenture dated December 19, 2005, between Ceradyne, Inc. and Union Bank of California, N.A., as Trustee. Incorporated herein by reference to Exhibit 4.2 of Registrant's Form 8-K Current Report dated December 13, 2005, filed with the Commission on December 19, 2005.
4.3	Form of 2.875% Senior Subordinated Convertible Note due 2035. Incorporated herein by reference to Exhibit 4.3 of Registrant's Form 8-K Current Report dated December 13, 2005, filed with the Commission on December 19, 2005.
10.1	Intentionally omitted.
10.2	Lease covering premises located at 3169-A Red Hill Avenue, Costa Mesa, California dated October 28, 1985. Incorporated herein by reference to Exhibit 10.30 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1985.
10.3	Lease dated March 31, 1986 covering premises located at 3163 Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.45 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1986.

<u>Exhibit Number</u>	<u>Description</u>
10.4	Lease dated August 5, 1986 covering premises located at 225 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.46 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1986.
10.5	Short-form Memorandum of Lease Assignment dated December 15, 1986, and Lease dated June 23, 1980, covering premises located at 3449 Church Street, Scottdale, Georgia. Incorporated herein by reference to Exhibit 10.47 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1986.
10.6	Intentionally omitted.
10.7*	Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.31 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1994.
10.8*	Amendment No. 1 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 4.2 to Registrant's Registration Statement on Form S-8 (File No. 33-61675).
10.9	Intentionally omitted.
10.10	Intentionally omitted.
10.11	Amendment No. 2, dated June 5, 1995, to Lease covering premises located at 3169-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.33 to the Registrant's Registration Statement on Form S-1 (File No. 33-62345).
10.12	Amendment No. 2, dated June 5, 1995, to Lease dated March 31, 1986 covering premises located at 3163 Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.34 to the Registrant's Registration Statement on Form S-1 (File No. 33-62345).
10.13	Amendment No. 2, dated June 5, 1995, to Lease dated August 5, 1986 covering premises located at 225 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.35 to the Registrant's Registration Statement on Form S-1 (File No. 33-62345).
10.14*	Amendment No. 2 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1996.
10.15*	Amendment No. 3 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 4.4 to Registrant's Registration Statement on Form S-8 (File No. 333-31679).
10.16*	Amendment No. 4 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.29 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1998.
10.17*	Amendment No. 5 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.29 to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2000.
10.18*	Amendment No. 6 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporate herein by reference to Exhibit 4.7 to the Registrant's Registration Statement on Form S-8 (File No. 333-64094).
10.19	Intentionally omitted.
10.20	Intentionally omitted.
10.21*	Amendment No. 7 to the Ceradyne, Inc. 1994 Stock Incentive Plan. Incorporated herein by referenced to Exhibit 10.34 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2002.
10.22*	Ceradyne, Inc. 2003 Stock Incentive Plan, as Amended and Restated as of April 11, 2005. Incorporated herein by reference to Exhibit 10.1 to the Registrant's Form 8-K Current Report dated May 23, 2005, filed with the Commission on May 26, 2005.
10.23*	Form of Stock Option Agreement for use under the 2003 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.2 to the Registrant's Form 8-K Current Report dated May 23, 2005, filed with the Commission on May 26, 2005.
10.24*	Form of Restricted Stock Unit Award Agreement for use under the 2003 Stock Incentive Plan. Incorporated herein by reference to Exhibit 10.3 to the Registrant's Form 8-K Current Report dated May 23, 2005, filed with the Commission on May 26, 2005.

<u>Exhibit Number</u>	<u>Description</u>
10.25	Lease agreement between California State Teachers' Retirement System, as Landlord and CERADYNE, INC., as tenant. Incorporated herein by reference to Exhibit 10.23 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2003.
10.26	Intentionally omitted.
10.27	Intentionally omitted.
10.28	Intentionally omitted.
10.29	Intentionally omitted.
10.30	Intentionally omitted.
10.31	Intentionally omitted.
10.32	Lease dated March 11, 1997 covering premises located at 3159-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.32 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.33	Extension No. 2, dated February 2, 2005, to Lease dated March 11, 1997 covering premises located at 3159-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.33 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.34	Lease dated January 24, 2001 covering premises located at 3161 Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.34 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.35	Extension No. 1, dated February 2, 2005, to Lease dated January 24, 2001 covering premises located at 3161 Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.35 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.36	Extension No. 4, dated February 2, 2005, to Lease dated March 31, 1986 covering premises located at 3163 Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.37	Extension No. 4, dated February 2, 2005, to Lease dated October 28, 1985 covering premises located at 3169-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.37 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.38	Lease dated October 28, 1985 covering premises located at 3169-B Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.38 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.39	Extension No. 4, dated February 2, 2005, to Lease dated October 28, 1985 covering premises located at 3169-B Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.39 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.40	Extension No. 4, dated February 4, 2005, to Lease dated August 5, 1986 covering premises located at 225 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.40 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.41	Lease dated February 4, 2005, covering premises located at 201 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.41 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.42	Lease dated February 4, 2005, covering premises located at 3159-B Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.42 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.43	Extension No. 1, dated February 7, 2005, to Lease dated March 23, 2004 covering premises located at 235 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.43 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.

<u>Exhibit Number</u>	<u>Description</u>
10.44	Lease dated August 6, 2001 covering premises located at 3165-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.44 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.45	Extension No. 1, dated March 9, 2005, to Lease dated August 6, 2001 covering premises located at 3165-A Red Hill Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.45 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.46	Lease dated January 5, 2005 covering premises located at 205 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.46 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
10.47	Extension No. 1, dated July 14, 2005, to Lease dated January 5, 2005, covering premises located at 205 Paularino Avenue, Costa Mesa, California. Incorporated herein by reference to Exhibit 10.47 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.
12.1	Computation of Ratio of Earnings to Fixed Charges.
14.1	Code of Business Conduct and Ethics as amended and restated on March 18, 2008. Incorporated herein by reference to Exhibit 14.1 to the Registrant's Form 8-K Current Report dated March 18, 2008, filed with the Commission on March 24, 2008.
21.1	Subsidiaries of the Registrant.
23.1	Consent of Independent Registered Public Accounting Firm, PricewaterhouseCoopers LLP.
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* Each of these exhibits constitutes a management contract, compensatory plan, or arrangement.

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CERADYNE, INC.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To Board of Directors and Stockholders of Ceradyne, Inc.,

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, stockholders' equity and cash flows present fairly, in all material respects, the financial position of Ceradyne, Inc. and its subsidiaries at December 31, 2008 and December 31, 2007, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2008 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits in 2008, 2007 and 2006. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for uncertain tax positions in 2007.

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. As described in Management's Report on Internal Control over Financial Reporting, management has excluded SemEquip, Inc. from its assessment of internal control over financial reporting as of December 31, 2008 because it was acquired by the Company on August 11, 2008. We have also excluded SemEquip, Inc. from our audit of internal control over financial reporting. SemEquip's total assets and total revenues represent, in aggregate, 6.3% and 0.09%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2008.

/s/ PricewaterhouseCoopers LLP
Orange County, California
February 23, 2009

CERADYNE, INC.
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2008	2007
	(In thousands, except for share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$215,282	\$155,103
Short term investments	6,140	29,582
Restricted cash	2,702	2,660
Accounts receivable, net of allowances for doubtful accounts of \$686 and \$792 in 2008 and 2007, respectively	64,631	85,346
Other receivables	5,316	5,704
Inventories, net	101,017	92,781
Production tooling, net	14,563	16,632
Prepaid expenses and other	24,170	12,391
Deferred tax asset	11,967	12,455
Total current assets	445,788	412,654
Property, plant and equipment, net	251,928	243,892
Long term investments	24,434	38,089
Intangible assets, net	84,384	37,578
Goodwill	45,324	46,848
Other assets	3,139	4,225
Total assets	\$854,997	\$783,286
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 22,954	\$ 35,990
Accrued expenses	21,999	22,483
Income taxes payable	—	258
Total current liabilities	44,953	58,731
Long-term debt	121,000	121,000
Employee benefits	19,088	13,650
Other long term liabilities	41,816	4,985
Deferred tax liability	64	6,291
Total liabilities	226,921	204,657
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Common Stock, \$0.01 par value: 100,000,000 authorized; 25,830,374 and 27,318,530 shares issued and outstanding at December 31, 2008 and 2007, respectively	259	272
Additional paid in capital	146,063	185,702
Retained earnings	468,051	361,301
Accumulated other comprehensive income	13,703	31,354
Total stockholders' equity	628,076	578,629
Total liabilities and stockholders' equity	\$854,997	\$783,286

The accompanying notes are an integral part of these consolidated statements

CERADYNE, INC.
CONSOLIDATED STATEMENTS OF INCOME

	Years Ended December 31,		
	2008	2007	2006
	(In thousands, except for per share data)		
Net sales	\$680,197	\$756,835	\$662,888
Cost of product sales	414,885	450,787	401,991
Gross profit	265,312	306,048	260,897
Operating expenses:			
Selling	31,231	26,917	22,919
General and administrative	43,889	40,801	35,293
Acquisition related charge	9,824	—	—
Research and development	14,782	17,552	9,909
	99,726	85,270	68,121
Operating income	165,586	220,778	192,776
Other income (expense)			
Royalty income	66	174	120
Interest income	7,553	12,394	6,687
Miscellaneous, net	(4,425)	(2,599)	(919)
Interest expense	(4,155)	(4,204)	(4,105)
	(961)	5,765	1,783
Income before provision for income taxes	164,625	226,543	194,559
Provision for income taxes	57,875	82,278	66,155
Net income	\$106,750	\$144,265	\$128,404
Net income per common share:			
Basic	\$ 4.04	\$ 5.29	\$ 4.77
Diluted	\$ 4.00	\$ 5.20	\$ 4.69
Shares used in computing per common share amounts:			
Basic	26,446	27,252	26,924
Diluted	26,689	27,732	27,352

The accompanying notes are an integral part of these consolidated statements

CERADYNE, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Retained Earnings	Deferred Compensation	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Number of Shares	Amount				
	(In thousands, except for share data)					
Balance, December 31, 2005	26,795,774	\$170,722	\$ 88,632	\$(1,506)	\$ (7,328)	\$250,520
Comprehensive income:						
Net income	—	—	128,404	—	—	128,404
Net unrealized loss on available-for-sale securities	—	—	—	—	(63)	(63)
Minimum pension liability, net	—	—	—	—	282	282
Cumulative translation adjustment	—	—	—	—	18,401	18,401
Total comprehensive income	—	—	—	—	—	147,024
FAS 158 pension adjustment, net	—	—	—	—	(241)	(241)
Issuance of common stock	29,188	571	—	—	—	571
Exercise of stock options	294,050	2,312	—	—	—	2,312
Tax benefit from exercise of stock options	—	2,524	—	—	—	2,524
Stock based compensation	—	3,901	—	—	—	3,901
Deferred compensation	—	(1,506)	—	1,506	—	—
Balance, December 31, 2006	27,119,012	\$178,524	\$217,036	—	\$11,051	\$406,611
Comprehensive income:						
Net income	—	—	144,265	—	—	144,265
Net unrealized loss on available-for-sale securities	—	—	—	—	(434)	(434)
Net change in pension liability	—	—	—	—	1,123	1,123
Cumulative translation adjustment	—	—	—	—	19,614	19,614
Total comprehensive income	—	—	—	—	—	164,568
Issuance of common stock	19,204	401	—	—	—	401
Exercise of stock options	180,314	1,297	—	—	—	1,297
Tax benefit from exercise of stock options	—	3,301	—	—	—	3,301
Stock based compensation	—	2,451	—	—	—	2,451
Balance, December 31, 2007	27,318,530	\$185,974	\$361,301	—	\$31,354	\$578,629
Comprehensive income:						
Net income	—	—	106,750	—	—	106,750
Net unrealized loss on available-for-sale securities	—	—	—	—	(5,271)	(5,271)
Net change in pension liability	—	—	—	—	(3,296)	(3,296)
Cumulative translation adjustment	—	—	—	—	(9,084)	(9,084)
Total comprehensive income	—	—	—	—	—	89,099
Issuance of common stock	55,281	809	—	—	—	809
Repurchases of common stock	(1,578,237)	(44,705)	—	—	—	(44,705)
Exercise of stock options	34,800	366	—	—	—	366
Tax benefit from exercise of stock options	—	769	—	—	—	769
Stock based compensation	—	3,109	—	—	—	3,109
Balance, December 31, 2008	<u>25,830,374</u>	<u>\$146,322</u>	<u>\$468,051</u>	<u>\$ —</u>	<u>\$13,703</u>	<u>\$628,076</u>

The accompanying notes are an integral part of these consolidated statements

CERADYNE, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31		
	2008	2007	2006
	(In thousands)		
Cash flows from operating activities:			
Net income	\$106,750	\$ 144,265	\$ 128,404
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	36,668	26,751	18,054
Deferred income taxes	(1,685)	(2,288)	(4,938)
Stock compensation	3,109	2,451	3,901
Net unrealized loss on auction rate securities	5,870	—	—
Loss on equipment disposal	257	908	152
Changes in operating assets and liabilities, net of assets acquired:			
Accounts receivable, net	20,830	(1,584)	(17,392)
Other receivables	333	(2,149)	(607)
Inventories, net	(6,623)	(6,270)	(2,987)
Production tooling, net	2,018	4,473	(5,670)
Prepaid expenses and other	(10,825)	337	(4,388)
Other assets	(265)	(974)	27
Accounts payable	(13,256)	(3,797)	10,749
Accrued expenses	(3,029)	(827)	2,209
Income tax payable	(232)	(12,754)	3,762
Other liabilities	114	1,125	7,265
Other long term liability	9,667	4,985	686
Employee benefits	6,269	(1,066)	—
Net cash provided by operating activities	155,970	153,586	139,227
Cash flows from investing activities:			
Purchases of property, plant and equipment	(44,047)	(42,245)	(36,008)
Changes in restricted cash	(42)	(2,660)	—
Purchases of marketable securities	—	(700,443)	(673,214)
Proceeds from sales and maturities of marketable securities	21,738	823,499	490,488
Acquisition of businesses, net of cash acquired	(27,208)	(99,098)	(6,679)
Proceeds from sale of equipment	84	9	—
Net cash (used in) investing activities	(49,475)	(20,938)	(225,413)
Cash flows from financing activities:			
Proceeds from issuance of common stock for stock plans	—	401	571
Proceeds from issuance of stock due to exercise of stock options	366	1,297	2,312
Tax benefit due to exercise of stock options	769	3,531	2,884
Shares repurchased	(44,705)	—	—
Net cash (used in) provided by financing activities	(43,570)	5,229	5,767
Effect of exchange rates on cash and cash equivalents	(2,746)	3,679	2,424
Increase (decrease) in cash and cash equivalents	60,179	141,556	(77,995)
Cash and cash equivalents, beginning of period	155,103	13,547	91,542
Cash and cash equivalents, end of period	\$215,282	\$ 155,103	\$ 13,547
Supplemental disclosures of cash flow information:			
Interest paid	\$ 3,484	\$ 3,520	\$ 3,452
Income taxes paid	\$ 63,545	\$ 90,775	\$ 65,333
Supplemental schedule of non-cash financing activities:			
Fulfillment of 401(k) obligations through the issuance of stock	\$ 1,291	\$ 1,085	\$ 828

The accompanying notes are an integral part of these consolidated statements

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of Business

Ceradyne, Inc. ("Ceradyne" or "the Company") develops, manufactures and markets advanced technical ceramic products and components for defense, industrial, automotive/diesel and commercial applications. The Company's expertise in ceramic material science as well as a vertically integrated approach of designing much of its key equipment and controlling the manufacturing process from raw material powders to finished product allows the Company to design and manufacture precision, high quality advanced technical ceramic products to meet demanding customer specifications. The Company markets its products to a broad range of industries in 63 countries. The Company's customers include the U.S. government, prime government contractors and large industrial and commercial manufacturers.

In many high performance applications, products made of advanced technical ceramics meet specifications that similar products made of metals, plastics or traditional ceramics cannot achieve. Advanced technical ceramics can withstand extremely high temperatures, combine hardness with light weight, are highly resistant to corrosion and wear, and often have excellent electrical insulation capabilities, special electronic properties and low friction characteristics.

2. Summary of Significant Accounting Policies

a. Principles of Consolidation and Nature of Operations

The consolidated financial statements include the financial statements of Ceradyne, Inc. (a Delaware Corporation), and its subsidiaries. Ceradyne, Inc. and its subsidiaries are collectively referred to herein as the "Company". All significant intercompany accounts and transactions have been eliminated.

b. Cash and Cash Equivalents

The Company considers all highly liquid investments with an initial maturity of three months or less when purchased to be cash equivalents.

c. Investments

The Company's short term investments consist of marketable securities, primarily high-grade corporate and government securities. The Company's long term investments consist of auction rate securities ("ARS"). The Company classifies its investments as available-for-sale based on the Company's intent.

On January 1, 2008, the Company adopted SFAS No. 157, "Fair Value Measurements" ("SFAS 157"). This new standard addresses how companies should measure fair value when they are required to use a fair value measure for recognition or disclosure purposes under generally accepted accounting principles. In accordance with FASB Staff Position FAS 157-2, Effective Date of SFAS 157, the Company deferred the adoption of SFAS 157 for one year for nonfinancial assets and nonfinancial liabilities that are recognized or disclosed at fair value in the financial statements on a nonrecurring basis.

SFAS 157 requires that assets and liabilities carried at fair value be classified and disclosed in one of the following three categories:

Level 1: quoted market prices in active markets for identical assets and liabilities

Level 2: observable market based inputs or unobservable inputs that are corroborated by market data

Level 3: unobservable inputs that are not corroborated by market data

The carrying value of cash and cash equivalents, accounts receivable and trade payables approximates the fair value due to their short-term maturities.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

For recognition purposes, on a recurring basis, the Company measures available for sale short-term and long-term investments at fair value. Short-term investments had an aggregate fair value of \$6.1 million at December 31, 2008 and \$29.6 million at December 31, 2007. The fair value of these investments is determined using quoted prices in active markets. Long-term investments, comprising auction rate securities, had an aggregate fair value of \$24.4 million at December 31, 2008 and \$38.1 million at December 31, 2007. Long term investments at December 31, 2008 reflect the impact of cumulative pre-tax temporary impairment charges of \$8.6 million against accumulated other comprehensive income and cumulative pre-tax other than temporary impairment charges of \$8.0 million, which comprised charges in the income statement of \$5.9 million and \$2.1 million in 2008 and 2007, respectively, due to reductions in the value of its investments in auction rate securities. The Company's investments in ARS represent interests in insurance securitizations supported by pools of residential and commercial mortgages, asset backed securities and other structured credits relating to the credit risk of various bond guarantors. These ARS were intended to provide liquidity via an auction process that resets the applicable interest rate at predetermined calendar intervals, allowing investors to either roll over their holdings or gain immediate liquidity by selling such interests at par. During the second half of the year 2007 and continuing into 2008, the auctions for these securities failed. As a result of current negative conditions in the global credit markets, auctions for the Company's investment in these securities have recently failed to settle on their respective settlement dates. Consequently, the investments are not currently liquid through the normal auction process and may be liquid if a buyer is found outside the auction process.

Prior to June 30, 2008, the Company was able to determine the fair value of its investments in ARS using a market approach valuation technique based on Level 2 inputs that did not require significant adjustment. Since June 30, 2008, the market demand for ARS has declined significantly due to the complexity of these instruments, the difficulty of determining the values of some of the underlying assets, declines in the issuer's credit quality and disruptions in the credit markets. At December 31, 2008, the Company determined that the market for its investments in ARS and for similar securities was not active since there were few observable or recent transactions for these securities or similar securities. The Company's investments in ARS were classified within Level 3 of the fair value hierarchy because the Company determined that significant adjustments using unobservable inputs were required to determine fair value as of December 31, 2008.

An auction rate security is a type of structured financial instrument where its fair value can be estimated based on a valuation technique that includes the present value of future cash flows (principal and interest payments), review of the underlying collateral and considers relevant probability weighted and risk adjusted observable inputs and minimizes the use of unobservable inputs. Probability weighted inputs included the following:

- Probability of earning maximum rate until maturity
- Probability of passing auction at some point in the future
- Probability of default at some point in the future (with appropriate loss severity assumptions)

The Company determined that the appropriate risk-free discount rate (before risk adjustments) used to discount the contractual cash flows of its ARS ranged from 0.3 to 3.4 percent, based on the term structure of the auction rate security. Liquidity risk premiums are used to adjust the risk-free discount rate for each auction rate security to reflect uncertainty and observed volatility of the current market environment. The risk of nonperformance has been captured within the probability of default and loss severity assumptions noted above. The risk-adjusted discount rate, which incorporates liquidity risk, appropriately reflects the Company's estimate of the assumptions that market participants would use (including probability weighted inputs noted above) to estimate the selling price of the asset at the measurement date.

In determining whether the decline in value of the ARS investments was other than temporary, the Company considered several factors including, but not limited to, the following: (1) the reasons for the decline in value (underlying collateral, credit event, interest related or market fluctuations); (2) the Company's ability

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

and intent to hold the investments for a sufficient period of time to allow for recovery of value; (3) whether the decline is substantial; and (4) the historical and anticipated duration of the events causing the decline in value. The evaluation for other than temporary impairments is a quantitative and qualitative process, which is subject to various risks and uncertainties. The risks and uncertainties include changes in the credit quality of the securities, changes in liquidity as a result of normal market mechanisms or issuer calls of the securities, and the effects of changes in interest rates.

With respect to the ARS that have had temporary reductions, the Company has the intent and ability to hold the ARS investments until recovery of fair value, which may be maturity or earlier if called, and therefore does not consider these unrealized losses to be other than temporary.

At December 31, 2008, the Company had no derivative financial instruments.

d. Foreign Exchange Risk Management

The Company measures the financial statements of its foreign subsidiaries using the local currency as the functional currency. Assets and liabilities of these subsidiaries are translated at the exchange rate on the balance sheet date. Revenues, costs and expenses are translated at the rates of exchange prevailing during the year. Translation adjustments resulting from this process are included in stockholders' equity. Net gains from foreign currency transactions for the year ended December 31, 2008 were \$1.4 million and are included in other income, miscellaneous.

e. Accounts Receivable, Net

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. The allowance for doubtful accounts is determined by analyzing specific customer accounts and assessing the risk of uncollectibility based on insolvency, disputes or other collection issues. In addition, the Company routinely analyzes the different aging categories and establishes allowances based on the length of time receivables are past due (based on contractual terms). A write-off will occur if the settlement of the account receivable is less than the carrying amount or the Company ultimately determines the balance will not be collected. We do not have any off-balance-sheet credit exposure related to our customers.

The following are changes in the allowance for doubtful accounts for the years ended December 31, 2008, 2007 and 2006 (in thousands):

	<u>Balance at Beginning of Year</u>	<u>Additions</u>	<u>Write-offs and Recoveries</u>	<u>Balance at End of Year</u>
December 31, 2008	\$ 792	\$ 955	\$1,061	\$ 686
December 31, 2007	\$1,158	\$ 111	\$ 477	\$ 792
December 31, 2006	\$ 545	\$1,025	\$ 412	\$1,158

f. Inventories

Inventories are stated at the lower of cost (determined on a standard cost basis which approximates first-in, first-out (FIFO)) or market. The write-down of inventory for obsolete items is based on management's estimate of the amount considered obsolete based on specific reviews of inventory items. In estimating the write-down, management relies on its knowledge of the industry as well as its current inventory levels. The amounts the Company will ultimately realize could differ from amounts estimated by management. Inventory

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

costs include the cost of material, labor and manufacturing overhead. The following is a summary of inventories, net of reserves, by component (in thousands):

	December 31,	
	2008	2007
Raw materials	\$ 18,377	\$22,772
Work-in-process	45,180	46,853
Finished goods	37,460	23,156
	\$101,017	\$92,781

g. Production Tooling

The Company's production tooling primarily consists of graphite tooling used in the manufacturing and furnace processes. This tooling is being amortized over three to nine months and is included in the cost of the products produced and expensed through cost of product sales in the income statement.

h. Property, Plant and Equipment, Net

Property, plant and equipment is recorded at cost and consists of the following (in thousands):

	December 31,	
	2008	2007
Land and land improvements	\$ 17,073	\$ 15,086
Buildings and improvements	97,234	81,965
Machinery and equipment	202,963	179,727
Leasehold improvements	8,241	16,572
Office equipment	26,175	19,512
Construction in progress	13,469	16,880
	365,155	329,742
Accumulated depreciation and amortization	(113,227)	(85,850)
	\$ 251,928	\$243,892

Depreciation and amortization of property, plant and equipment are provided using the straight-line method over the following estimated useful lives:

Buildings and improvements	30 years
Machinery and equipment	3 to 12 years
Office equipment	5 years
Leasehold improvements	Shorter of 10 years or the term of lease

Maintenance, repairs and minor renewals are charged to expense as incurred. Repairs and maintenance expense approximated \$9.7 million, \$13.2 million, and \$8.8 million in 2008, 2007, and 2006, respectively. Additions and improvements are capitalized. When assets are disposed of, the applicable costs and accumulated depreciation and amortization are removed from the accounts and any resulting gain or loss is included in the results of operations. Depreciation expense was approximately \$31.5 million, \$23.7 million, and \$18.1 million in 2008, 2007, and 2006, respectively.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

i. Goodwill and Intangible Assets, Net

In accordance with SFAS 142, goodwill is not amortized, but instead goodwill and other intangible assets are required to be tested for impairment annually and under certain circumstances. The Company performs such testing of goodwill in the fourth quarter of each year at year end, or as events occur or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. The Company has defined its reporting units and completed the impairment testing of goodwill at the operating segment level, as defined by SFAS 131, "Disclosures about Segments of an Enterprise and Related Information." The Company's operating segments are reporting units that engage in business activities, for which discrete financial information is available. The Company compares the fair value of the reporting units to the carrying value of the reporting units for goodwill impairment testing. Fair value is determined using a discounted cash flow method and/or prevailing multiples for each reporting unit. The use of discounted cash flows requires the use of various economic, market and business assumptions in developing the Company's internal forecasts, the useful life over which cash flows will occur, and determination of the Company's weighted average cost of capital that reflect the Company's best estimates when performing the annual impairment test. However, the Company's assumptions and estimates may differ significantly from actual results. We may incur a goodwill impairment charge in the future, if for example, the market price of our stock materially declines, if the financial results of our operations deteriorate or other circumstances require an impairment charge. At December 31, 2008, our net book value was below our market capitalization. Based on a control factor that was considered and the discounted cash flows used in our assessment, an impairment to goodwill was not warranted at December 31, 2008. At December 31, 2008, no impairment of goodwill had occurred. Intangible assets with definite lives are amortized over their estimated useful lives based on the economic consumption method.

The roll forward of the goodwill balance by segment for the years ended December 31, 2008 and 2007 is as follows (in thousands):

	<u>ACO</u>	<u>Semicon</u>	<u>Thermo</u>	<u>ESK</u>	<u>Canada</u>	<u>Boron Products</u>	<u>Total</u>
December 31, 2006	\$2,608	\$603	\$ 279	\$ 9,196	\$3,832	—	\$16,518
Acquisition of Minco, Inc.	—	—	11,099	—	—	—	11,099
Acquisition of Boron Products	—	—	—	—	—	18,251	18,251
Translation	—	—	—	980	—	—	980
December 31, 2007	2,608	603	11,378	10,176	3,832	18,251	\$46,848
Translation and other	—	—	(1,047)	(477)	—	—	(1,524)
December 31, 2008	<u>\$2,608</u>	<u>\$603</u>	<u>\$10,331</u>	<u>\$ 9,699</u>	<u>\$3,832</u>	<u>\$18,251</u>	<u>\$43,324</u>

The components of intangibles assets were as follows (in thousands):

	<u>December 31, 2008</u>			<u>December 31, 2007</u>		
	<u>Gross Amount</u>	<u>Accumulated Amortization</u>	<u>Net Amount</u>	<u>Gross Amount</u>	<u>Accumulated Amortization</u>	<u>Net Amount</u>
Amortizing Intangible Assets						
Backlog	\$ 1,795	\$ 1,795	\$ —	\$ 1,795	\$1,795	\$ —
Developed technology	42,489	3,106	39,383	11,617	1,666	9,951
Trade name	1,110	302	808	1,110	142	968
Customer Relationships	46,604	4,465	42,139	25,230	947	24,283
Non-compete agreement	500	500	—	500	178	322
Non-amortizing tradename	<u>2,054</u>	<u>—</u>	<u>2,054</u>	<u>2,054</u>	<u>—</u>	<u>2,054</u>
Total	<u>\$94,552</u>	<u>\$10,168</u>	<u>\$84,384</u>	<u>\$42,306</u>	<u>\$4,728</u>	<u>\$37,578</u>

All of the intangible assets were acquired in 2004, 2006, 2007 and 2008 (see Note 3).

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The estimated useful lives for intangible assets are:

<u>Identified Intangible Asset</u>	<u>Estimated Useful Life in Years or Months</u>
Developed technology	10 years — 12.5 years
Tradename	10 years
Customer relationships	10 years — 12.5 years
Backlog	1 month — 3 months
Non-compete agreement	15 months

Amortization of definite-lived intangible assets will be approximately \$7,257 in 2009, \$7,506 in 2010, \$7,846 in 2011, \$8,238 in 2012 and \$9,156 in 2013. Amortization expense was \$5,176 in 2008, \$3,131, in 2007 and \$565 in 2006.

j. Sales Recognition

Sales are recorded when all of the following have occurred: an agreement of sale exists, the product has been delivered according to the terms of the sales order and collection is reasonably assured. Management is required to make judgments about whether or not collection is reasonably assured. The Company reduces revenue with reserves for sales returns. Allowances, which are recorded at the time revenue is recognized, in accordance with SFAS No. 48, "Revenue Recognition When Right of Return Exists," are based upon historical sales returns. The Company does not record a warranty reserve on the sale of its products. For its largest product line, body armor, all of which is sold to the U.S. Government, each lot of body armor is tested at an independent laboratory and the lot cannot be released for shipment to the U.S. Government until positive test results are received by both the U.S. Government and the Company. For its non-body armor sales, the Company has experienced minimal claims from these types of sales. Additionally, due to the inherent nature, strength, durability and structural properties of ceramics, as well as a rigid quality control program that includes, for some of our customers, having the customer accept quality test results prior to shipment, management does not believe a warranty reserve is necessary.

k. Net Income Per Share

Basic net income per share is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding. Diluted net income per share is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding plus the effect of any dilutive stock options and restricted stock units using the treasury stock method and the net share settlement method for the convertible debt.

The following is a summary of the number of shares entering into the computation of net income per common and common equivalent share:

	<u>December 31,</u>		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Weighted average number of shares outstanding	26,445,785	27,252,448	26,923,916
Dilutive stock options	217,972	285,427	364,002
Dilutive restricted stock units	25,434	39,853	63,931
Dilutive convertible note shares	—	154,274	—
Number of shares used in dilutive computation	<u>26,689,191</u>	<u>27,732,002</u>	<u>27,351,849</u>

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

l. Accounting for Long-Lived Assets

In accordance with SFAS 144, long-lived assets and intangible assets with definite lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Impairment indicators include, among other conditions, cash flow deficits, historic or anticipated declines in revenue or operating profit and adverse legal or regulatory developments. If it is determined that such indicators are present and the review indicates that the assets will not be fully recoverable, based on undiscounted estimated cash flows over the remaining amortization periods, their carrying values are reduced to estimated fair market value. Estimated fair market value is determined primarily using the anticipated cash flows discounted at a rate commensurate with the risk involved. For the purposes of identifying and measuring impairment, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities.

m. Use of Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States 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. Actual results could differ from those estimates.

n. Research and Development

Costs associated with research and development were \$14.8 million, \$17.6 million and \$9.9 million for years ended December 31, 2008, 2007 and 2006, respectively. In addition, the Company historically has and continues to engage in application engineering and internally funded research to improve and reduce the cost of products and to develop new products.

o. Fair Value of Financial Instruments

The carrying value of accounts receivable and trade payables approximates the fair value due to their short-term maturities. The carrying value of the Company's unused line of credit is considered to approximate fair market value, as the interest rates of these instruments are based predominantly on variable reference rates. The fair value of long-term debt was \$83.2 million and is based on quoted market prices at December 31, 2008.

p. Income Taxes

The Company accounts for income taxes using the asset and liability approach. Under this approach, deferred taxes are determined based on the differences between the financial statements and the tax bases using rates as enacted in tax laws. A valuation allowance is established if it is "more likely than not" that all or a portion of the deferred tax asset will not be realized.

In June 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes" ("FIN 48"). FIN 48 prescribes detailed guidance for the financial statement recognition, measurement and disclosure of uncertain tax positions recognized in an enterprise's financial statements in accordance with FASB Statement No. 109, Accounting for Income Taxes. Tax positions must meet a more-likely-than-not recognition threshold at the effective date to be recognized upon the adoption of FIN 48 and in subsequent periods. The Company adopted FIN 48 effective January 1, 2007 and the provisions of FIN 48 have been applied to all tax positions under Statement No. 109, "Accounting for Income Taxes" ("SFAS 109") upon initial adoption. The cumulative effect of applying the provisions of this interpretation had no effect on the opening balance of retained earnings in 2007.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

q. Share-Based Compensation

On January 1, 2006, the Company adopted Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment" ("SFAS 123(R)") which requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors including employee stock options based on estimated fair values. SFAS 123(R) supersedes the Company's previous accounting under Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" ("APB 25") for periods beginning in fiscal 2006. In March 2005, the SEC issued Staff Accounting Bulletin No. 107, "Share Based Payment" ("SAB 107") relating to SFAS 123(R). The Company has applied the provisions of SAB 107 in its adoption of SFAS 123(R).

On November 10, 2005, FASB issued Staff Position No. SFAS 123(R)-3, "Transition Election Related to Accounting for Tax Effects of Share-Based Payment Awards" ("SFAS 123(R)-3"). The alternative transition method includes a simplified method to establish the beginning balance of the additional paid-in capital pool ("APIC pool") related to the tax effects of employee share-based compensation, and to determine the subsequent impact on the APIC pool and Consolidated Statements of Cash Flows of the tax effects of employee share-based compensation awards that are outstanding upon adoption of SFAS 123(R). The Company has elected to adopt the provisions of SFAS 123(R)-3.

r. Comprehensive Income

Comprehensive income encompasses all changes in equity other than those arising from transactions with stockholders, and consists of net income, currency translation adjustments, pension liability changes and unrealized net gains and losses on investments classified as available-for-sale. As of December 31, 2008 and 2007, accumulated other comprehensive income is as follows (in thousands):

	December 31,	
	2008	2007
Unrealized loss on available-for-sale-securities, net	\$(5,911)	\$ (640)
Net change in pension liability	(3,124)	172
Cumulative translation adjustment	<u>22,738</u>	<u>31,822</u>
	<u>\$13,703</u>	<u>\$31,354</u>

s. Fair Value Measurements

On January 1, 2008, the Company adopted SFAS No. 157, "Fair Value Measurements" ("SFAS 157"). This new standard addresses how companies should measure fair value when they are required to use a fair value measure for recognition or disclosure purposes under generally accepted accounting principles. In accordance with FASB Staff Position FAS 157-2, Effective Date of SFAS. 157, the Company deferred the adoption of SFAS 157 for one year for nonfinancial assets and nonfinancial liabilities that are recognized or disclosed at fair value in the financial statements on a nonrecurring basis.

SFAS 157 requires that assets and liabilities carried at fair value be classified and disclosed in one of the following three categories:

- Level 1: quoted market prices in active markets for identical assets and liabilities
- Level 2: observable market based inputs or unobservable inputs that are corroborated by market data
- Level 3: unobservable inputs that are not corroborated by market data

The carrying value of cash and cash equivalents, accounts receivable and trade payables approximates the fair value due to their short-term maturities.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

For recognition purposes, on a recurring basis, the Company measures available for sale short-term and long-term investments at fair value. Short-term investments had an aggregate fair value of \$6.1 million at December 31, 2008 and \$29.6 million at December 31, 2007. The fair value of these investments is determined using quoted prices in active markets. Long-term investments, comprising auction rate securities, had an aggregate fair value of \$24.4 million at December 31, 2008 and \$38.1 million at December 31, 2007. During the years ended December 31, 2008 and December 31, 2007, the Company recognized pre-tax charges of \$5.9 million and \$2.1 million, respectively, due to other-than-temporary reductions in the value of its investments in auction rate securities. The Company also recognized pre-tax charges of \$7.8 million and \$0.8 million against other comprehensive income during the years ended December 31, 2008 and December 31, 2007, respectively, due to temporary reductions in the value of its investments in auction rate securities. Cumulatively to date, the Company has incurred \$8.0 million in pre-tax charges due to other-than-temporary reductions in the value of its investments in auction rate securities and pre-tax temporary impairment charges against other comprehensive income of \$8.6 million. The Company's investments in auction rate securities represent interests in insurance securitizations supported by pools of residential and commercial mortgages, asset backed securities and other structured credits relating to the credit risk of various bond guarantors. These auction rate securities were intended to provide liquidity via an auction process that resets the applicable interest rate at predetermined calendar intervals, allowing investors to either roll over their holdings or gain immediate liquidity by selling such interests at par. During the second half of the year 2007 and during 2008, the auctions for these securities failed. As a result of current negative conditions in the global credit markets, auctions for the Company's investment in these securities have recently failed to settle on their respective settlement dates. Consequently, the investments are not currently liquid through the normal auction process and may be liquid if a buyer is found outside the auction process.

Prior to June 30, 2008, the Company was able to determine the fair value of its investments in auction rate securities using a market approach valuation technique based on Level 2 inputs that did not require significant adjustment. Since June 30, 2008, the market demand for auction rate securities has declined significantly due to the complexity of these instruments, the difficulty of determining the values of some of the underlying assets, declines in the issuer's credit quality and disruptions in the credit markets. At December 31, 2008, the Company determined that the market for its investments in auction rate securities and for similar securities was not active since there were few observable or recent transactions for these securities or similar securities. The Company's investments in auction rate securities were classified within Level 3 of the fair value hierarchy because the Company determined that significant adjustments using unobservable inputs were required to determine fair value as of December 31, 2008.

An auction rate security is a type of structured financial instrument where its fair value can be estimated based on a valuation technique that includes the present value of future cash flows (principal and interest payments), review of the underlying collateral and considers relevant probability weighted and risk adjusted observable inputs and minimizes the use of unobservable inputs. Probability weighted inputs included the following:

- Probability of earning maximum rate until maturity
- Probability of passing auction at some point in the future
- Probability of default at some point in the future (with appropriate loss severity assumptions)

The Company determined that the appropriate risk-free discount rate (before risk adjustments) used to discount the contractual cash flows of its auction rate securities ranged from 1.2 to 4.8 percent, based on the term structure of the auction rate security. Liquidity risk premiums are used to adjust the risk-free discount rate for each auction rate security to reflect uncertainty and observed volatility of the current market environment. This risk of nonperformance has been captured within the probability of default and loss severity assumptions noted above. The risk-adjusted discount rate, which incorporates liquidity risk, appropriately

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

reflects the Company's estimate of the assumptions that market participants would use (including probability weighted inputs noted above) to estimate the selling price of the asset at the measurement date.

In determining whether the decline in value of the ARS investments was other-than-temporary, the Company considered several factors including, but not limited to, the following: (1) the reasons for the decline in value (credit event, interest related or market fluctuations); (2) the Company's ability and intent to hold the investments for a sufficient period of time to allow for recovery of value; (3) whether the decline is substantial; and (4) the historical and anticipated duration of the events causing the decline in value. The evaluation for other-than-temporary impairments is a quantitative and qualitative process, which is subject to various risks and uncertainties. The risks and uncertainties include changes in the credit quality of the securities, changes in liquidity as a result of normal market mechanisms or issuer calls of the securities, and the effects of changes in interest rates.

With respect to the ARS that have had temporary reductions, the Company has the intent and ability to hold the ARS investments until recovery of fair value, which may be maturity or earlier if called, and therefore does not consider these unrealized losses to be other-than-temporary.

At December 31, 2008, the Company had no derivative financial instruments.

Assets measured at fair value on a recurring basis include the following as of December 31, 2008:

	Fair Value Measurements at December 31, 2008			Total Carrying Value at December 31, 2008
	Using			
	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
	(In thousands)			
Cash and cash equivalents (including restricted cash)	\$217,984	\$ —	\$ —	\$217,984
Short term investments	6,140	—	—	6,140
Long term investments	—	—	24,434	24,434
Other long-term financial asset	\$ 1,355	\$ —	\$ —	\$ 1,355

On a nonrecurring basis, the Company is required to use fair value measures when measuring plan assets of the Company's pension plans. As the Company elected to adopt the measurement date provisions of SFAS No. 158, "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans", as of January 1, 2007, the Company was required to determine the fair value of the Company's pension plan assets as of December 31, 2008 and December 31, 2007. The fair value of pension plan assets was \$6.4 million and \$8.9 million at December 31, 2008 and December 31, 2007, respectively. These assets are valued in highly liquid markets.

Additionally, on a recurring basis, the Company uses fair value measures when analyzing asset impairment. Long-lived tangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If it is determined such indicators are present and the review indicates that the assets will not be fully recoverable, based on undiscounted estimated cash flows over the remaining amortization periods, their carrying values are reduced to estimated fair value. Estimated fair value is determined primarily using the anticipated cash flows discounted at a rate commensurate with the risk involved. During the fourth quarter of each year, the Company evaluates goodwill and indefinite-lived intangibles for impairment using the income approach. The income approach is a valuation technique under which estimated future cash flows are discounted to their present value to calculate fair value. When analyzing indefinite-lived intangibles for impairment, the Company uses a

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

relief from royalty method which calculates the cost savings associated with owning rather than licensing the trade name, applying an assumed royalty rate within the Company's discounted cash flow calculation.

For disclosure purposes, the Company is required to measure the fair value of outstanding debt on a recurring basis. The fair value of outstanding debt is determined using quoted prices in active markets. Long-term debt is reported at amortized cost in accordance with SFAS No. 107, "Disclosure about Fair Value of Financial Instruments." The fair value of long-term debt, based on quoted market prices, was \$83.2 million at December 31, 2008 and \$128.7 million at December 31, 2007.

t. New Accounting Pronouncements

In December 2007, the Financial Accounting Standards Board ("FASB") issued SFAS No. 141R, "Business Combinations" ("SFAS 141R") which establishes principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. The statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statement to evaluate the nature and financial effects of the business combination. SFAS 141R is effective for financial statements issued for fiscal years beginning after December 15, 2008. The Company does not expect SFAS No. 141R to have a significant impact on its consolidated financial statements when effective, but the nature and magnitude of the specific effects will depend upon the nature, terms and size of the acquisitions the Company consummates after the effective date. The Company has evaluated the impact of this standard on future acquisitions and currently does not expect it to have a significant impact on its financial position, results of operations or cash flows.

In December 2007, the FASB issued SFAS No. 160, "Noncontrolling Interests in Consolidated Financial Statements, an amendment of ARB No. 51" ("SFAS 160"). SFAS 160 introduces significant changes in the accounting and reporting for business acquisitions and noncontrolling interest ("NCI") in a subsidiary. SFAS 160 also changes the accounting for and reporting for the deconsolidation of a subsidiary. Companies are required to adopt the new standard for fiscal years beginning after December 15, 2008. The Company has evaluated the impact of this standard and currently does not expect it to have a significant impact on its financial position, results of operations or cash flows.

In March 2008, the FASB issued SFAS No. 161, "Disclosures about Derivative Instruments and Hedging Activities — an amendment of FASB Statement No. 133" ("SFAS 161"), which changes the disclosure requirements for derivative instruments and hedging activities. Entities are required to provide enhanced disclosures about (a) how and why an entity uses derivative instruments, (b) how derivative instruments and related hedged items are accounted for under Statement 133 and its related interpretations, and (c) how derivative instruments and related hedged items affect an entity's financial position, financial performance, and cash flows. Companies are required to adopt SFAS 161 for fiscal years beginning after November 15, 2008.

In May 2008, the FASB issued SFAS No. 162, "The Hierarchy of Generally Accepted Accounting Principles." The statement is intended to improve financial reporting by identifying a consistent hierarchy for selecting accounting principles to be used in preparing financial statements that are prepared in conformance with generally accepted accounting principles. Unlike Statement on Auditing Standards (SAS) No. 69, "The Meaning of Present in Conformity With GAAP," FAS No. 162 is directed to the entity rather than the auditor. The statement is effective 60 days following the SEC's approval of the Public Company Accounting Oversight Board (PCAOB) amendments to AU Section 411, "The Meaning of Present Fairly in Conformity with GAAP," and is not expected to have any impact on the Company's results of operations, financial condition or liquidity.

In May 2008, FASB Staff Position ("FSP") No. APB 14-1, "Accounting for Convertible Debt Instruments That May be Settled in Cash upon Conversion (Including Partial Cash Settlement)" ("FSP No. APB 14-1")

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

was issued which specifies that issuers of such instruments should separately account for the liability and equity components in a manner that will reflect the issuer's nonconvertible debt borrowing rate when interest cost is recognized in subsequent periods. FSP No. APB 14-1 is effective for financial statements issued for fiscal years beginning after December 15, 2008. Early adoption is not permitted. The Company has evaluated the impact of this standard and it is expected to reduce reported earnings upon adoption.

In June 2008, the FASB issued FSP Emerging Issues Task Force (EITF) No. 03-6-1, "Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities." Under the FSP, unvested share-based payment awards that contain rights to receive nonforfeitable dividends (whether paid or unpaid) are participating securities, and should be included in the two-class method of computing EPS. The FSP is effective for fiscal years beginning after December 15, 2008, and interim periods within those years, and is not expected to have a significant impact on the Company's results of operations, financial condition or cash flows.

In April 2008, FSP No. FAS 142-3, "Determination of the Useful Life of Intangible Assets" ("FSP No. FAS 142-3") was issued which provides for additional considerations to be used in determining useful lives and requires additional disclosure regarding renewals. FSP No. FAS 142-3 is effective for fiscal years beginning after December 15, 2008. Early adoption is not permitted. The Company is currently evaluating the impact of this standard.

In October 2008, the FASB issued FSP SFAS No. 157-3, "Determining the Fair Value of a Financial Asset When the Market for That Asset Is Not Active", ("FSP 157-3"), to clarify the application of the provisions of SFAS 157 in an inactive market and how an entity would determine fair value in an inactive market. FSP 157-3 was effective upon issuance and applies to the Company's current financial statements. The application of the provisions of FSP 157-3 did not materially affect the Company's results of operations or financial condition as of and for the year ended December 31, 2008.

3. Acquisitions

Acquisition of SemEquip, Inc.

On August 11, 2008, the Company completed the acquisition of SemEquip, Inc. ("SemEquip") pursuant to a merger of SemEquip with a wholly-owned subsidiary of Ceradyne. SemEquip is a leader in the development of cluster ion implantation sub-systems and advanced ion source materials for the manufacture of logic and memory chips. SemEquip's technologies enable the utilization of cluster beam ion implantation for manufacturing advanced integrated circuits at low cost and high throughput rates. Ceradyne paid \$25.0 million in cash at closing, of which \$1.7 million was distributed as incentive compensation to several SemEquip employees and advisors as described below, and incurred direct transaction fees and expenses of \$2.0 million. Ceradyne used a portion of its existing cash to make these payments. In addition, Ceradyne will pay contingent consideration of up to \$100.0 million in cash during the 15-year period following completion of the merger based upon revenues achieved over that period by SemEquip. The \$1.7 million portion of the closing date consideration paid to SemEquip employees and advisors and a portion of the contingent consideration to be paid by Ceradyne over 15 years relates to a pre-closing commitment by SemEquip to pay incentive compensation to several of its employees and advisors. This incentive compensation will not increase the total consideration Ceradyne will pay for the acquisition, but it required Ceradyne to record a \$9.8 million pre-tax compensation charge during the year ended December 31, 2008. The net value of fair value of assets acquired and liabilities assumed exceeded the total amount of the purchase price paid. As the Company may be required to pay contingent consideration in the future, the Company accrued an additional \$25.2 million of purchase consideration to represent the difference between the net fair value of assets acquired and liabilities assumed and the purchase price paid.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In accordance with Statement of Financial Accounting Standards (“SFAS”) No. 141, “Business Combinations,” the acquisition has been accounted for under the purchase method of accounting. Under the purchase method of accounting, the assets acquired and liabilities assumed are recorded at the date of acquisition at their respective fair values.

The total purchase price of the SemEquip acquisition was as follows (in thousands):

Cash consideration paid to SemEquip stockholders	\$23,315
Accrued purchase consideration	25,235
Direct transaction fees and expenses	<u>1,970</u>
Total purchase price	<u>\$50,520</u>

The above purchase price has been allocated based on the fair values of assets acquired and liabilities assumed.

The purchase price has been allocated as follows (in thousands):

Cash	\$ 2,192
Inventories	3,574
Accounts receivable, net	446
Other current assets	276
Property, plant and equipment	1,071
Intangible assets	48,189
Accounts payable and other liabilities	(3,685)
Non-current deferred tax liability, net	<u>(1,543)</u>
Net assets acquired	<u>\$50,520</u>

The non-current deferred tax liability was recorded net of the tax benefit associated with net operating loss carryforwards of SemEquip that were generated prior to the acquisition date (see Note 6).

Of the \$48.2 million of acquired intangible assets, \$26.9 million was assigned to developed technology rights that have a useful life of approximately 10 years and \$21.3 million was assigned to customer relationships with a useful life of approximately 10 years. The amounts assigned to intangible assets were based on management’s estimate of the fair value. Developed technology rights recorded in connection with the acquisition of SemEquip were established as intangible assets under paragraph 39 of SFAS 141 as the underlying technologies are legally protected by patents covering the alternative ion implantation process using “cluster boron” technology. The developed technology rights are both transferable and separable from the acquired entity.

Identification and allocation of value to the identified intangible assets was based on the provisions of SFAS No. 141. The fair value of the identified intangible assets was estimated by performing a discounted cash flow analysis using the “income” approach. This method includes a forecast of direct revenues and costs associated with the respective intangible assets and charges for economic returns on tangible and intangible assets utilized in cash flow generation. Net cash flows attributable to the identified intangible assets are discounted to their present value at a rate commensurate with the perceived risk. The projected cash flow assumptions considered contractual relationships, customer attrition, eventual development of new technologies and market competition.

The estimates of expected useful lives were based on guidance from SFAS No. 141 and take into consideration the effects of competition, regulatory changes and possible obsolescence. The useful lives of technology rights were based on the number of years in which net cash flows have been projected. The useful

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

lives of customer relationships were estimated based upon the length of the contracts currently in place and probability-based estimates of contract renewals in the future.

Assumptions used in forecasting cash flows for each of the identified intangible assets included consideration of the following:

- SemEquip historical operating margins and performance of comparable publicly traded entities
- Number of customers and SemEquip market share
- Contractual and non-contractual relationships with large customers, and
- Patents held

The results of operations of SemEquip have been included in the accompanying consolidated statements of operations from the acquisition date. The following unaudited pro forma information assumes the SemEquip acquisition occurred at the beginning of each period presented below. Accordingly, pro forma adjustments have been included in the information below for disclosure purposes only. These unaudited pro forma results have been prepared for informational purposes only and do not purport to represent what the results of operations would have been had the SemEquip acquisition occurred as of the date indicated, nor of future results of operations. The unaudited pro forma results for the years ended December 31, 2008 and 2007 were as follows (amounts in table in thousands, except per share data):

	2008	2007
Net sales	\$682,978	\$760,642
Net income(1)	102,909	129,549
Basic income per share	\$ 3.89	\$ 4.75
Diluted income per share	\$ 3.86	\$ 4.67

(1) The unaudited pro forma information for the years ended December 31, 2008 and 2007 includes the \$9.8 million pre-tax acquisition related compensation charge associated with a pre-closing commitment by SemEquip to pay incentive compensation to several of its employees and advisors, which has been recognized in the Company's historical results of operations for these periods. The unaudited pro forma information for the years ended December 31, 2008 and 2007 include pro forma adjustments to reflect pre-tax increase in amortization expense of \$398,000 and \$0.7 million, respectively, related to management's estimate of the fair value of intangible assets acquired in the SemEquip acquisition.

Asset Purchase — Proprietary Technical Ceramic Bearing Technology

In June 2008, the Company completed the purchase of certain assets and developed technology related to proprietary technical ceramic bearings. These patented bearings are used for "down hole" oil drilling and for coal bed methane pumps and steam assisted oil extraction pumps. The purchase price was approximately \$3.9 million in cash, which included \$115,000 of transaction costs. The Company paid an additional \$250,000 in consideration during November 2008 conditioned upon the relocation of certain key employees. In addition, the Company will make future payments of (1) up to an additional \$2.0 million if certain revenue milestones are achieved, and (2) a royalty of three percent of net sales of these bearings for the life of the acquired patents. The Company considers this acquisition to be immaterial.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In accordance with SFAS No. 141, the acquisition has been accounted for under the purchase method of accounting. The following table summarizes the components of the purchase price (in thousands):

Cash	\$4,000
Transaction costs	<u>115</u>
Total purchase price	<u>\$4,115</u>
Fair value of assets acquired:	
Fixed assets	\$ 29
Customer relationships	120
Developed technology	<u>3,966</u>
Total fair value of assets acquired	<u>\$4,115</u>

The Company considers this acquisition to be immaterial for disclosure of pro forma financial information.

Acquisition of Minco, Inc.

On July 10, 2007, the Company completed the acquisition of Minco, Inc. ("Minco") based in Midway, Tennessee, pursuant to a Sale and Purchase Agreement of the same date. Minco's results from operations are included in the Company's Consolidated Statements of Income from the date of acquisition.

The purchase price was approximately \$28.1 million in cash, which included \$216,000 of transaction costs.

Minco is a key supplier of raw materials to Ceradyne's Thermo Materials division. Minco was founded in 1977 to manufacture and market fused silica powders for a wide range of industrial applications. Minco's fusing process, which is the basis of its entire product line, is based on its proprietary technology.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In accordance with SFAS No. 141, “Business Combinations” (“SFAS 141”), the acquisition has been accounted for under the purchase method of accounting. The following table summarizes the components of the purchase price (in thousands):

Cash	\$27,905
Transaction costs	<u>216</u>
Total purchase price	<u>\$28,121</u>
Fair value of assets acquired and liabilities assumed:	
Cash	\$ 332
Accounts receivable, net	2,503
Inventory	3,301
Property, plant and equipment	7,114
Other assets	1,473
Assumed liabilities	(1,892)
Deferred taxes	(3,741)
Backlog	110
Developed technology	1,510
Tradename	650
Customer relationships	6,210
Non-compete	500
Goodwill	<u>10,051</u>
	<u>\$28,121</u>

The goodwill resulting from the Minco acquisition is included with the Thermo Materials segment. Goodwill will not be amortized but is subject to an ongoing assessment for impairment. Under SFAS 109 the goodwill from Minco is not tax deductible.

The estimated useful lives for Minco’s intangible assets are as follows:

<u>Identified Intangible Asset</u>	<u>Estimated Useful Life in Years or Months</u>
Developed technology	10 years
Tradename	10 years
Customer relationships	10 years
Backlog	1 month
Non-compete agreement	15 months

The Company considers this acquisition to be immaterial for disclosure of pro forma financial information.

Acquisition of EaglePicher Boron LLC

On August 31, 2007, the Company completed the purchase of EaglePicher Boron LLC. (“EP Boron”) located in Quapaw, Oklahoma pursuant to a Sale and Purchase Agreement dated June 27, 2007. EP Boron was renamed Boron Products, LLC and is doing business as Ceradyne Boron Products. Their results from operations are included in the Company’s Consolidated Statements of Income from the date of acquisition.

The purchase price was approximately \$71.3 million in cash which included \$1.7 million of transaction costs.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

EP Boron was established in the early 1970's to produce the boron isotope 10B. This isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant neutron radiation control. EP Boron also produces complementary chemical isotopes used in the normal operation and control of nuclear power plants. Ceradyne anticipates that this acquisition will further strengthen its entry into the nuclear waste containment and other nuclear power plant related ceramic materials markets.

In accordance with SFAS 141, the acquisition has been accounted for under the purchase method of accounting. The following table summarizes the components of the purchase price (in thousands):

Cash	\$69,600
Transaction costs	<u>1,709</u>
Total purchase price	<u>\$71,309</u>
Fair value of assets acquired and liabilities assumed:	
Accounts receivable, net	\$ 2,811
Inventory	6,375
Property, plant and equipment	23,636
Other assets	61
Assumed liabilities	(1,505)
Backlog	1,110
Developed technology	2,280
Customer relationships	18,290
Goodwill	<u>18,251</u>
	<u>\$71,309</u>

In accordance with SFAS 141, the new intangible asset balance for each acquisition will be allocated between identifiable intangible assets and remaining goodwill. Under SFAS 109, the goodwill from this acquisition is tax deductible over 15 years.

The estimated useful lives for Ceradyne Boron Products' intangible assets are as follows:

<u>Identified Intangible Asset</u>	<u>Estimated Useful Life in Years or Months</u>
Developed technology	12.5 years
Customer relationships	12.5 years
Backlog	3 months

The Company considers this acquisition to be immaterial for disclosure of pro forma financial information.

Asset purchase — "Boral®" product line

On June 30, 2006, the Company completed the purchase of certain assets and technology related to the "Boral®" product line of AAR Manufacturing, Inc., a subsidiary of AAR Corp. The purchase price for the acquisition was approximately \$6.7 million consisting of all cash. The Company considers this to be an immaterial acquisition.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The purchase price was allocated as follows (in thousands):

Boral Product Line

Net tangible assets	\$ 717
Intangible assets (estimated useful life of 10 years)	2,130
Goodwill	<u>3,832</u>
Total purchase price	<u>\$6,679</u>

4. Debt and Bank Borrowing Arrangements; Convertible Note and Common Stock Offerings

During December 2005, the Company completed a public offering of 2,070,000 shares of common stock at a price to the public of \$43.31 per share. The Company received net proceeds of approximately \$84.6 million from this offering after deducting offering expenses and underwriting discounts of \$5.0 million. Concurrent with the common stock offering, during December 2005, the Company issued \$121.0 million of 2.875% senior subordinated convertible notes due December 15, 2035.

Interest on the notes is payable on December 15 and June 15 of each year, commencing on June 15, 2006. The notes are convertible into 17.1032 shares of Ceradyne's common stock for each \$1,000 principal amount of the notes (which represents a conversion price of approximately \$58.47 per share), subject to adjustment. The notes are convertible only under certain circumstances, including if the price of the Company's common stock reaches specified thresholds, if the notes are called for redemption, if specified corporate transactions or fundamental change occur, or during the 10 trading days prior to maturity of the notes. The Company may redeem the notes at any time after December 20, 2010, for a price equal to 100% of the principal amount plus accrued and unpaid interest, including contingent interest (as described below), if any, up to but excluding the redemption date. In addition, the Notes may be converted, at the option of the holders, on or prior to the final maturity date if during the five business day period after any five consecutive trading day period in which the trading price per \$1,000 principal value amount of notes for each day of that period was less than 98% of the product of the closing price for our common stock for each day of that period and the applicable conversion rate. This conversion provision represents an embedded derivative. However, based on the de minimus value associated with this feature, no value was assigned at issuance and at December 31, 2008.

With respect to each \$1,000 principal amount of the notes surrendered for conversion, the Company will deliver the conversion value to holders as follows: (1) an amount in cash equal to the lesser of (a) the aggregate conversion value of the notes to be converted and (b) \$1,000, and (2) if the aggregate conversion value of the notes to be converted is greater than the \$1,000, an amount in shares or cash equal to such aggregate conversion value in excess of \$1,000.

The notes contain put options, which may require the Company to repurchase in cash all or a portion of the notes on December 15, 2012, December 15, 2015, December 15, 2020, December 15, 2025, and December 15, 2030 at a repurchase price equal to 100% of the principal amount of the notes to be repurchased plus accrued and unpaid interest, including contingent interest (as described below), if any, up to but excluding the repurchase date.

The Company is obligated to pay contingent interest to the holders of the notes during any six-month period from June 15 to December 14 and from December 15 to June 14, commencing with the six-month period beginning December 20, 2010 and ending on June 14, 2011, if the average trading price of the note for the five trading day period ending on the third trading day immediately preceding the first day of the relevant contingent interest period equals \$1,200 (120% of the principal amount of a note) or more. The amount of contingent interest payable per note for any relevant contingent interest period shall equal 0.25% per annum of the average trading price of a note for the five trading day period ending on the third trading day immediately preceding the first day of the relevant contingent interest period. This contingent interest payment feature represents an embedded

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

derivative. However, based on the de minimus value associated with this feature, no value was assigned at issuance and at December 31, 2008.

On or prior to the maturity date of the notes, upon the occurrence of a fundamental change, under certain circumstances, the Company will provide for a make whole amount by increasing, for the time period described herein, the conversion rate by a number of additional shares for any conversion of the notes in connection with such fundamental change transactions. The amount of additional shares will be determined based on the price paid per share of Ceradyne's common stock in the transaction constituting a fundamental change and the effective date of such transaction. This make whole premium feature represents an embedded derivative. Since this feature has no measurable impact on the fair value of the notes and no separate trading market exists for this derivative, the value of the embedded derivative was determined to be de minimis. Accordingly, no value has been assigned at issuance or at December 31, 2008.

The Company utilizes a convertible bond pricing model and a probability weighted valuation model, as applicable, to determine the fair values of the embedded derivatives noted above.

In December 2005, the Company established an unsecured \$10.0 million line of credit which expires on December 30, 2010. As of December 31, 2008, there were no outstanding amounts on the line of credit. However, the available line of credit at December 31, 2008 has been reduced by outstanding letters of credit in the amount of \$1.8 million. The interest rate on the credit line is based on the LIBOR rate for a period of one month, plus a margin of 0.6 percent, which equaled 1.1% as of December 31, 2008.

Pursuant to the bank line of credit, the Company is subject to certain covenants, which include, among other things, the maintenance of specified minimum amounts of tangible net worth and quick assets to current liabilities ratio. At December 31, 2008, the Company was in compliance with these covenants.

5. Financial Instruments

Foreign Exchange Risk Management

The Company enters into foreign exchange forward contracts to reduce earnings and cash flow volatility associated with foreign exchange rate changes to allow management to focus its attention on its core business operations. Accordingly, the Company enters into contracts which change in value as foreign exchange rates change to economically offset the effect of changes in value of foreign currency assets and liabilities, commitments and anticipated foreign currency denominated sales and operating expenses. The Company enters into foreign exchange forward contracts in amounts between minimum and maximum anticipated foreign exchange exposures, generally for periods not to exceed one year. These derivative instruments are not designated as accounting hedges. As of December 31, 2008, the Company did not have any outstanding forward exchange contracts.

6. Income Taxes

The provision for income taxes is comprised of the following for each of the years ended December 31 (in thousands):

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Current, domestic	\$59,303	\$79,406	\$66,862
Current, foreign	229	4,897	4,713
Current, total	<u>59,532</u>	<u>84,303</u>	<u>71,575</u>
Deferred, domestic	(1,590)	(984)	(6,458)
Deferred, foreign	(67)	(1,041)	1,038
Deferred, total	<u>(1,657)</u>	<u>(2,025)</u>	<u>(5,420)</u>
Provision for income taxes	<u>\$57,875</u>	<u>\$82,278</u>	<u>\$66,155</u>

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The components of the Company's deferred tax asset (liability) as of December 31, 2008 and 2007 are as follows (in thousands):

	<u>December 31,</u>	
	<u>2008</u>	<u>2007</u>
Deferred tax asset:		
Inventory	\$ 6,806	\$ 5,342
Vacation accrual	950	1,061
Bad debt allowance	199	323
Accrued payroll	1,615	1,759
State taxes	1,992	3,310
Other	<u>1,487</u>	<u>1,228</u>
Total current deferred tax asset, before valuation allowance	<u>13,049</u>	<u>13,023</u>
Valuation allowance	<u>(467)</u>	<u>—</u>
Current deferred tax asset, net of valuation allowance	\$ 12,582	\$ 13,023
Current deferred tax (liability):		
Prepaid expenses	<u>(615)</u>	<u>(568)</u>
Total current deferred tax (liability):	<u>(615)</u>	<u>(568)</u>
Net current deferred tax asset	<u>\$ 11,967</u>	<u>\$ 12,455</u>
Non current deferred tax assets:		
Deferred compensation	\$ 2,906	\$ 2,653
Accrued payroll	1,355	1,638
Acquisition related compensation	4,012	—
Unrealized currency loss	—	358
State taxes	558	257
Net operating loss carryforwards	18,842	494
Research credits	2,091	—
Unrealized investment loss	6,605	861
Pension liability	1,889	—
Foreign tax credit carryforward	<u>771</u>	<u>—</u>
Total non current deferred tax assets	<u>39,029</u>	<u>6,261</u>
Valuation allowance	<u>(2,222)</u>	<u>—</u>
Non current deferred tax assets, net of valuation allowance	<u>36,807</u>	<u>6,261</u>
Non current deferred tax (liabilities):		
Depreciation and amortization	(10,821)	(7,859)
Fixed asset step up	(962)	(911)
Intangible asset step up	(24,382)	(3,307)
Other	<u>(706)</u>	<u>(475)</u>
Total non current deferred tax (liabilities)	<u>(36,871)</u>	<u>(12,552)</u>
Net non current deferred tax (liability)	<u>\$ (64)</u>	<u>\$ (6,291)</u>

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The Company had net operating loss (“NOL”) carryforwards at December 31, 2008, of \$41.7 million and \$38.9 million for federal and state income tax purposes, respectively. This NOL was primarily attributable to the acquisition of SemEquip, Inc. in August 2008. It is subject to potential utilization restrictions on an annual basis as a result of the ownership change. The NOL will begin to expire in 2021 if not utilized.

At December 31, 2008, the Company had approximately \$1.0 million and \$1.2 million in federal and state research and development credit carryforwards, respectively, which will begin to expire in 2016. These credits were attributable to the acquisition of SemEquip, Inc. These credits are subject to potential utilization restrictions on an annual basis as a result of the ownership change.

At December 31, 2008, the Company established a valuation allowance of \$2.7 million which comprises certain research and development credits and NOL for state income tax purposes as the ultimate utilization of these items were less than “more likely than not”.

The effective income tax rate for the years ended December 31, 2008, 2007 and 2006 differs from the Federal statutory income tax rate due to the following items (in thousands):

	December 31,		
	2008	2007	2006
Income before taxes, domestic	\$140,522	\$215,608	\$179,497
Income before taxes, foreign	24,103	10,845	15,062
Income before taxes, total	<u>\$164,625</u>	<u>\$226,543</u>	<u>\$194,559</u>
Provision for income taxes at federal statutory rate (35)%	57,619	79,290	68,096
State income taxes, net of federal benefit	4,724	9,468	2,270
Permanent items	247	584	398
Extraterritorial income exclusion	—	—	(2,417)
Credits	(564)	(502)	(399)
Manufacturing deduction	(2,882)	(4,147)	(1,600)
Foreign earnings not taxed at federal rate	(5,583)	—	—
Other	4,314	(2,415)	(193)
Provision for income taxes	<u>\$ 57,875</u>	<u>\$ 82,278</u>	<u>\$ 66,155</u>
Effective tax rate	<u>35.16%</u>	<u>36.32%</u>	<u>34.00%</u>

The exercise of stock options represents a tax benefit and has been reflected as a reduction of taxes payable and an increase to the additional paid-in capital account. The benefit recorded was \$0.8 million, \$3.3 million and \$4.9 million for the years ended December 31, 2008, 2007 and 2006, respectively.

The Company’s effective tax rate considers the impact of undistributed earnings of subsidiary companies outside of the U.S. The Company does not provide for U.S. federal income taxes or tax benefits on the undistributed earnings or losses of its international subsidiaries because such earnings are reinvested and, in the opinion of management, will continue to be reinvested indefinitely. As of December 31, 2008, the Company had not provided federal income taxes on earnings of approximately \$16.4 million from its international subsidiaries. Should these earnings be distributed in the form of dividends or otherwise, the Company would be subject to both U.S. income taxes and withholding taxes in various international jurisdictions. These taxes will be partially offset by U.S. foreign tax credits. Determination of the related amount of unrecognized deferred U.S. income taxes is not practicable because of the complexities associated with this hypothetical calculation. However, from time to time and to the extent that the Company can repatriate overseas earnings on a tax-free basis, the Company’s foreign subsidiaries will pay dividends to the U.S. Material changes in the Company’s working capital and long-term investment requirements could impact

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

the decisions made by management with respect to the level and source of future remittances and, as a result, the Company's effective tax rate.

The Company's China subsidiary generated cumulative taxable income as of December 31, 2008. The China subsidiary has a tax holiday, which will expire in 2013.

The Company has adopted FIN 48 effective January 1, 2007. The adoption of FIN 48 resulted in no change to the reserve for unrecognized tax benefits (UTBs) that existed under FAS 5 at December 31, 2006. As such, there is no change recorded to retained earnings as a result of the adoption. A reconciliation of the beginning and ending amount of UTBs is as follows (in thousands):

	<u>2008</u>	<u>2007</u>
Balance at January 1,	\$4,556	\$ 6,178
Additions based on tax positions related to the current year	676	494
Additions for tax positions of prior years	2,724	—
Reductions of tax positions of prior years.	<u>(729)</u>	<u>(2,116)</u>
Balance at December 31,	<u>\$7,227</u>	<u>\$ 4,556</u>

It is the Company's policy to classify accrued interest and penalties as part of the income tax provision. The Company recognized \$1.2 million of interest expense related to UTBs for the year ended December 31, 2008 and \$77,000 for the year ended December 31, 2007. The accrued interest on the UTBs at December 31, 2008 and December 31, 2007 was \$1.9 million and \$0.7 million respectively. The tax benefit of this accrued interest was \$0.6 million and \$250,000 respectively. It is anticipated that any change in the above UTBs will impact the effective tax rate. For UTBs, that exist at December 31, 2008, the Company expects a reduction of approximately \$3.0 million within the next 12 months. At December 31, 2008, the 2003-2008 years are open and subject to potential examination in one or more jurisdictions. The Company is currently under federal income tax examinations for the 2005-2007 tax year and under state income tax examination for the tax years 2003 through 2005.

7. Employee Retirement and Other Benefit Plans

Supplemental Retirement Plan

In December 1988, the Board of Directors of the Company approved the adoption of a supplemental retirement plan, the Ceradyne SMART 401(k) Plan (the Plan), in which substantially all employees are eligible to participate after completing 90 days of employment. Participation in the Plan is voluntary. An employee may elect to contribute up to the maximum deferred tax amount of \$15,500 in 2008 as a basic contribution. The Company may contribute any amount which the Board of Directors annually determines appropriate. Company contributions fully vest and are non-forfeitable after the participant has completed five years of service. The Company's related contributions for the years ended December 31, 2008, 2007 and 2006 were \$1.3 million, \$1.5 million and \$1.1 million, respectively.

Pension and Other Postretirement Benefit Plans

In September 2006, the FASB issued SFAS No. 158 "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans — an amendment of FASB Statement No. 87, 88, 106, and 132 (R)" ("SFAS 158").

The most significant change is the requirement for an employer to recognize the overfunded or underfunded status of a defined benefit postretirement plan as an asset or liability in its statement of financial position and to recognize changes in that funded status in the year in which the changes occur through comprehensive income of a business entity. Public companies are required to initially recognize the funded

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

status of a defined benefit postretirement plan and to provide the required disclosures as of the end of the fiscal year ending after December 15, 2006. The Company adopted SFAS 158 in the fourth quarter ended December 31, 2006, and its adoption did not have a significant impact on our consolidated financial position.

German Pension and Benefit Plans

The Company provides pension benefits to the employees of its ESK Ceramics subsidiary in Germany and France. These pension benefits are rendered for the time after the retirement of the employees by payments into legally independent pension and relief facilities. They are generally based on length of service, wage level and position in the company. The direct and indirect obligations comprise obligations for pensions that are already paid currently and expectations for those pensions payable in the future. The Company has four separate plans in Germany: a) Pensionskasse — Old; b) Pensionskasse — New; c) Additional Compensation Plan; and d) Deferred Compensation plan. For financial accounting purposes, the Additional and Deferred Compensation Plans are accounted for as single-employer defined benefit plans, Pensionskasse — Old is a multiemployer defined benefit plan and the Pensionskasse — New is a defined contribution plan.

The measurement date for the Company's pension plan assets and obligations, including Pensionskasse — Old, is December 31. Assumed discount rates and rates of increase in remuneration used in calculating the projected benefit obligation together with long-term rates of return on plan assets vary according to the economic conditions of Germany, where the pension plans are situated.

As noted above the Pensionskasse — Old is a multi employer defined benefit pension plan. ESK Ceramics is one of numerous employers who participate in the plan. Therefore, the Company has recognized as net pension benefit cost the required contribution for the period. However, due to the current development of the financial markets and the overall decrease of the return on pension plan assets, the pension facility ("WACKER-Pensionskasse") requested a one-off payment from its members to further ensure its risk-bearing capacity and in addition requested that future pension adjustments from 2009 onwards have to be paid by the employers. Management believes, based on the bylaws of WACKER-Pensionskasse and its expected future performance, that this obligation will exist only for a limited period of time. In accordance with SFAS 5 "Accounting for Contingencies" the projected benefit obligation for those future pension adjustments which management believes the Company will to have to pay was accrued as an additional liability.

The accumulated benefit obligations and projected benefit obligations are computed utilizing the same methods and assumptions as those used in the Additional and Deferred Compensation Plans noted above and are solely based on the ESK Ceramics employees participating in the plan. However, the assets of the plan are allocated based upon the relative percentage of the projected benefit obligation to the total for all participating employers. The long-term asset structure of the Pensionskasse is determined significantly by asset-liability-studies conducted regularly calculating an optimal investment portfolio based on the known business in force and the actuarial assumptions. Input parameters are assumed risk and return rates as well as specific correlation samples of the respective asset categories. The priority objective of the asset allocation is to achieve a rate of return compensating the benefit commitments within the limits of a justifiable risk and volatility. The operative investment policy has to conform to legal requirements (insurance control and investment law) as well as to internal investment guidelines and restrictions. The use of derivatives is permitted within the legally allowed scope. The expected overall rate of return is based on numerous factors like the portfolio selection and the anticipated long-term rate of return of the respective asset categories determined by the Black-Litterman Market Equilibrium Model. The expected long-term rate of return therewith is approximated to long-term historical averages, future expectations are also covered by the Black-Litterman Model. In certain cases assumptions in expected long-term rates of return are modified marginally by the responsible manager of the WACKER Pensionskasse in order to consider personal experience and different medium-term market expectations respectively. The projected benefit obligations for the pension plan

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

“continuation of payments in case of death” were \$55,489 and \$53,477 for the years ended December 31, 2008 and 2007, respectively.

The Pensionskasse — New covers all German employees with membership as of January 1, 2005. Contributions and costs are determined as 2.0 percent of each covered employee’s salary and totalled \$165,982 in 2008, \$110,116 in 2007, and \$40,783 in 2006.

Components of net periodic benefit costs under the Additional and Deferred Compensation Plans for the years ended December 31, 2008, 2007 and 2006 were as follows (in thousands):

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Service cost	\$(437)	\$(463)	\$(442)
Interest cost	(490)	(400)	(335)
Amortization	<u>—</u>	<u>(60)</u>	<u>(85)</u>
Net periodic benefit cost	<u>\$(927)</u>	<u>\$(923)</u>	<u>\$(862)</u>

The weighted-average assumptions used to determine net periodic benefit cost were as follows:

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Discount rate	5.75%	5.75%	4.50%
Rate of long-term compensation increase	2.50%	2.50%	2.50%

The funded status and components of the change in benefit obligations of the Additional and Deferred Compensation Plans for December 31, 2008 and 2007 were as follows (in thousands):

	<u>2008</u>	<u>2007</u>
Funded status at end of year:		
Projected benefit obligation	\$(11,032)	\$(8,503)
Assets at fair value	<u>—</u>	<u>—</u>
Funded status	<u>\$(11,032)</u>	<u>\$(8,503)</u>
Net amounts recognized in consolidated balance sheet:		
Current liabilities	\$ (106)	\$ (106)
Non-current liabilities	\$(10,926)	\$(8,397)
Change in projected benefit obligation:		
Projected benefit obligation at beginning of year	\$ (8,503)	\$(8,617)
Foreign currency exchange rate changes	568	(855)
Service costs	(437)	(463)
Interest costs	(490)	(400)
Actuarial gains (losses)	(2,280)	1,722
Benefits paid	<u>110</u>	<u>110</u>
Projected benefit obligation at end of year	<u>\$(11,032)</u>	<u>\$(8,503)</u>
Accumulated benefit obligation	<u>\$(10,173)</u>	<u>\$(8,140)</u>

The weighted-average assumptions used to determine pension benefit obligations were as follows:

	<u>2008</u>	<u>2007</u>
Discount rate	6.25%	5.75%
Rate of long-term compensation increase	3.00%	2.50%

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Components of the related tax effects for each component of other comprehensive income follows related to the Additional and Deferred Compensation Plans for December 31, 2008 and 2007 are as follows (in thousands):

	2008		
	Before-Tax Amount	Tax (Expense) or Benefit	Net-of- Tax Amount
Accumulated other comprehensive income (loss) at beginning of year	\$ 362	\$(134)	\$ 228
Net actuarial gain (loss) arising during current year	(2,280)	670	(1,610)
Foreign currency effect	<u>43</u>	<u>(6)</u>	<u>37</u>
Accumulated other comprehensive income (loss) at end of year(1)	<u><u>\$(1,875)</u></u>	<u><u>\$ 530</u></u>	<u><u>\$(1,345)</u></u>

(1) Approximately \$90 of net actuarial loss included in accumulated other comprehensive loss will be amortized into income in 2009.

	2007		
	Before-Tax Amount	Tax (Expense) or Benefit	Net-of- Tax Amount
Accumulated other comprehensive income (loss) at beginning of year	\$(1,542)	\$ 591	\$ (951)
Net actuarial gain (loss) arising during current year	1,722	(660)	1,062
Amortization of actuarial gain	60	(17)	43
Foreign currency effect	<u>122</u>	<u>(48)</u>	<u>74</u>
Accumulated other comprehensive income (loss) at end of year ..	<u><u>\$ 362</u></u>	<u><u>\$(134)</u></u>	<u><u>\$ 228</u></u>

The Company expects to contribute to its defined benefit plans in 2009 (in thousands):

Pensionkasse — Old	\$ 1,496
Additional Compensation	(1,102)
Deferred Compensation	<u>208</u>
Total Contributions expected in 2009	<u><u>\$ 2,806</u></u>

The following estimated future benefit payments are expected to be paid in the years indicated (in thousands):

2009	\$ 131
2010	158
2011	239
2012	292
2013	317
2014 – 2018	2,314

Assumed discount rates and rates of increase in remuneration used in calculating the projected benefit obligation together with long-term rates of return on plan assets vary according to the economic conditions of Germany in which pension plans are situated. The discount rate is typically changed at least annually. The interest rate used is comparable to long-term corporate bonds with a AA rating.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Ceradyne Boron Products Pension Plans

The Company provides pension benefits to employees in its Ceradyne Boron Products subsidiary. The plans cover employees who meet specified eligibility requirements. The measurement date for the Company's pension plan assets and obligations is December 31. The plans became obligations of the Company as a result of the acquisition of Ceradyne Boron Products on August 31, 2007 (refer to Note 3). The 2007 information presented below is for the period September 1, 2007 through December 31, 2007.

The Company expects to make a contribution at least as great as the minimum required by the IRS funding rules to the plan during the upcoming year. Funding requirements for subsequent years are uncertain and will significantly depend on the assumptions used to calculate plan funding levels, the actual return on plan assets, changes in the employee groups covered by the plan, and any legislative or regulatory changes affecting plan funding requirements. For tax planning, financial planning, cash flow management or cost reduction purposes the Company may increase, accelerate, decrease or delay contributions to the plan to the extent permitted by law.

Components of the net periodic pension (benefit) for the years ended December 31, 2008 and 2007 were as follows (in thousands):

	<u>2008</u>	<u>2007</u>
Service costs	\$ 110	\$ 39
Interest costs	510	183
Expected return on assets	<u>(697)</u>	<u>(235)</u>
Net periodic pension (benefit)	<u>\$ (77)</u>	<u>\$ (13)</u>

The weighted-average assumptions used to determine net periodic benefit costs were as follows:

	<u>2008</u>	<u>2007</u>
Discount rate	5.92%	6.17%
Rate of long-term compensation increase	4.00%	4.00%
Expected return on plan assets	8.00%	8.00%

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The funded status and components of the change in benefit obligations and changes in plan assets for the years ended December 31, 2008 and 2007 were as follows (in thousands):

	<u>2008</u>	<u>2007</u>
Funded status at end of year:		
Projected benefit obligation	\$ 9,210	\$ 8,963
Assets at fair value	<u>6,446</u>	<u>8,947</u>
Funded status	<u><u>\$(2,764)</u></u>	<u><u>\$ (16)</u></u>
Net amount recorded in consolidated balance sheet:		
Noncurrent liabilities	<u><u>\$(2,764)</u></u>	<u><u>\$ (16)</u></u>
Change in projected benefit obligation:		
Benefit obligation at beginning of period	\$(8,963)	\$(8,995)
Service costs	(110)	(39)
Interest costs	(510)	(183)
Actuarial gains (losses)	(146)	121
Benefits paid	<u>519</u>	<u>133</u>
Projected benefit obligation at end of year	<u><u>\$(9,210)</u></u>	<u><u>\$(8,963)</u></u>
Changes in plan assets:		
Fair value of plan assets at beginning of period	\$ 8,947	\$ 9,056
Actual return (loss) on plan assets	(1,981)	24
Benefits paid	<u>(519)</u>	<u>(133)</u>
Fair value of plan assets at end of year	<u><u>\$ 6,447</u></u>	<u><u>\$ 8,947</u></u>
Accumulated benefit obligation at end of year	<u><u>\$(9,188)</u></u>	<u><u>\$(8,946)</u></u>

The weighted-average assumptions used to determine pension benefit obligation were as follows:

	<u>2008</u>	<u>2007</u>
Discount rate	5.74%	5.95%
Rate of long-term compensation increase	4.00%	4.00%

Components of the related tax effects for each component of other comprehensive income follows related to the plan for the years ended December 31, 2008 and 2007 are as follows (in thousands):

	<u>2008</u>		
	<u>Before-Tax Amount</u>	<u>Tax (Expense) or Benefit</u>	<u>Net-of- Tax Amount</u>
Accumulated other comprehensive income (loss) at beginning of year	\$ (91)	\$ 35	\$ (56)
Net actuarial loss arising during current year	<u>(2,824)</u>	<u>1,101</u>	<u>(1,723)</u>
Accumulated other comprehensive income (loss) at end of year(1)	<u><u>\$(2,915)</u></u>	<u><u>\$(1,136)</u></u>	<u><u>\$(1,779)</u></u>

(1) Approximately \$194 of actuarial net loss included in accumulated other comprehensive loss will be amortized into income in 2009.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

	2007	2007	2007
	Before- Tax Amount	Tax (Expense) or Benefit	Net-of- Tax Amount
Accumulated other comprehensive income at date of acquisition . .	\$ —	\$—	\$ —
Net actuarial loss arising during current year	(91)	35	(56)
Accumulated other comprehensive income (loss) at end of year . . .	<u>\$(91)</u>	<u>\$35</u>	<u>\$(56)</u>

The change in unrecognized net gain/loss is one measure of the degree to which important assumptions have coincided with actual experience. The company changes important assumptions whenever changing conditions warrant. The discount rate and the expected long term return on plan asset assumptions are assessed annually. Other material assumptions include the compensation increase rates, rates of employee termination, and rates of participant mortality. The discount rate was determined by projecting the plan's expected future benefit payments as defined for the projected benefit obligation, discounting those expected payments using a theoretical zero-coupon spot yield curve derived from a universe of high-quality bonds as of the measurement date, and solving for the single equivalent discount rate that resulted in the same projected benefit obligation. The expected return on plan assets was determined based on historical and expected future returns of the various asset classes, using the target allocations as follows: equity securities (65%), debt securities (25%) and other (10%). The plan's investment policy includes a mandate to diversify assets and invest in a variety of asset classes to achieve that goal. The plan's assets are currently invested in a variety of funds representing most standard equity and debt security classes. While no significant changes in the asset allocation are expected during the coming year, the Company may make changes at any time.

The following estimated future benefit payments are expected to be paid in the years indicated (in thousands):

2009		\$ 518
2010		595
2011		607
2012		600
2013		610
2014 – 2018		3,862

8. Commitments and Contingencies

a. Operating Lease Obligations

The Company leases certain of its manufacturing facilities under noncancelable operating leases expiring at various dates through December 2013. The Company incurred rental expense under these leases of \$3.0 million, \$2.7 million and \$2.8 million for the years ended 2008, 2007 and 2006, respectively. The approximate minimum rental commitments required under existing noncancelable leases as of December 31, 2008 are as follows (in thousands):

2009		\$2,997
2010		2,586
2011		742
2012		285
2013		99
		<u>\$6,709</u>

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

b. Legal Proceedings

In August, September and December 2006, shareholder derivative lawsuits were filed in the California Superior Court for Orange County, purportedly on behalf of Ceradyne against various current and former officers and directors of the Company relating to alleged backdating of stock options. Each state court complaint alleged claims for breach of fiduciary duty, abuse of control, gross mismanagement, waste of corporate assets, unjust enrichment, accounting, rescission, constructive trust, and violations of California Corporations Code. All state court actions have been consolidated into one case, designated, *In re Ceradyne, Inc. Derivative Litigation*, Orange County Superior Court, Case No. 06-CC-00156.

In September and December 2006, shareholder derivative lawsuits were filed in the United States District Court for the Central District of California, purportedly on behalf of Ceradyne against various current and former officers and directors of the Company relating to alleged backdating of stock options. All federal court actions have been consolidated into one case, designated, *In re Ceradyne, Inc. Derivative Litigation*, Master File No. SA CV 06-919 JVS. The consolidated federal action alleges, pursuant to a first amended consolidated complaint filed on September 17, 2007, claims for violations of Section 10(b) of the Securities Exchange Act and Rule 10b-5 thereunder, violations of Section 14(a) of the Securities Exchange Act, violations of Section 20(a) of the Securities Exchange Act, insider selling under the California Corporations Code, as well as common law claims for accounting, breach of fiduciary duty, aiding and abetting breaches of fiduciary duty, unjust enrichment, rescission and waste.

The plaintiffs in both the state and federal actions seek to require the individual defendants to rescind stock options they received which have an exercise price below the closing price of the Company's common stock on the date of grant, to disgorge the proceeds of options exercised, to reimburse the Company for damages of an unspecified amount, and also seek certain equitable relief, attorneys' fees and costs.

In summary, there are currently two shareholder derivative actions pending which contain substantially similar allegations. The cases filed in the Orange County Superior Court have been consolidated into one case, designated, *In re Ceradyne, Inc. Derivative Litigation*, Orange County Superior Court, Case No. 06-CC-00156. The cases filed in the United States District Court for the Central District of California have all been consolidated into one case, designated, *In re Ceradyne, Inc. Derivative Litigation*, Master File No. SA CV 06-919 JVS.

On September 26, 2008, all of the parties to the two derivative actions entered into a memorandum of understanding agreeing in principle to a proposed global settlement of these derivative actions. On November 28, 2008, the parties filed a stipulation of settlement with the federal court. The proposed settlement calls for the Company to adopt certain corporate governance reforms and payment by the Company's insurance carriers of \$1.125 million in attorney's fees to the plaintiffs' attorneys, without any payment by Ceradyne or the other defendants, and for dismissal of the actions with prejudice. The Company and the individual defendants have denied and continue to deny any and all allegations of wrongdoing in connection with this matter, but believe that given the uncertainties and cost associated with litigation, the settlement is in the best interests of the Company, its stockholders, and the individual defendants. On January 9, 2009, the federal court granted preliminary approval of the settlement and set a final approval hearing for May 18, 2009.

The proposed settlement is conditioned upon final court approval after notice to Ceradyne's shareholders and expiration of the time for appeal from any order of the Court approving the settlement. There can be no assurance that the final settlement will be obtained.

A class action lawsuit was filed on March 23, 2007, in the California Superior Court for Orange County (Civil Action No. 07CC01232), in which it is asserted that the representative plaintiff, a former Ceradyne employee, and the putative class members, were not paid overtime at an appropriate overtime rate. The complaint alleges that the purportedly affected employees should have had their regular rate of pay for purposes of calculating overtime, adjusted to reflect the payment of a bonus to them for the four years

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

preceding the filing of the complaint. The complaint further alleges that a waiting time penalty should be assessed for the failure to timely pay the correct overtime payment. Ceradyne has filed an answer denying the material allegations of the complaint. We believe that the lawsuit is without merit on the basis that our bonus policy is discretionary and is not of the type that is subject to inclusion in the regular hourly rate for purposes of calculating overtime, and we have been vigorously defending this action. The motion for class certification was heard on November 13, 2008 and class certification was granted. On January 6, 2009, the court entered an order certifying the class. Ceradyne has filed a petition for writ of mandate to have the Court of Appeal review the decision concerning class certification as Ceradyne contends that the putative class members are not similarly situated and, therefore, this case should not proceed as a class action. No ruling has been made by the Court of Appeal as of the date of this report.

9. Disclosure About Segments of Enterprise and Related Information

The Company serves its markets and manages its business through six operating segments, each of which has its own manufacturing facilities and administrative and selling functions. The Company's Advanced Ceramic Operations, located in Costa Mesa, Irvine and San Diego, California, Lexington, Kentucky and Wixom, Michigan primarily produces armor, orthodontic products, diesel engine parts, components for semiconductor equipment, and houses the Company's SRBSN research and development activities. The Company's cathode development and production are handled through its Semicon Associates division located in Lexington, Kentucky. Fused silica products, including missile radomes and crucibles for photovoltaic solar cell applications are produced at the Company's Thermo Materials division located in Scottdale and Clarkston, Georgia. The Company's manufacturing facility in Tianjin, China manufactures fused silica crucibles, and is part of the Thermo Materials operating segment. Minco, Inc., which Ceradyne acquired in July 2007, also is included in the Thermo Materials operating segment. Minco manufactures fused silica, which is a primary raw material used in products manufactured by our Thermo Materials division. The Company's ESK Ceramics subsidiary is located in Kempten, Germany and Bazet, France. This subsidiary produces ceramic powders, including boron carbide powder for ceramic body armor, evaporation boats for metallization, functional and frictional coatings utilized in the automotive and textile industries, high performance pump seals, fluid handling, refractory products and ceramic powders used in cosmetics. The Company's Ceradyne Canada subsidiary acquired certain assets in June 2006, including a building, equipment and technology, related to the production of structural neutron absorbing materials for use in the storage of spent nuclear rods. The building and operations of Ceradyne Canada are located in Chicoutimi, Quebec, Canada. The Company added a sixth operating segment in August 2007, when it acquired EaglePicher Boron, LLC. The Company has changed the name of this subsidiary to Boron Products, LLC and does business as Ceradyne Boron Products. Boron Products owns certain assets, including approximately 155 acres and several buildings, equipment and technology, related to the production of the boron isotope 10B. This isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant neutron radiation control. Boron Products also produces complementary chemical isotopes used in the normal operation and control of nuclear power plants. SemEquip, Inc., which the Company acquired in August 2008, develops and markets cluster ion implantation sub-systems and advanced ion source materials for the manufacture of logic and memory semiconductor chips. SemEquip is included in the Boron Products operating segment. The U.S. government and government agencies collectively represented approximately 54.1% of net sales in 2008, 71.6% of net sales in 2007, and 73.4% of net sales in 2006.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

**SEGMENT INFORMATION FOR THE YEARS ENDED
DECEMBER 31, 2008, 2007 AND 2006**

	<u>2008</u>	<u>2007</u>	<u>2006</u>
	(Amounts in thousands)		
<u>Revenue</u>			
ACO	\$450,452	\$587,279	\$528,687
ESK Ceramics	152,238	160,623	148,154
Semicon Associates	8,551	7,970	9,065
Thermo Materials	80,158	32,025	15,021
Ceradyne Canada	5,222	3,916	2,405
Boron	19,007	7,766	—
Inter-segment elimination	<u>(35,431)</u>	<u>(42,744)</u>	<u>(40,444)</u>
Total revenue from external customers	<u>\$680,197</u>	<u>\$756,835</u>	<u>\$662,888</u>
<u>Depreciation and Amortization</u>			
ACO	\$ 10,523	\$ 9,328	\$ 7,589
ESK Ceramics	13,144	10,630	8,822
Semicon Associates	423	346	363
Thermo Materials	5,497	3,061	921
Ceradyne Canada	1,043	732	359
Boron	6,038	2,654	—
Total	<u>\$ 36,668</u>	<u>\$ 26,751</u>	<u>\$ 18,054</u>
<u>Segment Income before Provision for Income Taxes</u>			
ACO	\$149,060	\$212,681	\$177,039
ESK Ceramics	4,214	13,373	17,304
Semicon Associates	1,377	1,131	1,580
Thermo Materials	23,694	2,304	881
Ceradyne Canada	(69)	(3,041)	(680)
Boron	(15,508)	727	—
Inter-segment elimination	<u>1,857</u>	<u>(632)</u>	<u>(1,565)</u>
Total	<u>\$164,625</u>	<u>\$226,543</u>	<u>\$194,559</u>
<u>Segment Assets</u>			
ACO	\$384,816	\$410,244	\$396,766
ESK Ceramics	226,626	209,384	174,926
Semicon Associates	5,939	5,682	6,174
Thermo Materials	96,163	67,465	17,844
Ceradyne Canada	21,667	20,480	18,105
Boron	119,786	70,031	—
Total	<u>\$854,997</u>	<u>\$783,286</u>	<u>\$613,815</u>
<u>Expenditures for PP&E</u>			
ACO	\$ 5,150	\$ 8,174	\$ 15,598
ESK Ceramics	22,079	17,384	6,749
Semicon Associates	371	396	250
Thermo Materials	12,635	14,696	4,696
Ceradyne Canada	3,381	1,528	8,715
Boron	431	67	—
Total	<u>\$ 44,047</u>	<u>\$ 42,245</u>	<u>\$ 36,008</u>

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

**SEGMENT INFORMATION FOR THE YEARS ENDED
DECEMBER 31, 2008, 2007 AND 2006**

	<u>2008</u>	<u>2007</u>	<u>2006</u>
<u>Percentage of U.S. net sales from external customers</u>			
ACO	63%	75%	78%
ESK Ceramics	2%	2%	3%
Semicon Associates	1%	1%	1%
Thermo Materials	4%	2%	2%
Ceradyne Canada	1%	1%	—
Boron	<u>2%</u>	<u>1%</u>	<u>—</u>
Total percentage of U.S. net sales from external customers	<u>73%</u>	<u>82%</u>	<u>84%</u>
<u>Percentage of foreign net sales from external customers</u>			
ACO	3%	2%	2%
ESK Ceramics	16%	14%	13%
Semicon Associates	—	—	—
Thermo Materials	7%	2%	1%
Ceradyne Canada	—	—	—
Boron	<u>1%</u>	<u>—</u>	<u>—</u>
Total percentage of foreign net sales from external customers	<u>27%</u>	<u>18%</u>	<u>16%</u>
<u>Percentage of total net sales from external customers</u>			
ACO	66%	77%	80%
ESK Ceramics	18%	16%	16%
Semicon Associates	1%	1%	1%
Thermo Materials	11%	4%	3%
Ceradyne Canada	1%	1%	—
Boron	<u>3%</u>	<u>1%</u>	<u>—</u>
Total percentage of net sales from external customers	<u>100%</u>	<u>100%</u>	<u>100%</u>

The following is revenue by product line for Advanced Ceramic Operations for the years ended (amounts in thousands):

	December 31,		
	<u>2008</u>	<u>2007</u>	<u>2006</u>
Armor	\$410,649	\$551,301	\$488,230
Automotive	17,604	10,961	17,018
Orthodontics	9,977	10,603	10,372
Industrial	<u>12,222</u>	<u>14,414</u>	<u>13,067</u>
	<u>\$450,452</u>	<u>\$587,279</u>	<u>\$528,687</u>

10. Share Based Compensation

The Company adopted SFAS 123(R) using the modified prospective application transition method, which requires the application of the accounting standard as of January 1, 2006, the first day of the Company's fiscal

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

year 2006. The Company's Consolidated Financial Statements as of and for the years ended December 31, 2008, December 31, 2007 and December 31, 2006 reflect the impact of SFAS 123(R). In accordance with this transition method, the Company's Consolidated Financial Statements for prior periods have not been restated to reflect, and do not include, the impact of SFAS 123(R). Share-based compensation expense recognized under SFAS 123 (R) for the years ended December 31, 2008, December 31, 2007 and December 31, 2006 was \$3.1 million, \$2.5 million and \$1.5 million, respectively, which was related to stock options and restricted stock units. Additionally, a pretax stock-based compensation charge of approximately \$2.4 million was taken in the year ended December 31, 2006. See Note 11 below for information concerning an internal investigation into our stock option grant practices for the period of 1997 through June 30, 2006. The information in this Note 10 is qualified by reference to the information set forth in Note 11 to the extent applicable.

SFAS 123(R) requires companies to estimate the fair value of share-based payment awards on the grant-date using an option-pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods in the Company's Consolidated Statements of Income. Prior to the adoption of SFAS 123(R), the Company accounted for share-based awards to employees and directors using the intrinsic value method in accordance with APB 25 as allowed under SFAS No. 123, "Accounting for Stock-Based Compensation" ("SFAS 123"). Under the intrinsic value method, no share-based compensation expense related to stock options had been recognized in the Company's Consolidated Statements of Operations on the basis that the exercise price of the Company's stock options granted to employees and directors equaled the fair market value of the underlying stock at the grant date. Specifically, the Company's original accounting was based upon the understanding that options were granted with no intrinsic value. However, as described in Note 11, the Company now believes that certain options were granted with a positive intrinsic value.

Share-based compensation expense is based on the value of the portion of share-based payment awards that is ultimately expected to vest. SFAS 123(R) requires forfeitures to be estimated at the time of grant in order to estimate the amount of share-based awards that will ultimately vest. The forfeiture rate is based on historical rates. Share-based compensation expense recognized in the Company's Consolidated Statements of Income for the years ended December 31, 2008, December 31, 2007 and December 31, 2006 includes (i) compensation expense for share-based payment awards granted prior to, but not yet vested as of January 1, 2006, based on the grant-date fair value estimated in accordance with the pro forma provisions of SFAS 123 and (ii) compensation expense for the share-based payment awards granted subsequent to December 31, 2005, based on the grant date fair value estimated in accordance with the provisions of SFAS 123(R). As share-based compensation expense recognized in the Consolidated Statement of Income for the years ended December 31, 2008, December 31, 2007 and December 31, 2006 is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures.

The Company maintains the 1994 Stock Incentive Plan and 2003 Stock Incentive Plan. The Company was authorized to grant options for up to 2,362,500 shares under its 1994 Stock Incentive Plan. The Company has granted options for 2,691,225 shares and has had cancellations of 396,911 shares through December 31, 2008. There are no remaining stock options available to grant under this plan. The options granted under this plan generally became exercisable over a five-year period for incentive stock options and six months for nonqualified stock options and have a maximum term of ten years.

The 2003 Stock Incentive Plan was amended in 2005 to allow the issuance of Restricted Stock Units (the "Units") to eligible employees and non-employee directors. The Units are payable in shares of the Company's common stock upon vesting. For directors, the Units vest annually over three years on the anniversary date of their issuance. For officers and employees, the Units vest annually over five years on the anniversary date of their issuance.

The Company may grant options and Units for up to 1,125,000 shares under the 2003 Stock Incentive Plan. The Company has granted options for 475,125 shares and Units for 395,476 shares under this plan

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

through December 31, 2008. There have been cancellations of 76,025 shares associated with this plan through December 31, 2008. The options under this plan have a life of ten years.

During the years ended December 31, 2008 and 2007, the Company issued Units to certain directors, officers and employees with weighted average grant date fair values and Units issued as indicated in the table below. Pursuant to SFAS 123(R), the Company records compensation expense for the amount of the grant date fair value on a straight line basis over the vesting period. The Company incurred charges associated with the vesting of the Units of \$2.7 million for the year ended December 31, 2008, \$1.7 million for the year ended December 31, 2007, and \$0.8 million for the year ended December 31, 2006.

Share-based compensation expense reduced the Company's results of operations as follows (in thousands, except per share amounts):

	<u>2008</u>	<u>2007</u>	<u>2006</u>
Share-based compensation expense recognized:			
General and administrative, options	\$ 438	\$ 710	\$ 3,074
General and administrative, Units	2,671	1,741	827
Related deferred income tax benefit	<u>(1,094)</u>	<u>(890)</u>	<u>(1,326)</u>
Decrease in net income	<u>\$ 2,015</u>	<u>\$ 1,561</u>	<u>\$ 2,575</u>

The amounts above include the impact of recognizing compensation expense related to non-qualified stock options.

As of December 31, 2008, there was \$0.7 million of total unrecognized compensation cost related to 25,875 non-vested outstanding stock options, with a per share weighted average value of \$20.74. The unrecognized expense is anticipated to be recognized on a straight-line basis over a weighted average period of 0.9 years. In addition, the aggregate intrinsic value of stock options exercised for the twelve months ended December 31, 2008 was \$0.8 million.

As of December 31, 2008, there was approximately \$10.4 million of total unrecognized compensation cost related to non-vested Units granted under the 2003 Stock Incentive Plan. That cost is expected to be recognized over a weighted average period of 3.6 years.

The following is a summary of stock option activity:

	<u>2008</u>		<u>2007</u>		<u>2006</u>	
	<u>Number of Options</u>	<u>Weighted Average Exercise Price</u>	<u>Number of Options</u>	<u>Weighted Average Exercise Price</u>	<u>Number of Options</u>	<u>Weighted Average Exercise Price</u>
Outstanding, beginning of year . . .	497,325	\$12.04	677,370	\$11.41	977,870	\$10.49
Options granted	—	\$ —	—	\$ —	—	\$ —
Options exercised	(30,675)	\$ 9.04	(159,495)	\$ 8.15	(294,050)	\$ 8.10
Options cancelled	<u>(3,750)</u>	\$15.05	<u>(20,550)</u>	\$21.50	<u>(6,450)</u>	\$22.71
Outstanding, end of year	<u>462,900</u>	\$12.22	<u>497,325</u>	\$12.04	<u>677,370</u>	\$11.41
Exercisable, end of year	437,025	\$11.71	429,600	\$10.83	481,470	\$ 9.83

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The following is a summary of Unit activity:

	2008		2007		2006	
	Units	Weighted Average Grant Fair Value	Units	Weighted Average Grant Fair Value	Units	Weighted Average Grant Fair Value
Outstanding, beginning of year . . .	149,759	\$52.94	137,100	\$41.13	77,000	\$22.44
Granted	168,076	\$40.54	72,850	\$66.06	77,550	\$55.48
Vested	(40,671)	\$49.09	(31,791)	\$41.47	(16,450)	\$22.68
Forfeited	(5,900)	\$49.08	(28,400)	\$42.39	(1,000)	\$22.46
Non-vested Units at end of year . .	<u>271,264</u>	\$45.90	<u>149,759</u>	\$52.94	<u>137,100</u>	\$41.13

The following table summarizes information regarding options outstanding and options exercisable at December 31, 2008:

Range of Exercise Prices	Outstanding				Exercisable			
	Number of Options	Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Aggregate Intrinsic Value (000s)	Number of Options	Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Aggregate Intrinsic Value (000s)
\$1.44 - \$2.81	900	0.72	\$ 1.61	\$ 17	900	0.72	\$ 1.61	\$ 17
\$2.98 - \$4.58	213,975	3.08	\$ 4.12	\$3,464	213,975	3.08	\$ 4.12	\$3,464
\$10.53 - \$16.89	122,025	4.69	\$16.89	\$ 417	122,025	4.69	\$16.89	\$ 417
\$18.80 - \$24.07	<u>126,000</u>	5.71	\$21.51	\$ 23	<u>100,125</u>	5.66	\$21.71	\$ 8
Total	<u>462,900</u>	4.22	\$12.22	\$3,921	<u>437,025</u>	4.12	\$11.71	\$3,906

The following table summarizes information regarding Units outstanding at December 31, 2008:

Range of Grant Prices	Outstanding			
	Number of Units	Average Remaining Contractual Life (Years)	Weighted Average Grant Price	Aggregate Intrinsic Value (000s)
\$21.46 - \$22.68	21,800	1.39	\$22.34	\$ —
\$37.41 - \$39.43	110,076	4.21	\$38.58	\$ —
\$42.28 - \$45.7	62,838	3.88	\$44.49	\$ —
\$52.47 - \$62.07	41,130	2.68	\$59.01	\$ —
\$66.35 - \$81.18	<u>35,420</u>	3.07	\$70.43	\$ —
	<u>271,264</u>	3.52	\$45.90	\$ —

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options that have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions, including the expected stock price volatility. The Company's options have characteristics significantly different from those of traded options, and changes in the subjective input assumptions can materially affect the fair value estimate.

The Company calculates expected volatility based on historical data of the Company's common stock. The risk-free interest rate assumption is based upon an observed interest rate appropriate for the term of the Company's employee stock options. The dividend yield assumption is based on the Company's intent not to issue a dividend under its dividend policy. The expected holding period assumption was estimated based on historical experience.

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

11. Review of Historical Stock Option Grant Procedures

In July 2006, the Company voluntarily initiated a review of its historical stock option grant practices and related accounting treatment. The review was conducted by a Special Committee comprised of three independent members of the Company's Board of Directors, with the assistance of independent legal counsel and forensic accounting experts. The scope of the Special Committee's review included all stock options granted by the Company from January 1997 through September 2003. The Special Committee has completed its review.

Until September 2003, stock option grants generally were approved by unanimous written consents signed by the members of the Stock Option Committee of the Board of Directors. Throughout this period, the Stock Option Committee consisted of the CEO and one other non-management Director. The date specified as the grant date in each unanimous written consent was used (i) to determine the exercise price of the options and (ii) as the accounting measurement date.

The review found that from January 1997 through September 2003, the date selected by management as the grant date and accounting measurement date was the date specified in the unanimous written consent, but that, in all but one case, the unanimous written consents were not prepared, approved or executed by the Company's Stock Option Committee until a later date. There were a total of 23 grant dates from January 1997 through September 2003. The Company's CEO was responsible for selecting the grant dates and followed a consistent practice of seeking low grant prices and he was unaware of the accounting implications of the method he used. Therefore, the use of the date specified in the unanimous written consent as the accounting measurement date was incorrect in all but one case. The proper accounting measurement date was the date the unanimous written consent was signed by the members of the Stock Option Committee.

Based upon information gathered during the review by independent legal counsel, the Special Committee and the Board of Directors have concluded that, while the Company applied an option price date selection practice that resulted in the use of incorrect accounting measurement dates for options granted between January 1997 and September 2003, the accounting errors resulting from the use of incorrect measurement dates were not the product of any deliberate or intentional misconduct by the Company or its executives, staff or Board of Directors. However, as a result of using revised measurement dates for options granted from January 1997 through September 2003, the Company recorded a charge in the second quarter ended June 30, 2006 of \$3.4 million (\$2.3 million after income taxes) pertaining to the years ended December 31, 1997 to 2005 and the six months ended June 30, 2006 (the "Stock-Based Charge"). The Stock-Based Charge was included as a component of general and administrative expenses in the consolidated statements of income as this is where the affected individual's normal compensation costs are recorded. The Stock-Based Charge includes non-cash compensation expense of \$2.2 million (\$1.4 million after income taxes) primarily related to stock option grants made during the period from January 1997 through September 2003 that should have been measured as compensation cost at the actual stock option grant dates, and subsequently amortized to expense over the vesting period for each stock option grant. The Stock-Based Charge also includes \$1.2 million (\$0.9 million after income taxes) of estimated additional employment and other taxes that are expected to become payable.

From September 2003 to February 2005, all stock option grants have been approved at meetings held by the Stock Option Committee, and, since February 2005, all stock option grants have been approved at meetings held by the Compensation Committee of the Board of Directors. The dates of these meetings have been used correctly as the accounting measurement date for all stock options granted since September 2003.

Had this estimated Stock-Based Charge been reflected, as and when incurred, in the Company's results of operations for prior years, the impact on net income for Ceradyne's fiscal years ended December 31 would have been a reduction of \$21,000 in 1997, a reduction of \$45,000 in 1998, a reduction of \$47,000 in 1999, a reduction of \$104,000 in 2000, a reduction of \$269,000 in 2001, a reduction of \$74,000 in 2002, a reduction

CERADYNE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

of \$347,000 in 2003, a reduction of \$611,000 in 2004, and a reduction of \$324,000 in 2005. As of December 31, 2006, the total remaining incremental stock-based compensation charge related to these stock option grants that are expected to vest in future periods with a revised accounting measurement date is immaterial. There was no impact on revenue or net cash provided by operating activities as a result of the estimated compensation charge.

The Company does not believe that a restatement of its prior-period financial statements is required for the Stock-Based Charge. Based on the materiality guidelines contained in SEC Staff Accounting Bulletin No. 99, *Materiality* (SAB 99), the Company believes that the Stock-Based Charge is not material to any of the individual prior periods affected and the aggregate Stock-Based Charge is not material to the results for the year ended December 31, 2006.

Prior to December 31, 2006, the current members of Ceradyne's Board of Directors, all current executive officers and all other employees of the Company amended all unexercised stock options they held which had an exercise price that is less than the price of the Company's common stock on the actual date of grant, by increasing the exercise price to an amount equal to the closing price of the common stock as of the actual grant date. The Company has and will continue to reimburse all non-executive officer employees for the increase in the exercise price for the modified options as they vest. Such reimbursement has and will not be material.

12. Quarterly Financial Information (unaudited)

The results by quarter for 2008 and 2007 (amounts in thousands except per share data):

Quarter Ending

	<u>March 31, 2007</u>	<u>June 30, 2007</u>	<u>September 30, 2007</u>	<u>December 31, 2007</u>
Net sales	\$188,443	\$185,359	\$191,606	\$191,428
Gross profit	77,112	77,384	75,787	75,766
Net income	38,089	38,303	32,650	35,224
Basic income per share	\$ 1.40	\$ 1.41	\$ 1.20	\$ 1.29
Diluted income per share	\$ 1.38	\$ 1.38	\$ 1.16	\$ 1.28

Quarter Ending

	<u>March 31, 2008</u>	<u>June 30, 2008</u>	<u>September 30, 2008</u>	<u>December 31, 2008</u>
Net sales	\$188,537	\$184,975	\$167,746	\$138,939
Gross profit	71,529	75,561	66,664	51,558
Net income	32,902	33,196	19,399	21,253
Basic income per share	\$ 1.21	\$ 1.26	\$ 0.74	\$ 0.81
Diluted income per share	\$ 1.20	\$ 1.25	\$ 0.73	\$ 0.81

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.

CERADYNE, INC.

By: /s/ JOEL P. MOSKOWITZ

Joel P. Moskowitz
Chief Executive Officer

February 24, 2009

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.

<u>/s/ JOEL P. MOSKOWITZ</u> Joel P. Moskowitz	Chairman of the Board, Chief Executive Officer, President and Director (Principal Executive Officer)	February 24, 2009
<u>/s/ JERROLD J. PELLIZZON</u> Jerrold J. Pellizzon	Chief Financial Officer (Principal Financial and Accounting Officer)	February 24, 2009
<u>/s/ RICHARD A. ALLIEGRO</u> Richard A. Alliegro	Director	February 24, 2009
<u>/s/ FRANK EDELSTEIN</u> Frank Edelstein	Director	February 24, 2009
<u>/s/ RICHARD A. KERTSON</u> Richard A. Kertson	Director	February 24, 2009
<u>/s/ WILLIAM C. LACOURSE</u> William C. LaCourse	Director	February 24, 2009
<u>/s/ MILTON L. LOHR</u> Milton L. Lohr	Director	February 24, 2009

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COMPANY DIRECTORY

Directors	Joel P. Moskowitz Richard A. Allegro Frank Edelstein Richard A. Kertson William C. LaCourse Milton L. Lohr	<i>Chairman of the Board, Chief Executive Officer and President Ceramic Technology Consultant Independent Consultants Former CFO of Varco International, Inc. Kruson Distinguished Professor, NYS College of Ceramics, Alfred University Business and Defense Consultant</i>	
Officers	Joel P. Moskowitz Thomas A. Cole Thomas Joengling, Ph.D. Marc A. King Michael A. Kraft Bruce Lockhart Kenneth R. Morris Jerrold J. Pellizzon David P. Reed Jeffrey J. Waldal	<i>Chairman of the Board, Chief Executive Officer and President Vice President Business Development Vice President, and President of ESK Ceramics President Ceradyne Armor Systems, Inc. Vice President Nuclear and Semiconductor Business Units Vice President, and President of Ceradyne Thermo Materials Vice President Operations Chief Financial Officer and Corporate Secretary Vice President, and President of North American Operations Vice President, and President of Semicon Associates, a Ceradyne Company</i>	
Transfer Agent and Registrar	American Stock Transfer and Trust Co. 59 Maiden Lane New York, NY 10038-4667		
General Counsel	Stradling Yocca Carlson & Rauth 660 Newport Center Drive, 16th Floor Newport Beach, California 92660-6401		
Independent Public Accountants	PricewaterhouseCoopers LLP 2020 Main Street, Suite 400 Irvine, California 92614		
Corporate Offices	Ceradyne, Inc. 3169 Red Hill Avenue Costa Mesa, California 92626 (714) 549-0421 (800) 839-2189 www.ceradyne.com		
Manufacturing Facilities	<p>▼ Advanced Ceramic Operations:</p> <p><i>Ceradyne Advanced Ceramic Operations</i> 3169 Red Hill Avenue Costa Mesa, CA 92626</p> <p>17466 Daimler Avenue Irvine, CA 92614</p> <p>1922 Barranca Parkway Irvine, CA 92606</p> <p>2416 Merchant Street Lexington, KY 40511</p> <p><i>Ceradyne Boron Products LLC</i> 798 Highway 69A Quapaw, OK 74363</p> <p><i>Ceradyne Canada ULC</i> 2702 Talbot Blvd. Chicoutimi, Quebec Canada, G7H 5B1</p>	<p><i>Minco, Inc.</i> 510 Midway Circle Midway, TN 37809</p> <p><i>SemEquip, Inc.</i> 34 Sullivan Road North Billerica, MA 01862</p> <p><i>Ceradyne Vehicle Armor Systems</i> 50370 Dennis Court Wixom, MI 48393</p> <p>▼ Ceradyne Thermo Materials:</p> <p><i>Ceradyne Thermo Materials</i> 3449 Church Street Scottdale, GA 30079</p> <p>696 Park North Blvd. Clarkston, GA 30021</p> <p>780 Park North Blvd. Clarkston, GA 30021</p>	<p><i>Ceradyne Tianjin Technical Ceramics</i> No. 4737 Dongjiang Road Tianjin Tanggu Marine Hi-Tech Development Area Tianjin, China, 300451</p> <p>▼ ESK Ceramics:</p> <p><i>ESK Ceramics</i> Max-Schaidhauf-Strasse 25 87437 Kempten, Germany</p> <p><i>ESK Ceramics France</i> Zone Industrielle-BP7 65460 Bazet, France</p> <p>▼ Semicon Associates 695 Laco Drive Lexington, KY 40510</p>
Annual Meeting	The annual stockholders' meeting will be held at the Radisson Hotel, 4545 MacArthur Blvd., Newport Beach, CA 92660 on Tuesday, June 9, 2009, at 10:00 A.M.		



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