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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 1
TO
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, 2003

OR

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

For the transition period from _____to _____

Commission file number 1-15885

BRUSH ENGINEERED MATERIALS INC.

(Exact name of Registrant as specified in its charter)

OHIO	34-1919973
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
17876 ST. CLAIR AVENUE, CLEVELAND, OHIO	44110
(Address of principal executive offices)	(Zip Code)

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE 216-486-4200

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

TITLE OF EACH CLASS	NAME OF EACH EXCHANGE ON WHICH REGISTERED
Common Stock, no par value	New York Stock Exchange

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

None

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 an accelerated filed (as defined in Rule 12b-2 of the Act). Yes ☒ No ☐

The aggregate market value of Common Stock, no par value, held by non-affiliates of the registrant (based upon the closing sale price on the New York Stock Exchange) on June 27, 2003 was approximately $128,990,068.

As of March 5, 2004, there were 16,711,853 shares of Common Stock, no par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the annual meeting of shareholders held on May 4, 2004 are incorporated by reference into Part III.

Brush Engineered Materials Inc. (the "Registrant") is filing this Amendment No. 1 (the "Amendment") to its Annual Report on Form 10-K for the year ended December 31, 2003 (the "Annual Report") to amend and restate in its entirety (a) Items 1 and 3 of Part I and Items 5, 7, 7A and 8 of Part II to revise the disclosure contained therein, (b) Items 10 and 11 of Part III to add and/or clarify certain references to its Proxy Statement filed on March 15, 2004 and (c) Item 15 to amend and restate Schedule II — Valuation and Qualifying Accounts references in that item and to update references to exhibits previously filed. In addition, pursuant to Rule 12b-15 promulgated under the Securities Exchange Act of 1934, the Registrant is including with this Amendment the certifications required under Sections 302 and 906 of the Sarbanes-Oxley Act of 2002. This Amendment continues to speak as of the date of the original filing of the Annual Report, and the Registrant has not updated the disclosures contained herein to reflect any events that occurred at a later date.

BRUSH ENGINEERED MATERIALS INC.

Index to Annual Report
On Form 10-K for
Year Ended December 31, 2003

Part I

Item 1. Business

Overview

We are a leading global provider of high-performance engineered materials for a growing variety of commercial and industrial applications where superior performance and reliability are essential. Our engineered materials are critical components of many high-technology or high-performance products and enable those products to be made stronger, smaller and lighter, with improved performance characteristics. We produce and distribute high-performance beryllium products, alloy products, electronic products, precious metal products and engineered material systems. Our engineered materials have product applications in a variety of end-use markets, including telecommunications and computer, automotive electronics, optical media, industrial components, appliance, aerospace and defense.

Beryllium is a key raw material in many of our products. Beryllium is a naturally occurring element — number four on the periodic table of elements, with the symbol "Be" — and is the lightest structural metal on Earth. It is stiffer than steel, lighter than aluminum and possesses other unique mechanical and thermal properties. Beryllium is extracted from bertrandite and beryl ores. We operate the only active bertrandite ore mine in the developed world, located on 7,500 acres in Juab County, Utah. Through our subsidiaries Brush Wellman Inc., Brush Resources Inc. and Brush Ceramic Products Inc., we are the world's only fully integrated provider of beryllium, beryllium-containing alloys and beryllia ceramics.

We were organized as a holding company for our various businesses in 2000. Our subsidiary Brush Wellman Inc. was founded in 1931 as The Brush Beryllium Company, was publicly traded since 1956 and was listed on the NYSE in 1972. We currently operate 16 manufacturing facilities located in the United States, Singapore and the Philippines. We also have global service and distribution centers in Germany, Japan, Singapore, England and the United States, and sales offices throughout the United States, China and Taiwan.

We have two business segments: Metal Systems Group and Microelectronics Group. Our Metal Systems Group accounted for approximately 60% of our sales during 2003, and our Microelectronics Group accounted for approximately 39% of our sales during 2003. The balance of our sales during 2003 were from Brush Resources, which sells beryllium hydroxide produced through its Utah operations to businesses within our Metal Systems Group and to outside customers.

Metal Systems Group

Our Metal Systems Group includes Alloy Products, Beryllium Products and Technical Materials Inc., or TMI.

Alloy Products, our largest business, manufactures and sells copper and nickel-based alloy systems, most of which incorporate beryllium. These beryllium alloys exhibit high strength and hardness, good formability and excellent resistance to corrosion, wear and fatigue, while retaining good thermal and electrical conductivity. They often are the material of choice for critical components in cell phones and wireless communications equipment, notebook and network computers and web servers, personal digital assistants ("PDAs"), automotive electronics and industrial products. Alloy Products also manufactures non-beryllium-containing alloys — including ToughMet®, a copper-nickel-tin alloy — which are corrosion and wear resistant, have excellent lubricity properties and are used in plastic mold tooling, aerospace, oil and gas and heavy equipment product applications.

Beryllium Products manufactures pure beryllium and aluminum-beryllium composites that are used in many high-performance applications, primarily for the defense and aerospace industries. Beryllium's unique properties — stiffness, strength, lightweight, temperature resistance and reflectivity — are critical to a number of NASA programs.

TMI produces engineered material systems including clad metals, plated metals and electron beam welded, solder coated and reflow materials. Clad metals are a combination of two or more metals that are bonded to enhance performance properties. Plated metals are metals that are electroplated, or coated, with gold, silver, palladium-nickel, tin, tin-lead or nickel. Electron beam welded materials are precious and non-

precious metals of varying thickness, strength, conductivity and other properties that are welded using an electron beam. Solder coated materials are metals coated with a layer or strips of solder. Reflow materials are soldered using the mass heating of solder or solder paste to form solder strips at metallized areas. These engineered material systems are produced by combining precious and non-precious metals in continuous strip form, which provide a variety of thermal, electrical or mechanical properties over a surface area or particular section of the material. TMI's products are used in complex electrical components in telecommunications systems, automotive electronics, semi-conductors and computers, as well as other high-technology applications.

Microelectronics Group

Our Microelectronics Group includes Williams Advanced Materials Inc., or WAM, and Electronic Products, which consists of Brush Ceramic Products and Zentrix Technologies Inc.

WAM manufactures precious metal and specialty alloy products specifically fabricated to meet the exacting standards required in high reliability applications for the microelectronics, semi-conductor, optical media, including DVDs, electron tube, magnetic head, aerospace and performance film industries.

Brush Ceramic Products produces beryllia ceramic materials used in wireless telecommunications, laser, medical and defense applications. Zentrix manufactures electronic packaging and circuitry used in wireless telecommunications, automotive, medical, aerospace and defense applications.

Our Financial and Operational Initiatives

After generating record sales of $147.2 million during the fourth quarter of 2000 and strong sales of $145.5 million during the first quarter of 2001, we experienced a dramatic and sustained decline in sales. Our quarterly revenue has ranged between approximately $89 million and $106 million since the second quarter of 2001. This drop in sales levels was primarily due to the collapse of the global telecommunications and computer market, which accounted for approximately 50% of our sales in 2000 and approximately 35% of sales in 2003. As a result, we recorded significant operating losses in 2001, 2002 and 2003.

In 2001, we implemented several financial and operational initiatives designed to return us to consistent profitability. These initiatives are focused on five key areas: reducing debt, reducing overhead, improving margins, broadening our revenue base and positioning ourselves to capitalize on a general economic recovery, including a recovery in the telecommunications and computer market.

Through these initiatives, we have reduced total debt, off-balance sheet financing and precious metal consignment obligations by more than $80 million from the end of 2000 to the end of 2003. In December 2003, we completed a five-year, $147.5 million debt refinancing that lowered costs compared to an existing credit and lease facility. We used the proceeds from the transaction to retire existing debt and terminate an existing key off-balance sheet obligation through the purchase of certain leased assets. The refinancing also provides increased liquidity to support working capital requirements for future growth. We achieved targeted overhead cost reductions through, among other things, improved efficiencies, a 27% reduction in headcount from 2000 year-end levels, a wage freeze and fringe benefit reductions. Despite a decline in revenue, our gross margins have improved approximately 3.8 percentage points since 2001. In 2003, Alloy Products reduced manufacturing cycle times for our alloy products by 18%, improved manufacturing inventory turns by 48%, raised yields by 11% and shipped 23% more pounds per manufacturing employee. We also broadened our revenue base through the introduction of several new products for existing and new markets and positioned ourselves to capitalize on growth in Asia by developing sales, marketing and distribution capabilities in a number of markets in the region.

Our Competitive Strengths

Unique Status as a Fully Integrated Provider of Beryllium Products

We operate the only active bertrandite ore mine in the developed world and are the world's only fully integrated provider of beryllium, beryllium-containing alloys and beryllia ceramics. We mine bertrandite ore

at our 7,500-acre mine in Juab County, Utah and extract beryllium from that ore at our processing facility in Delta, Utah. Based on average production levels in recent years, our proven bertrandite ore reserves would last approximately 100 years. As a fully integrated provider, we offer our customers the convenience and security of a single supply chain source for critical engineered materials.

High Barriers to Entry

Our vertical integration, access to beryllium resources, know-how and expertise in refining and processing beryllium and beryllium-containing materials, and the capital investment required in the plant, equipment and health and safety infrastructure for our business establish high barriers to entry for potential competitors.

Product Breadth Within Existing Markets

Each of our businesses provides a diverse selection of products. Product breadth is an important consideration for many customers and distributors in their selection of suppliers. Our extensive product offerings provide an advantage in developing and maintaining relationships with OEMs and in establishing partnerships with distributors.

Global Distribution Network

Our global distribution network allows us to actively market our products and effectively respond to our customers' needs throughout the world. This network includes sales, service and distribution centers in the United States and in key European and Asian markets, as well as sales offices throughout the United States, China and Taiwan. We augment our internal distribution capabilities with a worldwide network of independent distributors.

Strategic Customer Relationships

We have established long-term relationships with a variety of customers in key growth end markets. These relationships allow us to work cooperatively with customers in their new product development activities, which often results in our products being included in design specifications for a customer's new product. We believe that these relationships have resulted from our responsiveness, our ability to meet special customer requirements based on innovative technology, the quality of our products and the speed of our delivery.

Technological Capabilities and Product Quality

We believe that our precious and base metal alloys, precious metal products, precious metal refining, precious metal plating technologies, customized machinery, processes and attention to quality are competitive advantages. A portion of our products and processes are proprietary. We believe that our products' superior characteristics and performance tolerances provide an important competitive advantage, particularly in the sophisticated alloys required for the most demanding end user applications.

Capacity to Support Profitable Market Growth

As the market's demand for engineered materials increases, we are well-positioned to expand our manufacturing output without significant incremental cash investment. In addition to manufacturing capacity, our focus on Six Sigma and lean manufacturing techniques and emphasis on worker productivity have significantly improved our manufacturing efficiency and have positioned us to improve our profitability. Six Sigma is an analytical process that helps companies to improve efficiency, quality and customer satisfaction while reducing cycle time and operating costs.

Significant Operating Expertise

Our senior managers have significant experience in the engineered materials industry. We believe that our management team is successfully implementing our financial and operational initiatives to return us to profitability. We also believe that our management team's extensive experience positions us to identify and capitalize on emerging growth opportunities.

Our Growth Strategy

Our objective is to grow our business profitably while strengthening our position as a leading global provider of high-performance engineered materials. Key elements of our growth strategy are to:

Capture Improved Demand in Telecommunications and Computer Market

We are positioned to benefit from an increase in equipment spending and a general improvement in the conditions of the telecommunications and computer market. During 2003, demand for telecommunications and computer products began to improve as commercial and industrial users began to make more significant expenditures on information and communication systems. This increasing demand among commercial customers was augmented by increasing consumer demand for cellular phones, wireless communication systems and other communication products. We are well positioned in these markets and expect to benefit from improvements in market conditions.

Capitalize on the Trend Towards Higher Performance and Miniaturization of Electronic Components

We seek to capitalize on our ability to provide our customers with engineered materials that are well suited to meet the demanding standards associated with the trend towards higher performance and miniaturization of electronic components. New electronic components must meet enhanced performance requirements, which in turn require materials that can meet demanding mechanical, electrical and thermal properties. These demands for heightened performance are coupled with ongoing efforts to make these components stronger, smaller and lighter. As manufacturers continue to miniaturize their products, more high-performance engineered materials capable of meeting stringent performance and reliability standards need to be included in those products.

Expand and Diversify Our Revenue Base

We seek to build on existing customer relationships and our core manufacturing competencies to increase the breadth of our product offerings in existing markets and diversify into additional markets. We intend to reduce our susceptibility to economic cycles and increase our prospects for profitable growth by continuing to expand the markets and customers we serve and products we offer.

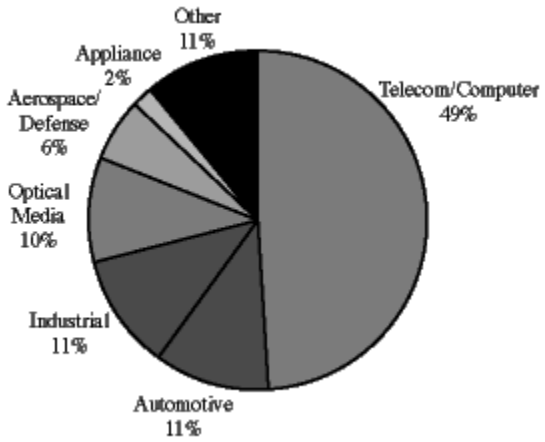
Today, the telecommunications and computer market comprises approximately 35% of worldwide sales versus nearly 50% in 2001. We are not content to "wait it out" until there is a robust recovery in the telecommunications and computer market. Although we remain well-positioned in existing markets, efforts are continuing to broaden the product base and diversify into other potential long-term growth markets.

Some examples of our new products and their applications and markets include:

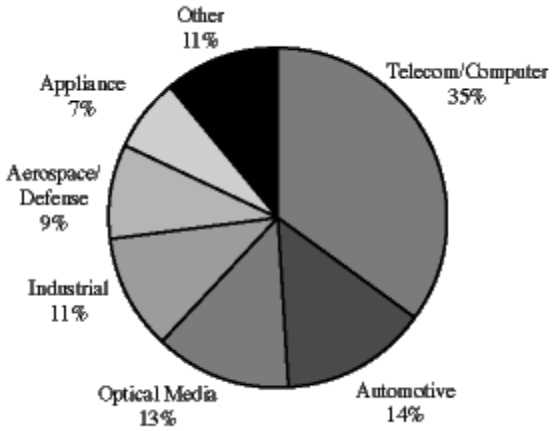
Product	Application/Market
Strip New Product Forms	Tubing, Bearings and Other • Oil and Gas • Instrumentation • Transportation
New Strip Alloys-Alloy 390	Electronics Market
MoldMAX® XL	Plastic Tooling
ToughMet®	Bearings and Wear Applications
Undersea Housings	Marine and Power Systems
New Silver Alloy	Optical Media

The following charts indicate our percentage of sales by market for years 2000 and 2003:

2000



2003



Increase Our Global Presence

We support our customers in their geographic markets throughout the world. As the trend towards high-performance materials and miniaturization continues, we believe that new market opportunities and new potential customers will emerge. We intend to continue to expand our sales, marketing and service capabilities into international markets in response to our existing customers' needs and new business opportunities. Our presence in the local markets of our customers allows us to quickly respond to their needs and requests, which we believe provides us with a key competitive advantage. For example, Alloy Products is focused on expanding its foothold in the high growth China and other Asian markets where consumer, personal computer and wireless applications are key drivers to future development. Alloy Products' focus in this region complements the solid foundations it has already established in Europe.

Increase Operational Efficiency

We intend to build upon the success of our existing cost reduction and manufacturing efficiency initiatives to improve margins and position

ourselves for profitable growth in both strong and weak economic environments. Despite the fall in revenue, gross margins have improved approximately 3.8% since 2001.

In 2003, for example, Alloy Products reduced manufacturing cycle times by 18%, improved manufacturing inventory turns by 48%, raised yields by 11% and shipped 23% more pounds per manufacturing employee. At TMI, margins improved and earnings increased despite lower sales. At WAM,

after considering metal prices, operating margin increased approximately 10%. In 2003, margins also improved in all of our other units.

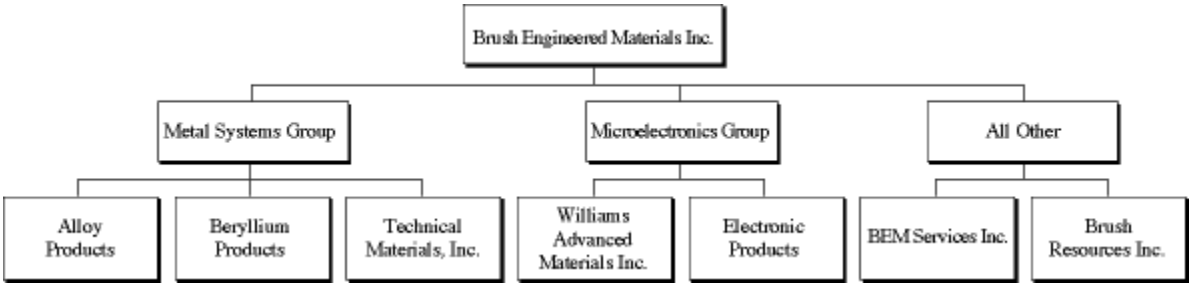
We have programs in place, including Six Sigma and lean manufacturing techniques, to address and improve costs, manufacturing processes and inventory utilization on an ongoing basis.

Pursue Selective Acquisitions in Our Selective Markets

We intend to selectively pursue acquisitions that can extend our geographic reach, expand and diversify our customer base or increase the breadth of our product and services offerings.

Segment Reporting

Our operations are organized under two reportable segments, the Metal Systems Group and the Microelectronics Group, as follows:



The Metal Systems Group includes Brush Wellman Inc. (Alloy Products and Beryllium Products) and TMI. The Microelectronics Group includes WAM and Electronic Products, which in turn, consists of Zentrix and Brush Ceramic Products. Portions of Brush International, Inc. are included in both segments. Included in "All Other" in our consolidated financial statements included elsewhere in this report are the operating results from BEM Services, Inc. and Brush Resources Inc., two of our wholly owned subsidiaries. BEM Services charges a management fee for services, such as administrative and financial oversight, to the other businesses within our company on a cost-plus basis. Brush Resources sells beryllium hydroxide produced through its Utah operations to outside customers and to businesses within the Metal Systems Group.

Metal Systems Group

The Metal Systems Group is comprised of Alloy Products, Beryllium Products and TMI. In 2003, 60% of our sales were from this segment (61% in 2002 and 63% in 2001). As of December 31, 2003 the Metal Systems Group had 1,125 employees.

Alloy Products

Alloy Products, the largest unit within our company and this segment, manufactures and sells copper and nickel-based alloy systems, the majority of which also contain beryllium. These products are metallurgically tailored to meet specific customer performance requirements. Copper-beryllium alloys exhibit high electrical and thermal conductivities, high strength and hardness, good formability and excellent resistance to corrosion, wear and fatigue. These alloys, sold in strip and bulk form, are ideal choices for demanding applications in the following markets:

- telecommunications and computer;
- automotive electronics;
- aerospace;
- oil and gas;
- undersea housings for electronics equipment;

- foundry;
- appliances; and
- plastic mold tooling.

Copper-beryllium strip is an ideal electronic connector material for telecommunications and computer and automotive electronic product applications. As electronic components require miniaturization, thinner connector design, lighter material and faster processing, copper-beryllium can provide the appropriate level of physical properties for applications such as electromagnetic imaging shieldings, burn-in test sockets, modular jacks, processor sockets and battery and subscriber identity module, or SIM, card contacts. Alloy Products recently introduced Alloy 390™ specifically designed for high-power applications, providing a unique combination of high strength and high thermal and electrical conductivity.

Alloy Products also manufactures non-beryllium-containing alloys including ToughMet®, a copper-nickel-tin alloy. Bearings made with ToughMet® last longer and require less frequent maintenance and lubrication while significantly reducing unplanned downtime. These alloys are corrosion and wear resistant and have excellent lubricity properties and are used in plastic mold tooling, heavy equipment, aerospace and oil and gas product applications.

Alloy products are sold domestically through our distribution centers and internationally through our independent distribution centers and independent sales representatives. NGK Insulators, Ltd. of Nagoya, Japan, with subsidiaries in the United States and Europe, competes with beryllium alloy strip products and beryllium products. Alloy Products also competes with alloy systems manufactured by Olin Corporation, Wieland Electric, Inc. and Stolberger Metallwerke GmbH, Nippon Mining, PMX and other generally less expensive materials, including phosphor bronze, stainless steel and other specialty copper and nickel alloys that are produced by a variety of companies around the world. In the area of beryllium alloy bulk products (bar, plate, tube and rod), in addition to NGK Insulators, we compete with several smaller regional producers such as Freedom Alloys in the United States, LaBronze Industriel in Europe and Young II in Asia.

The following charts highlight the markets and applications for Alloy Products:

Alloy Strip Products

Market	Application
Automotive	Power, communication, and signal distribution components such as connectors, switches and relays used in cars and light trucks.
Telecommunications	Strip and wire components used as connectors, contacts, shielding, switch on cell phones, pagers, wireless base stations, transmission equipment and other communication networks.
Computers	Strip and wire components used as connectors, shielding and contacts on desktop computers, PDAs, workstations, servers and other data storage devices made by major brands such as Sun, HP, Compaq and Intel.
Appliance	Strip and wire components for power delivery and controls.

Alloy Bulk Products

Market	Application
Automotive	Plate and bar products for tooling for plastic molded components resistance welding equipment, valve and suspension components.
Oil & Gas	Rod and tube product for instrumentation housings, control valves and drilling components.
Aerospace	Rod and tube products for bushings and bearings.
Foundry	Casting products for power delivery systems, automotive castings, and industrial equipment.
Marine	Rod, tube, and custom engineered products for signal transmission and amplification.
Consumer	Plate and rod products for containers.

Beryllium Products

Beryllium Products manufactures products that include beryllium, AlBeMet® and E-materials. Beryllium is a lightweight metal possessing unique mechanical and thermal properties. Its specific stiffness is much greater than other engineered structural materials such as aluminum, titanium and steel. Beryllium is extracted from both bertrandite and beryl ores.

In September 2003, beryllium was chosen by Northrop Grumman Space Technology as the material for the 18 segment, 6.5-meter primary mirror of NASA's James Webb Space Telescope. This state-of-the-art lightweight beryllium mirror will allow scientists to see ten to eleven billion light years away. We expect this application to add approximately $15 million in sales of optical grade beryllium over the next two to three years.

Beryllium-containing products are sold throughout the world through a direct sales organization and through our independent distribution centers. While Beryllium Products is the only domestic producer of metallic beryllium, it competes primarily with engineering designs utilizing other materials. Our Beryllium Products include:

- Beryllium metal — One of the lightest, low density metals, beryllium metal is a vacuum cast and hot/cold isostatically pressed powder-derived metal. Beryllium metal exhibits high stiffness, thermal conductivity and low thermal expansion. Beryllium metal is transparent and is a neutron reflector.

- AlBeMet® — These lightweight aluminum/beryllium composites are powder-derived metals and are either extruded, rolled sheet or isostatically pressed. AlBeMet® exhibits many of the same properties as beryllium metal but is easier to fabricate.

- E-Materials — These low expansion, lightweight electronic packaging materials are composites of beryllium metals and beryllium oxide.

- Beryllium oxide and chemicals — Beryllium oxide and chemicals are specialty beryllium-containing chemicals and ceramic-grade beryllium oxide powder.

The following chart highlights the markets and applications for our Beryllium Products:

Beryllium Products

Market	Application
Optics	Optical substrate and support structures for visual and infrared target acquisition systems in fighter aircraft, helicopters and tanks, surveillance systems and astronomical telescopes.
Aerospace/Defense	Structures and sensors for defense and commercial telecommunications satellites.
Electronics	Electronic packaging, including circuit boards, covers and packages, for defense avionics, radar and electronic countermeasures systems for helicopters and fighter aircraft.
Medical	Radiographic tube components for medical diagnostic equipment such as x-ray, mammography and CAT-scan equipment and industrial x-ray equipment.
Optical Scanning	Mirrors for laser scanners used in reprographic and other high-performance laser applications.
Motion Control	Structural components for high-precision semi-conductor processing and industrial robotic equipment.

TMI

TMI manufacturers engineered material systems that are combinations of precious and non-precious metals in continuous strip form and are used in complex electronic and electrical components in telecommunications systems, automotive electronics, semi-conductors and computers. TMI's products are sold directly and through its sales representatives. TMI has limited competition in the United States and several European manufacturers are competitors for the sale of inlaid strip. Strip with selective electroplating is a competitive alternative as are other design approaches. Additional competition for TMI exists in the plating area in North America and worldwide. The following chart indicates some of the applications of TMI products:

TMI Product Applications

• Capacitors	• Leadframes	• Relays	• Medical Devices
• Connectors	• Micro Motors	• Sensors	• Heat Transfer Applications
• Contact Probes	• Microwaves	• Solder Clips	• Fuel Cells
• Fuses	• Potentiometers	• Switches	• Computer Disk Drive Arms

Sales and Backlog

The backlog of unshipped orders for the Metal Systems Group as of December 31, 2003, 2002 and 2001 was $47.7 million, $35.1 million and $61.0 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all of our backlog of orders for this segment at December 31, 2003 will be filled during 2004.

Sales are made to approximately 1,700 customers. Government sales, principally subcontracts, accounted for about 7.9% of Metal Systems Group net sales in 2003 as compared to 9.3% in 2002 and 3.3% in 2001. Sales outside the United States, principally to Western Europe, Canada and the Pacific Rim, accounted for approximately 42% of the Metal Systems Group sales in 2003, 35% in 2002 and 38% in 2001. Other segment reporting and geographic information is set forth in Note M to the audited consolidated financial statements included elsewhere in this report.

Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations for the Metal Systems Group. Expenditures for research and development amounted to $2.8 million in 2003, $2.5 million in 2002 and $4.7 million in 2001. A staff of 21 scientists, engineers and technicians was employed in this effort as of year end 2003. Some research and development projects, expenditures for which are not material, were externally sponsored.

Microelectronics Group

The Microelectronics Group is comprised of WAM and Electronic Products, which consists of Zentrix and Brush Ceramic Products. In 2003, 39% of our sales were from this segment, compared to 37% in 2002 and 36% in 2001. As of December 31, 2003, the Microelectronics Group had 552 employees.

WAM

WAM manufactures and fabricates precious metal and specialty alloy metal products for the optical media, magnetic head, including magnetic resistive, or MR, and giant magnetic resistive, or GMR, materials, electron tube, performance film and the wireless, semi-conductor, photonic and hybrid segments of the microelectronics market. WAM's major product lines include vapor deposition plating materials, clad and precious metals preforms, high temperature braze materials, ultra fine wire, sealing lids for the semi-conductor/hybrid markets and restorative dental alloys. The following chart indicates the businesses, markets and end uses for WAM products:

Williams Advanced Materials

Business	Market	Example of End Use
Physical Vapor Deposition Products	• Wireless microelectronics • Optical media • Photonics • Glass decorative • Wear resistance materials	Wireless and photonic components; recordable CDs; DVDs; and faucets.
Packaging Material Products	• Wireless • Photonics • Hybrid microelectronic devices	Cellular phones, LEDs; fiber-optic networks; personal computers; military electronics; avionics; medical electronics; and appliances.
Specialty Alloy Products	• Electron tubing • Photonics • Aerospace • Microelectronic packaging	Cellular base stations; lasers; x-ray machines; and industrial microwaves.

WAM's products are sold directly from WAM's facilities in Buffalo, Brewster and Wheatfield, New York, Singapore, Taiwan and the Philippines, as well as through direct sales offices and independent sales representatives throughout the world. Principal competition includes companies such as Sumitomo Metals, Praxair, Inc., Honeywell International Inc. and a number of smaller regional and national suppliers.

Electronic Products

Electronic Products has two business groups: Zentrix and Brush Ceramic Products. Zentrix processes electronic packages at our production site in Newburyport, Massachusetts. Its products are used in wireless,

telecommunications, fiberoptic, automotive and defense applications. Zentrix competes with other electronic packaging suppliers, including Kyocera Corporation.

Circuits Processing Technology Inc., or CPT, a subsidiary of Zentrix, manufacturers electronic circuitry and circuit components at its production site in Oceanside, California. Its products are used in defense and wireless telecommunications applications. CPT competes with other circuitry suppliers, including Anaren Microwave and Aeroflex, Inc.

Brush Ceramic Products, located in Tucson, Arizona, produces beryllia ceramics used in wireless telecommunications, laser, automotive and defense product applications. Principal competitors include CBL Ceramics Ltd. and American Beryllia, Inc. Competitive materials include aluminum nitride and metal matrix composites.

The following chart indicates the businesses and applications for Electronic Products:

Electronic Products Group

Business	Application
Electronic Packaging Products (Zentrix)	• RF power packages for cellular base stations and wireless data networks, cellular handsets and military radar applications. • Automotive components for ignition systems in cars and trucks. • Power circuit assemblies for DC motor controls.
Circuit Processing Technology (Zentrix)	• High frequency military and aerospace circuitry for military radar and missile guidance. • High frequency wireless circuitry for satellite communications. • Package components for amplifiers in fiber optic networks.
Brush Ceramic Products	• RF power package components for cellular base stations and high reliability military applications. • Package components for amplifiers in fiber optic networks. • Components for medical laser applications. • Automotive components for ignition systems in cars and trucks.

Sales and Backlog

The backlog of unshipped orders for the Microelectronics Group as of December 31, 2003, 2002 and 2001 was $13.7 million, $19.8 million and $20.5 million, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. We expect that substantially all of our backlog of orders for this segment at December 31, 2003 will be filled during 2004.

Sales are made to approximately 1,700 customers. Government sales, principally subcontracts, accounted for less than 1% of Microelectronics Group net sales in 2003 as compared to less than 1% in 2002 and 2.8% in 2001. Sales outside the United States, principally to Western Europe, Canada and the Pacific Rim, accounted for approximately 15% of Microelectronics Group net sales in 2003, 18% in 2002 and 13% in 2001. Other segment reporting and geographic information is set forth in Note M to the audited consolidated financial statements included elsewhere in this report.

Research and Development

Active research and development programs seek new product compositions and designs as well as process innovations for the Microelectronics Group. Expenditures for Microelectronics Group research and development amounted to $1.4 million for 2003, $1.7 million for 2002 and $1.6 million in 2001. A staff of 6 scientists, engineers and technicians was employed in this effort as of year end 2003.

Raw Materials

Our principal raw materials are beryllium (extracted from both imported beryl ore and bertrandite mined from our Utah properties), copper, gold, silver, nickel, platinum, palladium and aluminum. See ore reserve data in "Management's Discussion and Analysis of Financial Condition and Results of Operations — Ore Reserves" included elsewhere in this report. We have agreements to purchase stated quantities of beryl ore, beryllium metal and beryllium-copper master alloy from the Defense Logistics Agency of the United States government. In addition, we have a long-term supply arrangement with Ulba/ Kazatomprom of the Republic of Kazakhstan and its marketing representative, Nukem, Inc. of New York, to purchase quantities of beryllium-copper master and beryllium vacuum cast billet. The availability of these raw materials, as well as other materials used by us, is adequate and generally not dependent on any one supplier.

Patents and Licenses

We own patents, patent applications and licenses relating to certain of our products and processes. While our rights under the patents and licenses are of some importance to our operations, our business is not materially dependent on any one patent or license or on all of our patents and licenses as a group.

Regulatory Matters

We are subject to a variety of laws which regulate the manufacture, processing, use, handling, storage, transport, treatment, emission, release and disposal of substances and wastes used or generated in manufacturing. For decades, we have operated our facilities under applicable standards of inplant and outplant concentrations of beryllium in the air. The inhalation of airborne beryllium particulate may present a health hazard to certain individuals. The Occupational Safety and Health Administration is currently reviewing its beryllium standards.

Item 3. Legal Proceedings

We and our subsidiaries are subject, from time to time, to a variety of civil and administrative proceedings arising out of our normal operations, including, without limitation, product liability claims, health, safety and environmental claims and employment-related actions. Among such proceedings are the cases described below.

As of December 31, 2003, our subsidiary, Brush Wellman Inc., was a defendant in 15 proceedings in various state and federal courts brought by plaintiffs alleging that they have contracted CBD or other lung conditions as a result of exposure to beryllium. Plaintiffs in beryllium cases seek recovery under theories of intentional tort and various other legal theories and seek compensatory and punitive damages, in many cases of an unspecified sum. Spouses of some plaintiffs claim loss of consortium.

The following table summarizes the associated activity with beryllium cases. Settlement payment and dismissal for a single case may not occur in the same period.

	December 31,		
	2003	2002	2001
Total cases pending	15	33	76
Total plaintiffs (including spouses)	33	70	193
Number of claims (plaintiffs) filed during period ended	11(22)	2(4)	19(37)
Number of claims (plaintiffs) settled during period ended	24(47)	34(107)	2(3)
Aggregate cost of settlements during period ended (dollars in thousands)	$2,045	$4,945	$570
Number of claims (plaintiffs) otherwise dismissed	5(12)	11(20)	12(31)
Number of claims (plaintiffs) voluntarily withdrawn	0(0)	0(0)	0(2)

The 2003 data includes five claims that were settled and dismissed late in the fourth quarter 2003, with the settlement payments of $0.9 million made or scheduled to be made in early 2004. Additional beryllium claims may arise. Management believes that we have substantial defenses in these cases and intends to contest the suits vigorously. Employee cases, in which plaintiffs have a high burden of proof, have historically involved relatively small losses to us. Third-party plaintiffs, typically employees of customers or contractors, face a lower burden of proof than do employees or former employees, but these cases are generally covered by varying levels of insurance. A reserve was recorded for beryllium litigation of $2.9 million at December 31, 2003 and $4.2 million at December 31, 2002. A receivable was recorded of $3.2 million at December 31, 2003 and $4.9 million at December 31, 2002 from our insurance carriers as recoveries for insured claims. An additional $0.9 million was reserved for insolvencies at the end of each period. These insolvencies relate to claims still outstanding as well as claims for which partial payments have been received.

Although it is not possible to predict the outcome of the litigation pending against us and our subsidiaries, we provide for costs related to these matters when a loss is probable and the amount is reasonably estimable. Litigation is subject to many uncertainties, and it is possible that some of these actions could be decided unfavorably in amounts exceeding our reserves. An unfavorable outcome or settlement of a pending beryllium case or additional adverse media coverage could encourage the commencement of additional similar litigation. We are unable to estimate our potential exposure to unasserted claims.

While we are unable to predict the outcome of the current or future beryllium proceedings, based upon currently known facts and assuming collectibility of insurance, we do not believe that resolution of these proceedings will have a material adverse effect on the financial condition or our cash flow. However, our

results of operations could be materially affected by unfavorable results in these cases. As of December 31, 2003, two purported class actions were pending. An additional purported class action was filed on January 29, 2004.

Standards for exposure to beryllium are under review by the United States Occupational Safety and Health Administration and by other standard-setting organizations. One result of these reviews might be more stringent worker safety standards. More stringent standards, as well as other factors such as the adoption of beryllium disease compensation programs and publicity related to these reviews, may also affect buying decisions by the users of beryllium-containing products. If the standards are made more stringent or our customers decide to reduce their use of beryllium-containing products, our operating results, liquidity and capital resources could be materially adversely affected. The extent of the adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use and other factors that cannot be estimated.

The 15 pending beryllium cases as of December 31, 2003 fall into three categories: one “employee case” involving one former employee; 12 cases involving third-party individual plaintiffs, with 12 individuals (and five spouses who have filed claims as part of their spouse’s case, and five children who have filed claims as part of their parent’s case); and two purported class actions, involving ten individuals, as discussed more fully below. While we are unable to predict the outcome of the current or future beryllium proceedings, based upon currently known facts and assuming collectibility of insurance, except for the three purported class actions discussed below, we do not believe that resolution of any one of these proceedings will have a material adverse effect on the financial condition or our cash flow.

The first purported class action is John Wilson, *et al.* v. Brush Wellman Inc., originally filed in Court of Common Pleas, Cuyahoga County, Ohio, case number 00-401890-CV, on February 14, 2000. The named plaintiffs are John Wilson, Daniel A. Martin, Joseph A. Szenderski, Larry Strang, Hubert Mays, Michael Fincher and Reginald Hohenberger. Mr. Szenderski was voluntarily dismissed by the court on September 27, 2000. Mr. Szenderski filed a separate claim, which is now settled and dismissed. The only defendant is Brush Wellman. The trial court denied class certification on February 12, 2002, and the Court of Appeals, Ohio 8th District, remanded on October 17, 2002. The case was appealed to Ohio Supreme Court, case number 03-0048, and oral arguments were heard on December 16, 2003. The plaintiffs purport to sue on behalf of a class of workers who belonged to unions in the Northwestern Ohio Building Construction Trades Council who worked in Brush Wellman’s Elmore plant from 1953-1999. They have brought claims for negligence, strict liability, statutory product liability, ultrahazardous activities and punitive damages and seek establishment of a fund for medical surveillance and screening. The plaintiffs are seeking that Brush Wellman pay for a reasonable medical surveillance and screening program for plaintiffs and class members, punitive damages, interest, costs and attorneys’ fees.

The second purported class action is Manuel Marin, *et al.* v. Brush Wellman Inc., filed in Superior Court of California, Los Angeles County, case number BC299055, on July 15, 2003. The named plaintiffs are Manuel Marin, Lisa Marin, Garfield Perry and Susan Perry. The defendants are Brush Wellman, Appanaitis Enterprises, Inc. and Doe Defendants 1 through 100. The Company filed a demurrer on November 17, 2003, and the case is currently stayed. The plaintiffs allege that they have been sensitized to beryllium while employed at The Boeing Company. The plaintiffs’ wives claim loss of consortium. The plaintiffs purport to represent two classes of approximately 250 members each, one consisting of workers who worked at Boeing or its predecessors and are beryllium sensitized and the other consisting of their spouses. They have brought claims for negligence, strict liability-design defect, strict liability-failure to warn, fraudulent concealment, breach of implied warranties and unfair business practices. The plaintiffs seek injunctive relief, medical monitoring, medical and health care provider reimbursement, attorneys’ fees and costs, revocation of business license, and compensatory and punitive damages. Mr. Marin and Mr. Perry represent current and past employees of Boeing in California; and Ms. Marin and Ms. Perry are their spouses.

The third purported class action is Neal Parker, *et al.* v. Brush Wellman Inc., filed in Superior Court of Fulton County, State of Georgia, case number 2004CV80827, on January 29, 2004. The case was removed to U.S. District Court for Northern District of Georgia, case number 04-CV-606, on March 4, 2004. The named plaintiffs are Neal Parker, Wilbert Carlton, Stephen King, Ray Burns, Deborah Watkins, Leonard Ponder,

Barbara King and Patricia Burns. The defendants are Brush Wellman; Schmiede Machine and Tool Corporation; Thyssenkrupp Materials NA Inc., d/b/a Copper and Brass Sales; Axsys Technologies, Inc.; Alcoa, Inc.; McCann Aerospace Machining Corporation; Cobb Tool, Inc and Lockheed Martin Corporation. Messrs. Parker, Carlton, King and Burns and Ms. Watkins are current employees of Lockheed. Mr. Ponder is a retired employee, and Ms. King and Ms. Burns are family members. The plaintiffs have brought claims for negligence, strict liability, fraudulent concealment, civil conspiracy and punitive damages. The plaintiffs seek a permanent injunction requiring the defendants to fund a court-supervised medical monitoring program, attorneys' fees and punitive damages.

From January 1, 2004 to March 8, 2004, one third-party case (involving one plaintiff) was filed. Two third-party cases (involving seven plaintiffs) were voluntarily dismissed by the plaintiffs. The settlement amounts in five third-party cases (involving 14 plaintiffs) that were settled and dismissed in 2003 have been paid to the plaintiffs. One employee case (involving one plaintiff) was settled and dismissed.

PART II

Item 5. Market for the Registrant's Common Stock and Related Stockholder Matters

Our Common Stock is traded on the New York Stock Exchange. As of March 5, 2004 there were 1,738 shareholders of record. Information as to stock price and dividends declared set forth on page 51 in Note P to the consolidated financial statements included elsewhere in this report. Our ability to pay dividends is restricted as provided in our subordinated term loan agreement dated December 4, 2003.

In connection with the debt refinancing completed on December 4, 2003, we issued warrants to purchase 115,000 shares of our common stock to our subordinated lenders as part of the consideration for a $35 million subordinated loan, in reliance upon applicable exemptions from registration under federal and state securities laws.

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

Overview

We are an integrated producer of engineered materials used in a variety of electrical, electronic, thermal and structural applications. After achieving record sales of $563.7 million in 2000, our sales declined rapidly over the next two years mainly as a result of the collapse of the global telecommunications and computer market. In light of the lower sales volumes, beginning in 2001, we implemented various financial and operational initiatives to sustain and improve cash flow and to position ourselves to return to profitability by broadening our market base, increasing margins, controlling costs, improving working capital utilization and reducing debt.

Sales rebounded in 2003, growing $28.2 million over 2002, due in part to our efforts to broaden our revenue base by developing new products and expanding our market penetration. Gross margin in turn grew over $25.0 million in 2003 while the operating loss was reduced by $13.5 million. This leverage resulted from a combination of an improved product mix, i.e., an increase in sales of higher margin products, manufacturing efficiencies, cost control and other factors. The manufacturing efficiencies helped to improve the margin contribution rate and the manpower and other cost saving initiatives initially implemented beginning in mid-2001 reduced the 2003 manufacturing overhead by $25.8 million from the 2001 level. Selling, general and administrative expenses and research and development expenses in 2003 were down an additional $8.6 million from the annual expense two years earlier. Cost control programs continued during 2003, and manpower levels by year-end 2003 were 27% lower than the peak level in 2001.

Working capital utilization improved through a $6.9 million reduction in inventories in 2003 after a $14.8 million reduction in 2002. We have established buffer inventories, which are work-in-process inventories that can be quickly deployed in production if needed, for our most constrained manufacturing operations. Properly designed buffer inventories help to maximize the production time of the equipment that is most critical to our operations and allow for a more predictive and efficient production cycle and inventory flow, thereby reducing our downstream inventories. This in turn has contributed to faster customer response times and an improvement in inventory turns. The accounts receivable balance increased in 2003 due to the higher sales, but the average collection period was shorter than at the end of the prior year.

The working capital, margin and cost improvements allowed us to reduce our total outstanding debt, key leases and other off-balance sheet obligations by $24.8 million in 2003 and $36.2 million in 2002. In addition, late in the fourth quarter 2003, we refinanced our debt on a long-term basis. The new structure provides increased borrowing capacity and extended maturity dates while lowering the projected financing costs and required cash payments in 2004.

Results of Operations

	2003	2002	2001
	(Dollars in millions, except per share data)		
Net sales	$401.0	$372.8	$472.6
Operating profit (loss)	(9.3)	(22.8)	(14.1)
Earnings (loss) per share	(0.80)	(2.15)	(0.62)

Sales of $401.0 million in 2003 grew 8% over sales of $372.8 million in 2002 after having declined 21% in 2002 from sales in 2001. Approximately half of the sales increase in 2003 was due to higher precious metal prices and favorable foreign currency translation effect. For the year, domestic sales grew 3%, and international sales grew 19% as we aggressively pursued marketing opportunities overseas. Sales in each quarter of 2003 were higher than the comparable quarter in 2002. The lower sales in 2002 as compared to 2001 were caused mainly by the significant decline in demand from the telecommunications and computer market that began in the second quarter 2001 and continued throughout that year. Demand for isolated applications from this key market, which accounted for 35% of sales in 2003, compared to 30% of sales in 2002 and 42% of sales in 2001, increased in the early portion of 2003 while the overall market demand started to show some improvement in the fourth quarter. Sales into the automotive market, after improving slightly in 2002 over 2001, declined slightly in 2003. Sales for defense applications remained strong during this time period, as did sales into the optical media and magnetic head markets. Demand from other key markets, including industrial components and plastic tooling, remained weak through the majority of 2003, although certain sectors started to improve at the end of the year. A portion of the sales growth in 2003 was attributable to market share gains and new product development. Sales from both reportable segments — the Metal Systems Group and the Microelectronics Group — improved in 2003 after declining in 2002.

The sales order backlog entering 2004 was $65.5 million compared to $57.7 million at the beginning of 2003 and $91.1 million at the beginning of 2002. Sales order entry rates improved in the fourth quarter 2003 and early in 2004. Lead times continued to be very short, and we have made improvements in our manufacturing processes and inventory positions to more quickly respond to our customers' needs.

The gross margin of $73.0 million was 18% of sales in 2003 compared to a gross margin of $47.9 million, or 13% of sales, in 2002 and $68.0 million, or 14% of sales, in 2001. Approximately 89% of the sales increase in 2003 flowed through to gross margin. In addition to the increased margin due to the higher sales, gross margin improved due to a favorable product mix, operational improvements on the manufacturing floor, foreign currency translation benefits and manufacturing overhead cost reductions. Margins from both segments improved in 2003 over 2002. The decline in gross margin in 2002 from 2001 was caused by the significant decline in sales volumes offset in part by a favorable product mix and a reduction in manufacturing overhead and inventory valuation adjustments.

Selling, general and administrative expenses, or SG&A, were $68.8 million, or 17% of sales, in 2003; $61.3 million, or 16% of sales in 2002; and $75.3 million, or 16% of sales, in 2001. Differences in the amounts charged or credited to expense from movements in the legal reserves and insurance recovery accounts caused $4.2 million of the increase in 2003 over 2002 and $6.3 million of the decrease in 2002 from 2001. We negotiated legal settlements on various cases involving chronic beryllium disease, or CBD, while other cases were dismissed in 2003 and 2002. In addition, we have also received several favorable court rulings on our litigation during the last two years. As a result of a court ruling in 2002 in a case that we were not a party to, we increased the recoverable portion on the outstanding insured legal claims that previously were not fully recoverable. The application of this ruling allowed for the potential recovery of the full amount of an insured claim from our carriers in the event of a loss (whether by settlement or verdict) whereas prior to this ruling the percent of the claim to be recovered was based on the overlap of the insurance coverage period and the alleged exposure period. Changes in the legal reserve and insurance recoverable charged to SG&A expense were limited to $0.2 million in 2003 while in 2002 changes in the

legal reserve and recoverable accounts generated a credit, i.e., reduction to expense, of $4.0 million. In 2001, the comparable expense was $2.3 million.

In addition to the impact of the legal reserve and recoverable accounts, SG&A expenses were higher in 2003 than 2002 due to an increase in incentive compensation expense, as a result of operational improvements implemented in the year, and an increase in costs under the company-owned life insurance program, while the weaker dollar caused a $1.2 million increase in the translated value of the international subsidiaries' expenses. SG&A expenses in 2003 also included $0.6 million of the $6.0 million one-time charge associated with refinancing the debt in 2003, as further explained under "— Financial Position — Refinancing." SG&A manpower and other activity levels remained relatively unchanged in 2003 as compared to the latter half of 2002. Cost saving initiatives and manpower reductions, net of severance costs, implemented in the second half of 2001 and in 2002 in response to the decrease in sales volume also served to reduce SG&A expenses in 2002 as compared to 2001. Offsetting a portion of these savings in 2002 was an increase in incentive compensation expense as several operating units achieved their objectives.

Research and development expenses, or R&D, were $4.2 million in 2003, $4.3 million in 2002 and $6.3 million in 2001. R&D expenses were approximately 1% of sales in each of the three years. Overall R&D spending was reduced during the latter half of 2001 as part of the cost reduction initiatives and spending has remained essentially unchanged since that time. Approximately two-thirds of the R&D spending supports the Metal Systems Group and one-third supports the Microelectronics Group.

Other-net expense was $9.3 million in 2003, $5.2 million in 2002 and $0.4 million in 2001 as the expense in both 2003 and 2002 included significant one-time items. The 2003 expense included $4.7 million of the $6.0 million refinancing charge as more fully described under "— Financial Position — Refinancing." In 2002, we recorded asset impairment charges of $4.4 million in accordance with SFAS No. 144 that are described in further detail in the segment disclosures and Note C to the audited consolidated financial statements included elsewhere in this report. In addition to the difference in these two charges, other-net expense was higher in 2003 due to a combination of other factors. Foreign exchange losses totaled $0.9 million in 2003 compared to gains of $1.5 million in 2002 with the difference attributable to the decline in the dollar's average value versus the euro, yen and pound sterling in 2003 compared to 2002. The unrealized valuation of the stock-based directors' compensation plan was a $2.0 million swing between years. The valuation, and, therefore, the liability to us, is based upon the number of shares outstanding and the current common share price; in 2003, we recorded an expense of $0.9 million due to the increase in the share price of our common share while in 2002 we recorded income of $1.1 million due to the decline in the share price that year. Metal financing fees were $0.4 million lower in 2003 than in 2002, due to a decline in financed inventory on hand, while the bad debt expense as well as changes in the allowance for doubtful accounts was $0.3 million higher in 2003 than in 2002.

In addition to the asset impairment charge (see "— Critical Accounting Policies" and the notes to our consolidated financial statements included elsewhere in this report), other-net expense was higher in 2002 than in 2001 as a result of a $0.8 million decline in exchange gains in 2002 compared to 2001, which was offset in part by lower metal financing fees and the elimination of goodwill amortization due to the adoption of SFAS No. 142 in 2002. Other-net expense also includes amortization of intangible assets, gain or loss on the disposal of fixed assets, cash discounts and other non-operating income and expense items.

The operating loss was $9.3 million in 2003, a $13.5 million improvement over the $22.8 million loss in 2002. The operating loss was $14.1 million in 2001.

Interest expense was $3.4 million in 2003 compared to $3.0 million in 2002 and $3.3 million in 2001. Balance sheet debt increased by over $50.0 million due to the purchase of previously leased assets as part of the fourth quarter 2003 refinancing and resulted in an increase in interest expense of approximately $0.4 million. Prior to the refinancing, average debt levels were lower in 2003 than in 2002, and the effective interest rate was slightly higher. The 2002 expense was lower than 2001 due to a lower average debt level and a lower effective interest rate. Offsetting a portion of these benefits in 2002 was a $0.5 million decline in interest capitalized in association with long-term capital projects from 2001.

The loss before income taxes was $12.7 million in 2003, a $13.2 million improvement over 2002. The improvement resulted from the margin contribution on the increase in sales, an increase in margin contribution rate and continued manufacturing overhead control offset in part by higher SG&A expenses and the impact of the one-time charges. The 2002 loss before income taxes of $25.9 million as compared to $17.4 million in 2001 resulted primarily from the lower margins due to the significant drop in sales volumes, partially offset by overhead cost reductions.

The 2003 income tax expense of $0.6 million included a favorable tax provision of $4.7 million and a deferred tax valuation allowance of $5.3 million while the 2002 expense of $9.7 million included a favorable provision of $10.2 million and a deferred tax valuation allowance of $19.9 million. The 2001 tax benefit was $7.1 million. A valuation allowance was not required for 2001.

Prior to the recognition of the valuation allowances, tax benefit rates of 37.3%, 39.4% and 40.9% were applied against the loss before income taxes to calculate the favorable tax provisions in 2003, 2002 and 2001, respectively. The effects of percentage depletion and foreign source income were the major causes of the differences between the effective and statutory rates for all three years. The relative impact of percentage depletion and the company-owned life insurance program were the main differences between the 2003 and 2002 effective rates.

The deferred tax valuation allowances were recorded in 2003 and 2002 in accordance with SFAS No. 109, “Accounting for Income Taxes.” This statement requires a company to evaluate its deferred tax assets on its balance sheet for impairment in the event of recent operating losses. This evaluation process is not based upon the specific expiration date of the individual deferrals but rather on the company’s ability to demonstrate taxable income that will result in utilization of those assets. As a result of a review in the fourth quarter 2002, we determined that the majority of our deferred tax assets were impaired and a valuation allowance was recorded with $19.9 million charged against expense and $7.3 million to other comprehensive income within shareholders’ equity. In 2003, the $5.3 million valuation allowance offset the deferred tax assets that were created by the current year domestic federal and various foreign tax benefits. The 2003 net tax expense of $0.6 million, therefore, represents the provision for state, local and certain other foreign taxes, which were not subject to a valuation allowance. An additional $1.9 million valuation allowance was charged against other comprehensive income in 2003 for deferred tax assets associated with the net charge to equity for the change in derivative fair values and the accrued pension liability. See Note I to the audited consolidated financial statements included elsewhere in this report.

As a result of the preceding, the net loss was $13.2 million, or $0.80 per share, in 2003 compared to $35.6 million, or $2.15 per share, in 2002 and $10.3 million, or $0.62 per share, in 2001.

We aggregate our businesses into two reportable segments — the Metal Systems Group and the Microelectronics Group. Our parent company and other corporate expenses, as well as the operating results from BEM Services, Inc. and Brush Resources Inc., two wholly owned subsidiaries, are not included in either segment and are shown in the “All Other” column in the segment results contained in Note M to the audited consolidated financial statements included elsewhere in this report. BEM Services charges a management fee for the services it provides, primarily corporate, administrative and financial oversight, to the other businesses within our company on a cost-plus basis. Brush Resources sells beryllium hydroxide, produced through its Utah operations, to outside customers and to businesses within the Metal Systems Group. The profitability within All Other declined in 2003 as compared to 2002 as a result of the $6.0 million one-time charge associated with the debt refinancing, the $4.2 million difference in movements in the legal reserve, the increase in the company-owned life insurance expense and reduced profitability of Brush Resources primarily due to lower production activity.

Metal Systems Group

	2003	2002	2001
	(Dollars in millions)		
Net sales	$239.4	$227.9	$295.7
Operating profit (loss)	(16.6)	(37.7)	(20.1)

The Metal Systems Group is the larger of our reportable segments, accounting for approximately 60% of total sales and almost 70% of total assets. The group consists of Alloy Products; TMI, one of our wholly owned subsidiaries; and Beryllium Products. These units manufacture a variety of engineered materials that provide superior performance in demanding applications and compete against beryllium and non-beryllium-containing alloys. The Elmore, Ohio facility manufactures finished goods for Alloy Products and Beryllium Products as well as materials for further processing and sale by other operations within Alloy Products, Beryllium Products and TMI. Customers typically use our materials from this segment as their raw material input and are also usually one or more tiers removed from the end-use demand generator in a given market. After declining significantly in each of the last two years, primarily as a result of softness in the telecommunications and computer market, sales grew 5% in 2003 over 2002. Sales to external customers by business unit within the Metal Systems Group during the 2001 to 2003 time frame were as follows:

	2003	2002	2001
	(Dollars in millions)		
Alloy Products	$162.3	$151.9	$217.5
Technical Materials, Inc.	41.9	44.4	50.5
Beryllium Products	35.2	31.6	27.7
Total Segment Sales	$239.4	$227.9	$295.7

Alloy Products

Alloy Products, the largest unit within our company, manufactures and sells copper and nickel-based alloy systems, the majority of which also contain beryllium, and consists of two major product families — strip and bulk products. Strip products, which include thin gauge precision strip and thin diameter rod and wire, provide a combination of high conductivity, high reliability and formability for use as connectors, contacts, switches, relays and shielding. Major markets for strip products include telecommunications and computer, automotive electronics and appliances. Bulk products include plate, rod, bar, tube and other customized forms that, depending upon the application, may provide superior strength, corrosion or wear resistance or thermal conductivity. Applications for bulk products include plastic mold tooling, bearings, bushings, welding rods and telecommunications housing equipment. Alloy Products are manufactured at our facilities in Ohio and Pennsylvania and are distributed worldwide through a network of our own service centers and outside distributors and agents.

Alloy Products' sales of $162.3 million improved 7% over sales in 2002 while sales of $151.9 million in 2002 were 30% lower than sales in 2001. The improvement in sales in 2003 was due to strip products as sales of bulk products declined during 2003. The strip sales growth was caused by an increase in demand for the higher beryllium-containing and, therefore, higher priced alloys. Underlying volumes of these products improved 22% in 2003 over 2002. Sales of thin diameter rod and wire products also showed double-digit growth in 2003. Bulk sales volumes were 9% lower in 2003 than in 2002.

The Alloy Products' sales growth in 2003 was in the international markets as domestic sales declined slightly. A portion of this international growth is due to domestic customers shifting manufacturing operations overseas, particularly to Asia. Alloy Products recently established additional sales and marketing offices in China to augment its existing service centers in Japan and Singapore in order to maintain and grow sales applications in the region. The sales growth also resulted from an increase in market share and the development of various new products. Demand from the telecommunications and computer market was unchanged for the first three quarters of 2003 and then showed some improvements in the fourth quarter. Demand for strip products from the automotive market remained sluggish in 2003. The lower bulk products sales was caused in part by soft demand from the plastic tooling market for the majority of the year (although demand started to improve in the fourth quarter), while demand from the industrial components market declined during 2003. The increased demand from the telecommunications and computer and plastic tooling markets continued into early 2004. Orders for new products, including the non-beryllium-containing ToughMet® alloy used in bearing applications in heavy equipment, also showed improvement in late 2003 and early 2004.

Sales of strip and bulk products both declined significantly in 2002 as compared to 2001. Strip volumes were down 17% and bulk volumes were down 33%. The lower sales were due in large part to the precipitous decline in demand from the telecommunications and computer market that began in the second quarter 2001. Automotive sales of strip products were essentially unchanged in 2002 as compared to 2001. Bulk sales into the undersea telecommunications market, which was the largest market segment for bulk products as recently as 2000, began to decline in the second half of 2001 and were minimal in 2002 due to the severe reduction in the number of new undersea fiber optic line installation projects throughout the world. Bulk product sales for plastic tooling applications also declined in 2002 due in part to customers adjusting their inventory positions.

Technical Materials, Inc.

TMI manufactures engineered materials systems, including clad inlay and overlay metals, precious and base metal electroplated systems, electron beam welded systems, contour profiled systems and solder-coated metal systems. These specialty strip metal products provide a variety of thermal, electrical or mechanical properties from a surface area or particular section of the material. Major markets for TMI products include telecommunications and computer and automotive electronics while major applications include connectors, contacts and semi-conductors.

TMI sales were $41.9 million in 2003, $44.4 million in 2002 and $50.5 million in 2001. The lower sales in each of the last two fiscal years were due to the continued soft demand from the telecommunications and computer market. Automotive sales, which had been relatively unchanged in the prior two years, also softened during the third and fourth quarters of 2003. However, overall sales order entry rates improved in the fourth quarter 2003 over the first nine months of the year, and this trend continued into early 2004.

Production capacity within the markets served by TMI continued to be transferred from the United States to Asia, and TMI has aggressively managed its marketing efforts and manufacturing and overhead cost structure in order to profitably position itself to maintain and grow its base business while expanding into new applications and markets. As a result, TMI’s profits increased in 2003 over 2002 despite the 6% decline in sales.

Beryllium Products

Beryllium Products manufactures pure beryllium and beryllium aluminum alloys in rod, tube, sheet and a variety of customized forms at the Elmore, Ohio and Fremont, California facilities. These materials are used in applications that require high stiffness and/or low density, and they tend to be premium priced due to their unique combination of properties. Defense and government-related applications remain the largest market for Beryllium Products, accounting for approximately two-thirds of sales, while other markets served include automotive, electronics, medical and optical scanning.

Revenues from Beryllium Products were $35.2 million in 2003, $31.6 million in 2002 and $27.7 million in 2001. Revenues from Beryllium Products have grown for four consecutive years, including annual growth rates of 11% and 14% in 2003 and 2002, respectively. Sales for defense and government-related applications remained strong throughout this period. Several system upgrades for F-16 fighter jets and the new F-22 fighter are two of the largest platforms for Beryllium Products. Sales to the electronics market for acoustic components increased in 2003 over 2002 and represent a commercial growth opportunity for Beryllium Products. Acoustic component sales had declined in 2002 due to customers’ excess inventory positions. Performance automotive sales contributed to the sales growth in 2003 and 2002 as well; however, management is uncertain as to the growth prospects for this market in the coming year. In the third quarter 2003, we secured a material supply contract for NASA’s James Webb Space Telescope program, which is anticipated to generate an additional $15.0 million in revenue, the majority of which should be invoiced in the 2004 to 2005 time frame.

Metal Systems Gross Margin and Expenses

The gross margin on Metal System sales was $39.5 million, or 16% of segment sales, in 2003 compared to $18.0 million, or 8% of segment sales, in 2002. The increased sales volume improved margins by $2.8 million in 2003 as compared to 2002. A favorable product mix, operational improvements and a favorable currency effect increased margins by $12.1 million. The favorable mix resulted primarily from strip products, although TMI and Beryllium Products had mix shifts due to higher margin generating products as well. Operational improvements were made at the Elmore, Ohio facility, including yield and machine utilization rates, and at the TMI facility in Lincoln, Rhode Island, including yields and cost controls. Manufacturing overhead costs and inventory valuation adjustments were $6.6 million lower in 2003 than in 2002, with the majority of savings coming from manpower, supplies and services at the Elmore facility.

The 2002 gross margin of $18.0 million was $21.1 million lower than the gross margin in 2001. The margin contribution decline due to the lower sales volume in 2002 totaled $30.7 million. An unfavorable product mix, primarily from Alloy Products, combined with a slightly favorable currency and copper impact, reduced margins by an additional $6.3 million. Mitigating the impact of volume and mix factors on margins was a reduction in manufacturing overhead expense of $14.9 million. Overhead costs were reduced at all of the Metal Systems Group's manufacturing facilities in response to the lower sales volume. This decrease in overhead in 2002 was net of a $4.7 million increase in rent expense from the off-balance sheet operating lease that was subsequently refinanced in December 2003, as the renewal terms under the lease had increased rent payments. Inventory valuation adjustments, primarily provisions for obsolescence, were also $1.0 million lower in 2002 than 2001.

SG&A, R&D and other-net expenses were $0.5 million higher in 2003 than in 2002 as a result of the foreign currency exchange gain/loss difference and an increase to incentive compensation accruals. SG&A and R&D manpower levels were relatively unchanged for the year. The $0.5 million increase was net of the impact of a one-time asset impairment charge in 2002. We determined that the projected cash flow from various assets used in the production of beryllium was less than the carrying value. The assets were written down to their net realizable values, and a $3.1 million charge was recorded against other-net expense in the fourth quarter 2002. The equipment has been shut down due to the use of alternative input materials and manufacturing processes. Expenses in 2002 were $3.5 million lower than 2001 as manpower and other cost savings initiatives reduced expenses by $6.6 million in 2002 compared to the prior year, the benefit of which was offset in part by the impairment charge.

The Metal Systems Group recorded an operating loss of $16.6 million in 2003, a $21.1 million improvement over the $37.7 million loss in 2002. The improvement was caused by the additional margin generated by the higher sales, favorable mix, operational efficiencies and manufacturing overhead cost reductions. In 2001, the Metal Systems Group lost $20.1 million.

Microelectronics Group

	2003	2002	2001
	(Dollars in millions)		
Net sales	$157.3	$139.2	$169.6
Operating profit (loss)	12.6	3.8	4.6

Microelectronics Group includes WAM and Electronic Products. These businesses manufacture a variety of high quality precision parts that are sold to assemblers and other fabricators of electronic components and equipment. Sales grew 13% in 2003 over 2002 after declining 18% in 2002 from 2001. Operating profit

improved by $8.8 million in 2003. Sales to external customers by business unit within the Microelectronics Group during the 2001 to 2003 time frame were as follows:

	2003	2002	2001
	(Dollars in millions)		
Williams Advanced Materials Inc.	$127.8	$109.1	$135.3
Electronic Products	29.5	30.1	34.3
Total Segment Sales	$157.3	$139.2	$169.6

Williams Advanced Materials Inc.

WAM manufactures precious, non-precious and specialty metal products at its facilities in New York, California and Asia. Specific products include vapor deposition targets, frame lid assemblies, clad and precious metal preforms, high temperature braze materials and ultra fine wire. Major markets for WAM's products include optical media, magnetic head, electron tube, performance film and the wireless, semi-conductor, photonic and hybrid segments of the microelectronics market.

Sales from WAM were $127.8 million in 2003, $109.1 million in 2002 and $135.3 million in 2001. WAM adjusts its selling prices daily to reflect the current cost of the precious and non-precious metals sold. The cost of the metal is a pass-through to the customer, and WAM generates its margin on its fabrication efforts irrespective of the type or cost of the metal used in a given application. Therefore, the cost and mix of metals sold will affect sales but not necessarily the margins generated by those sales. Metal prices increased on average in 2003 over 2002, and the underlying volumes grew 7% compared to a 17% growth in sales. In 2002, a mix shift to lower priced metals as compared to 2001 caused the majority of the decrease in sales, as volumes were only 2% lower than the prior year.

Sales of vapor deposition targets grew in 2003 from the 2002 level driven by the continued strong end-use demand from the optical media market for digital versatile disks. Demand for targets from the photonics and other segments of the microelectronics market, which was soft and caused a slight overall decline in target sales in 2002, started to improve in the latter part of 2003. Sales of various products into the wireless segment demonstrated improvement in 2003 over 2002. Demand for data storage applications for giant magnetic resistive thin film applications remained strong throughout the 2001 to 2003 time period. Frame lid assembly sales grew in 2003 and in 2002 as a result of acquiring various assets of competitors who exited the market in the second quarter 2001 and the second quarter 2003.

Due to the precious metal content of many of its products, WAM's customers continuously evaluate alternative lower cost materials and systems, and WAM faces stiff competition from other material providers. WAM strives to develop new alloys and products that satisfy its customers' quality, cost and service objectives. A key competitive advantage for WAM is its ability to reclaim precious metals, from its own or customers' scrap, through its in-house refinery. WAM also emphasizes new product and application development in order to keep pace with technological advancements.

Electronic Products

Electronic Products manufactures beryllia ceramics, electronic packages and circuitry for sale into the telecommunications and computer, medical, electronics, automotive and defense markets. These products provide specific thermal and/or electrical conductivity characteristics and are used as components in a variety of applications, including wireless telecommunications equipment, fiber optics, lasers for medical and other electronic equipment, automotive ignition module systems, satellites and radar systems. Electronic Products are manufactured by Zentrix Technologies Inc. and Brush Ceramic Products, two wholly owned subsidiaries. Sales from Electronic Products were $29.5 million in 2003 compared to $30.1 million in 2002 and $34.3 million in 2001.

Sales of beryllia ceramics were essentially unchanged in 2003 compared to 2002 after declining in 2002. This is a mature product line with established applications but limited growth opportunities. A temporary

disruption in the sales order pattern from the largest ceramics customer during a plant relocation offset mild improvements during 2003. Sales order entry levels for ceramics strengthened in the fourth quarter 2003. Softer demand from the telecommunications and computer market caused the lower sales of ceramics in 2002 as compared to 2001. Sales of electronic packages also declined in each of the last two years due to the slowdown in build rates for telecommunications infrastructure equipment. Sales into the automotive market declined in 2003 after growing in 2002 over 2001. Sales of circuitry, which are manufactured by Circuits Processing Technology, Inc., a wholly owned subsidiary of Zentrix, increased in 2003 due to strengthening defense orders after declining in 2002 due to softer demand for commercial applications.

Microelectronics Group Gross Margin and Expenses

The gross margin on Microelectronics Group sales was $32.8 million, or 21% of segment sales, in 2003, compared to $26.4 million, or 19% of segment sales, in 2002 and $25.6 million, or 15% of sales, in 2001. Margins improved by $3.3 million in 2003 as a result of the increased sales. The product mix effect, as well as operational efficiencies, primarily in Electronic Products, generated an additional $1.6 million in gross margin while manufacturing overhead costs and inventory adjustments were $1.4 million lower in 2003 than in 2002. The $0.8 million margin improvement in 2002 over 2001 resulted from an $8.1 million favorable mix effect, primarily from WAM, combining with a $3.1 million reduction in manufacturing overhead and inventory valuation adjustments to more than offset the reduction in margin due to the lower sales volume.

SG&A, R&D and other-net expenses were $2.4 million lower in 2003 than in 2002 in part due to one-time charges of $1.9 million recorded in 2002. Management determined that the projected cash flow from various assets used by Electronic Products was less than the carrying value. A charge of $1.3 million was recorded in other-net expense to write down the assets to their fair value as determined by an outside appraisal. See Note C to the audited consolidated financial statements included elsewhere in this report. Expenses in 2002 also included severance costs of $0.6 million as we restructured the management of Electronic Products, eliminating various positions and closing two small foreign offices. In addition, expenses were lower in 2003 due to the full-year benefit of the manpower reductions made in 2002. The precious metal financing fee was lower in 2003 than in 2002 as well. Offsetting a portion of these benefits were increased costs to support the WAM sales growth and higher incentive accruals. Expenses were $1.8 million higher in 2002 than in 2001. In addition to the $1.9 million one-time items, WAM's SG&A and R&D expenses grew in 2002 over 2001 while the precious metal financing fee declined by $0.7 million.

The Microelectronics Group operating profit was $12.6 million, or 8% of segment sales, in 2003 compared to $3.8 million, or 3% of segment sales, in 2002. Improved margins and lower expenses combined to generate the profit improvement. Operating profit for the Microelectronics Group was $4.6 million, or 3% of segment sales, in 2001.

International Sales and Operations

	2003	2002	2001
	(Dollars in millions)		
From international operations	$ 89.5	$ 71.7	$ 86.8
Exports from U.S. operations	34.9	32.6	47.5
Total international sales	$124.4	$104.3	$134.3
Percent of total net sales	31%	28%	28%

The international sales presented in the preceding table are included in the Metal Systems Group and Microelectronics Group sales figures previously discussed. The majority of international sales are to the Pacific Rim, Europe and Canada. Sales to the Pacific Rim and Europe showed strong growth in 2003 resulting from a combination of additional market penetration, the relocation of United States production to overseas locations, increased market share and a favorable currency exchange effect. Sales into each major region were lower in 2002 than in 2001 with European sales accounting for over 60% of the total falloff.

International operations include service centers in Germany, England, Japan and Singapore that primarily focus on the distribution of Alloy Products while providing additional local support to various other businesses within our company. WAM has finishing operations in Singapore and the Philippines and a small joint venture that was established in Taiwan in 2003. We also have branch sales offices in the Republic of China and in Taiwan as well as an established network of independent distributors and agents.

As is the case domestically, telecommunications and computer and automotive electronics are the largest international markets for our products. Defense applications are not as prevalent overseas while the appliance market for alloy products is a more significant market, primarily in Europe, than it is domestically. Our market share is smaller in the overseas markets than it is domestically and given the macro-economic growth potential for the international economies, the international markets may present greater long-term growth opportunities for us.

Sales from the international operations are typically denominated in the local currency, particularly in Europe and Japan. Exports from the United States and sales from the Singapore operations are predominately denominated in United States dollars. Movements in the foreign currency exchange rates will affect the reported translated value of foreign currency-denominated sales while local competition limits our ability to adjust selling prices upwards to compensate for short-term unfavorable exchange rate movements. The dollar was weaker against the euro, yen and sterling over the course of 2003 compared to 2002, resulting in a favorable translation impact on sales of $6.4 million. The dollar was slightly weaker on average in 2002 than in 2001, resulting in a favorable translation impact on sales of $0.4 million in 2002. We have a hedge program with the objective of minimizing the impact of fluctuating currency values on our reported results.

Legal Proceedings

As of December 31, 2003, our subsidiary, Brush Wellman Inc., was a defendant in 15 proceedings in various state and federal courts brought by plaintiffs alleging that they have contracted CBD or other lung conditions as a result of exposure to beryllium. Plaintiffs in beryllium cases seek recovery under theories of intentional tort and various other legal theories and seek compensatory and punitive damages, in many cases of an unspecified sum. Spouses of some plaintiffs claim loss of consortium.

	December 31,		
	2003	2002	2001
Total cases pending	15	33	76
Total plaintiffs (including spouses)	33	70	193
Number of claims (plaintiffs) filed during period ended	11(22)	2(4)	19(37)
Number of claims (plaintiffs) settled during period ended	24(47)	34(107)	2(3)
Aggregate cost of settlements during period ended (dollars in thousands)	$2,045	$4,945	$570
Number of claims (plaintiffs) otherwise dismissed	5(12)	11(20)	12(31)
Number of claims (plaintiffs) voluntarily withdrawn	0(0)	0(0)	0(2)

The 2003 data includes five claims that were settled and dismissed late in the fourth quarter 2003, with the settlement payments of $0.9 million made or scheduled to be made in early 2004. Additional beryllium claims may arise. Management believes that we have substantial defenses in these cases and intends to contest the suits vigorously. Employee cases, in which plaintiffs have a high burden of proof, have historically involved relatively small losses to us. Third-party plaintiffs, typically employees of customers or contractors, face a lower burden of proof than do employees or former employees, but these cases are generally covered by varying levels of insurance. A reserve was recorded for beryllium litigation of $2.9 million at December 31, 2003 and $4.2 million at December 31, 2002. A receivable was recorded of $3.2 million at December 31, 2003 and $4.9 million at December 31, 2002 from our insurance carriers as recoveries for insured claims. An additional $0.9 million was reserved for insolvencies at the end of each period. These insolvencies relate to claims still outstanding as well as claims for which partial payments have been received.

Although it is not possible to predict the outcome of the litigation pending against us and our subsidiaries, we provide for costs related to these matters when a loss is probable and the amount is reasonably estimable. Litigation is subject to many uncertainties, and it is possible that some of these actions could be decided unfavorably in amounts exceeding our reserves. An unfavorable outcome or settlement of a pending beryllium case or additional adverse media coverage could encourage the commencement of additional similar litigation. We are unable to estimate our potential exposure to unasserted claims.

While we are unable to predict the outcome of the current or future beryllium proceedings, based upon currently known facts and assuming collectibility of insurance, we do not believe that resolution of these proceedings will have a material adverse effect on the financial condition or our cash flow. However, our

results of operations could be materially affected by unfavorable results in these cases. As of December 31, 2003, two purported class actions were pending. An additional purported class action was filed on January 29, 2004.

Standards for exposure to beryllium are under review by the United States Occupational Safety and Health Administration and by other standard-setting organizations. One result of these reviews might be more stringent worker safety standards. More stringent standards, as well as other factors such as the adoption of beryllium disease compensation programs and publicity related to these reviews, may also affect buying decisions by the users of beryllium-containing products. If the standards are made more stringent or our customers decide to reduce their use of beryllium-containing products, our operating results, liquidity and capital resources could be materially adversely affected. The extent of the adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use and other factors that cannot be estimated.

The 15 pending beryllium cases as of December 31, 2003 fall into three categories: one “employee case” involving one former employee; 12 cases involving third-party individual plaintiffs, with 12 individuals (and five spouses who have filed claims as part of their spouse’s case, and five children who have filed claims as part of their parent’s case); and two purported class actions, involving ten individuals, as discussed more fully below. While we are unable to predict the outcome of the current or future beryllium proceedings, based upon currently known facts and assuming collectibility of insurance, except for the three purported class actions discussed below, we do not believe that resolution of any one of these proceedings will have a material adverse effect on the financial condition or our cash flow.

The first purported class action is John Wilson, *et al.* v. Brush Wellman Inc., originally filed in Court of Common Pleas, Cuyahoga County, Ohio, case number 00-401890-CV, on February 14, 2000. The named plaintiffs are John Wilson, Daniel A. Martin, Joseph A. Szenderski, Larry Strang, Hubert Mays, Michael Fincher and Reginald Hohenberger. Mr. Szenderski was voluntarily dismissed by the court on September 27, 2000. Mr. Szenderski filed a separate claim, which is now settled and dismissed. The only defendant is Brush Wellman. The trial court denied class certification on February 12, 2002, and the Court of Appeals, Ohio 8th District, remanded on October 17, 2002. The case was appealed to Ohio Supreme Court, case number 03-0048, and oral arguments were heard on December 16, 2003. The plaintiffs purport to sue on behalf of a class of workers who belonged to unions in the Northwestern Ohio Building Construction Trades Council who worked in Brush Wellman’s Elmore plant from 1953-1999. They have brought claims for negligence, strict liability, statutory product liability, ultrahazardous activities and punitive damages and seek establishment of a fund for medical surveillance and screening. The plaintiffs are seeking that Brush Wellman pay for a reasonable medical surveillance and screening program for plaintiffs and class members, punitive damages, interest, costs and attorneys’ fees.

The second purported class action is Manuel Marin, *et al.* v. Brush Wellman Inc., filed in Superior Court of California, Los Angeles County, case number BC299055, on July 15, 2003. The named plaintiffs are Manuel Marin, Lisa Marin, Garfield Perry and Susan Perry. The defendants are Brush Wellman, Appanaitis Enterprises, Inc. and Doe Defendants 1 through 100. The Company filed a demurrer on November 17, 2003, and the case is currently stayed. The plaintiffs allege that they have been sensitized to beryllium while employed at The Boeing Company. The plaintiffs’ wives claim loss of consortium. The plaintiffs purport to represent two classes of approximately 250 members each, one consisting of workers who worked at Boeing or its predecessors and are beryllium sensitized and the other consisting of their spouses. They have brought claims for negligence, strict liability-design defect, strict liability-failure to warn, fraudulent concealment, breach of implied warranties and unfair business practices. The plaintiffs seek injunctive relief, medical monitoring, medical and health care provider reimbursement, attorneys’ fees and costs, revocation of business license, and compensatory and punitive damages. Mr. Marin and Mr. Perry represent current and past employees of Boeing in California; and Ms. Marin and Ms. Perry are their spouses.

The third purported class action is Neal Parker, *et al.* v. Brush Wellman Inc., filed in Superior Court of Fulton County, State of Georgia, case number 2004CV80827, on January 29, 2004. The case was removed to U.S. District Court for Northern District of Georgia, case number 04-CV-606, on March 4, 2004. The named plaintiffs are Neal Parker, Wilbert Carlton, Stephen King, Ray Burns, Deborah Watkins, Leonard Ponder,

Barbara King and Patricia Burns. The defendants are Brush Wellman; Schmiede Machine and Tool Corporation; Thyssenkrupp Materials NA Inc., d/b/a Copper and Brass Sales; Axsys Technologies, Inc.; Alcoa, Inc.; McCann Aerospace Machining Corporation; Cobb Tool, Inc and Lockheed Martin Corporation. Messrs. Parker, Carlton, King and Burns and Ms. Watkins are current employees of Lockheed. Mr. Ponder is a retired employee, and Ms. King and Ms. Burns are family members. The plaintiffs have brought claims for negligence, strict liability, fraudulent concealment, civil conspiracy and punitive damages. The plaintiffs seek a permanent injunction requiring the defendants to fund a court-supervised medical monitoring program, attorneys' fees and punitive damages.

From January 1, 2004 to March 8, 2004, one third-party case (involving one plaintiff) was filed. Two third-party cases (involving seven plaintiffs) were voluntarily dismissed by the plaintiffs. The settlement amounts in five third-party cases (involving 14 plaintiffs) that were settled and dismissed in 2003 have been paid to the plaintiffs. One employee case (involving one plaintiff) was settled and dismissed.

Financial Position

Working Capital

Cash flow from operations totaled $26.3 million in 2003 as depreciation, other non-cash items and changes in working capital items more than offset the net loss of $13.2 million. Cash flow from operations in 2003 was a $10.6 million improvement over the $15.7 million generated in 2002. The cash balance was $5.1 million at December 31, 2003, an increase of $0.7 million for the year, as the balance of the cash generated from operations was used to reduce debt and fund capital expenditures.

The accounts receivable balance was $55.1 million at year-end 2003, an increase of $7.6 million from year-end 2002. The increase is largely due to the higher sales in the fourth quarter 2003 relative to the fourth quarter 2002 as the days sales outstanding, or DSO, a measure of how quickly receivables are collected, improved one day to 47 days. The DSO improved despite an increase in international sales, which typically take longer to collect. Accounts receivable declined in 2002 as a result of lower sales and a five-day improvement in the DSO.

Inventories declined $6.9 million in 2003 to $87.4 million after declining $14.8 million in 2002 as we continued to improve our manufacturing efficiencies and inventory utilization in order to improve customer response time and lower our working capital investment. The reduction in inventories in 2002 was net of a $6.0 million increase due to the termination of an off-balance sheet copper financing arrangement in the fourth quarter 2002. Total Metal Systems Group inventory was down 12% on a first-in, first-out, or FIFO, valuation basis in 2003. Each unit within the Metal Systems Group lowered its inventories in 2003, with Alloy Products responsible for the largest decline. Alloy inventory pounds declined 15% during the year and were down 50% from their peak levels in 2001. FIFO inventories within the Microelectronics Group increased 13% as WAM's inventories increased in order to support the higher sales volumes and as a result of higher precious metal prices. Brush Resources also increased its inventory, as ore was mined in excess of current production requirements in order to extract the ore from the existing pits within the allowable safety time frame. Overall inventory turns as of the fourth quarter 2003 improved over the fourth quarter 2002. The majority of the inventory reduction in 2002 was in the Metal Systems Group as Microelectronics Group inventories declined only slightly.

Prepaid expenses declined during 2003 mainly due to the collection of a $3.8 million federal income tax refund. The accounts payable balance was $0.9 million higher at year-end 2003 than at year-end 2002 due to higher activity levels. Other liabilities and accruals increased $7.0 million as a result of higher incentive compensation accruals, a change in the fair value of derivative financial instruments, higher interest accruals and other miscellaneous items. Other long-term liabilities of $14.7 million at December 31, 2003 were $2.8 million lower than at December 31, 2002 due to reductions in the legal reserves and changes in the long-term portion of the fair value of derivatives. We paid $1.2 million in 2003 for legal settlements, primarily for CBD cases, and received $1.6 million from our insurance carriers as partial reimbursement for the insured portions of claims paid in the current and prior years. In 2002, we paid $4.9 million in settlements and recovered $2.5 million from our insurance carriers.

Depreciation and Amortization

Depreciation, amortization and depletion was $19.5 million in 2003 and $20.4 million in 2002. The lower expense in 2003 resulted from the reduced level of capital spending. Amortization of deferred mine development was $1.2 million in 2003 and $0.3 million in 2002. Mine development costs are amortized based upon the units-of-production method as ore is extracted from the pits.

Capital Expenditures

Capital expenditures for property, plant and equipment and mine development totaled $6.3 million in 2003 compared to $5.4 million in 2002. Spending by the Metal Systems Group totaled $2.8 million in 2003 and $1.9 million in 2002, while the Microelectronics Group spending totaled $2.9 million in 2003 and $2.4 million in 2002. The majority of the spending was on small infrastructure and other individual projects as in general we had sufficient production capacity to meet the level of demand in 2003. The Microelectronics Group spending included the acquisition of various assets used to manufacture frame lid assemblies from a competitor who exited the market. In addition to the $6.3 million of spending, as part of the December 2003 refinancing, we purchased $51.8 million of assets previously held under an operating lease that have been in use at the Elmore facility since 1998 by the Metal Systems Group. Management anticipates that capital expenditures should increase in 2004 over the $6.3 million spent in 2003 but will still be below the level of depreciation.

Pension Liability

SFAS No. 87, “Employers’ Accounting for Pensions”, requires the recognition of a minimum pension liability if the present value of the accumulated benefit obligation is greater than the market value of the pension assets at year end. The market value of our pension assets in our domestic defined benefits plan was $85.8 million while the present value of the accumulated benefit obligation was $95.4 million as of December 31, 2003. We, therefore, reduced our minimum pension liability to $9.6 million (in other long-term liabilities) by adjusting the intangible pension asset by $0.6 million in other assets and recording a pre-tax credit of $1.0 million against other comprehensive income, a component of shareholders’ equity, in the fourth quarter 2003. The 2003 pension expense, which had increased the minimum liability, was $1.6 million. We had initially recorded a $13.6 million charge against other comprehensive income in the fourth quarter 2002 to adjust the carrying value of the recognized pension asset and to establish a minimum pension liability of $9.6 million based upon an asset market value of $78.1 million and an accumulated benefit obligation of $87.7 million at December 31, 2002. During 2003, the fair value of the pension assets increased as the investment earnings exceeded the plan payouts and expenses by $7.7 million while the accumulated benefit obligation increased a similar amount due to a lower discount rate, an additional year of service earned and other actuarial assumptions.

Refinancing

We refinanced our debt on a long-term basis with the completion of new debt facilities totaling $147.5 million in the fourth quarter 2003. The new financing includes an $85.0 million revolving line of credit secured by our working capital, $20.0 million of term loans secured by real estate and machinery and equipment and a $7.5 million facility secured by certain export accounts receivable. The remaining $35.0 million consists of a subordinated term loan that is secured by a second lien on our working capital, real estate and machinery and equipment and is payable at the end of five years. All of the new debt is variable rate based upon spreads over LIBOR or prime. The new debt provides additional capacity to fund our growth and provides stability through extension of maturity dates. See Note E to the audited consolidated financial statements included elsewhere in this report.

Proceeds from the refinancing were used to retire the existing revolving credit agreement that was scheduled to mature in April 2004 and to purchase $51.8 million of leased assets, thereby terminating an existing off-balance sheet lease obligation. The leased assets have been used at the Elmore facility in the manufacture of alloy strip products since 1998. The $51.8 million purchase price was the notional value of

the lease at the time of the purchase and, therefore, while the balance sheet debt increased by $51.8 million as result of this transaction, our total obligations, as defined by debt plus off-balance sheet obligations, were unchanged.

The refinancing increases our liquidity and available credit lines, and we anticipate the related expense and repayments in 2004 will be lower than the projected expense and payments under the prior debt and lease structure. Lease payments to be expensed against cost of sales under the terminated lease would have been $10.4 million in 2004. Under the new structure, this expense has been eliminated and replaced by approximately $4.0 million of depreciation expense on the purchased assets. Therefore, cost of sales will be $6.4 million lower and gross margin will be $6.4 million higher in 2004 than it would have been under the prior financing arrangement. The margin improvement will flow through the Metal Systems Group. This benefit will be partially offset by an increase in the amortization of deferred financing fees and higher interest costs due to the increase in debt and changes in the interest rate structure. Based upon the interest rates and debt levels at the time of the refinancing, the increase in these costs are estimated to be $5.0 million in 2004 and, therefore, management estimates that earnings before income taxes in 2004 will improve by $1.4 million as a result of the refinancing. In addition, the increased interest payments plus the required debt repayments in 2004 are estimated to be $5.2 million lower than the 2004 lease payment would have been.

As a result of the refinancing, we recorded a $6.0 million one-time charge in the fourth quarter 2003 to write off deferred costs associated with the prior financing arrangement and to record derivative ineffectiveness on an associated interest rate swap. We have an interest rate swap that initially was designated as a hedge of the equipment operating lease payments. With the termination of the lease, the swap no longer qualified for hedge accounting, and the $4.6 million unfavorable fair value at the time of the refinancing that previously was deferred into other comprehensive income on our consolidated balance sheet was charged against the other-net expense on our consolidated income statements. We kept this swap in place, as its cash flows will serve to hedge a portion of the outstanding variable rate debt even though the swap does not technically qualify for hedge accounting. See Note G to the audited consolidated financial statements included elsewhere in this report. An additional $0.1 million was recorded against other-net expense for other deferred costs while $0.7 million was recorded against cost of sales and $0.6 million against SG&A expense as part of the $6.0 million charge.

Debt issuance costs associated with the December 2003 refinancing totaling $6.2 million were deferred and included in other assets on the consolidated balance sheet. The issuance costs included $4.6 million of cash payments and $1.6 million representing the fair value of warrants to purchase 115,000 common shares and are being amortized using the effective interest method over the life of the debt.

Debt and Off-Balance Sheet Obligations

Total debt on the balance sheet was $99.1 million as of December 31, 2003 compared to $63.5 million as of December 31, 2002. The $35.6 million increase resulted from the $51.8 million purchase of the leased assets and the retirement of an existing off-balance sheet obligation as part of the refinancing partially offset by a $16.2 million reduction paid by cash flow from operations. Short-term debt totaled $13.4 million at year-end 2003 and included $2.1 million borrowed under the new revolving credit agreement, $9.7 million of gold denominated debt and $0.1 million of foreign currency-denominated debt. The gold loan is designed as a hedge against gold inventory. Short-term debt also includes $1.5 million of the current portion of long-term debt obligations. In addition to the new long-term debt obtained in the fourth quarter, we also had an $8.3 million variable rate industrial development bond, a $3.0 million variable rate demand note and a $0.9 million promissory note outstanding at December 31, 2003. We were in compliance with all of our debt covenants as of December 31, 2003.

In addition to the $99.1 million of balance sheet debt, we have an off-balance sheet operating lease with a notional value of $14.2 million that finances a building at the Elmore facility. Annual payments under this lease are $2.3 million. See Note F to the audited consolidated financial statements included elsewhere in this report for further leasing details.

We maintain a portion of our precious metal inventories on a consignment basis in order to reduce our price exposure. See "Item 7A. Quantitative and Qualitative Disclosures About Market Risk." The notional value of this inventory was $11.5 million at December 31, 2003 and $15.9 million at December 31, 2002. The value of the consigned precious metals declined during 2003 due to inventory reduction efforts and changes in the product mix. The impact of the decrease in quantity on hand was offset in part by higher prices at year-end 2003 than at year-end 2002. Since third parties own the consigned precious metal, its cost is not reflected in the total inventory on our balance sheet. We maintained an off-balance sheet financing arrangement with a bank for a portion of our copper-based inventories until it was terminated in the fourth quarter 2002. We purchased the copper inventory for $6.0 million from the bank and added it into our balance sheet inventory as we determined it was more cost effective to finance these inventories with traditional balance sheet debt.

We have made significant reductions in our total obligations, defined as balance sheet debt, key off-balance sheet leases and off-balance sheet inventory financing arrangements, over the last three years. The notional balance of these obligations as of December 31, 2003 and 2000, as well as the change between periods, is set forth in the following table:

	As of December 31,		Increase/ (Decrease)
	2003	2000	
		(Millions)	
Balance Sheet Debt			
Short-term	$ 13.4	$ 25.4	$(12.0)
Long-term	85.7	43.3	42.4
Key Off-balance Sheet Leases			
Synthetic Equipment Lease	—	59.7	(59.7)
Building Lease	14.2	17.9	(3.7)
Off-Balance Sheet Inventory Financing			
Precious Metal Consignment	11.5	51.1	(39.6)
Copper Financing	—	8.5	(8.5)
Total	$124.8	$205.9	$(81.1)

A summary of contractual payments under long-term debt agreements, operating leases and material purchase commitments by year is as follows:

		Payments Due In					
	Total	2004	2005	2006	2007	2008	Thereafter
		(Dollars in millions)					
Long-term debt repayments	$ 87.2	$ 1.5	$ 3.5	$ 3.5	$ 3.5	$65.6	$ 9.6
Elmore building lease payments	18.6	2.3	2.3	2.3	2.3	2.3	7.1
Other operating lease payments	10.5	2.7	1.9	1.3	1.0	1.0	2.6
Subtotal non-cancelable leases	29.1	5.0	4.2	3.6	3.3	3.3	9.7
Purchase obligations	47.7	12.3	12.2	12.2	11.0	—	—
Total	$164.0	$18.8	$19.9	$19.3	$17.8	$68.9	$19.3

See "— Refinancing."

The new revolving credit agreement, the $35.0 million subordinated loan and the $20.0 million term loans mature in 2008. Management anticipates that new debt agreements will be negotiated prior to the maturation of these agreements in 2008, as warranted. Quarterly installments against the term loans begin in 2004 while annual repayments are also required to be made against other portions of our long-term debt in each of the next five years. See Note E to the audited consolidated financial statements included elsewhere in this report for additional debt information. The lease payments represent payments under non-cancelable leases with initial lease terms in excess of one year as of December 31, 2003. See Note F to the audited

consolidated financial statements included elsewhere in this report. The purchase obligations include $0.3 million for capital equipment to be acquired in 2004. The balance of the obligations are for raw materials to be acquired under long-term supply agreements. These commitments end in 2007, although we have the opportunity to negotiate an extension for one of the agreements. See Note L to the audited consolidated financial statements included elsewhere in this report.

Other

The $10.6 million improvement in cash flow from operations in 2003 over 2002 was caused primarily by a $12.0 million increase in cash receipts from the sale of goods. Cash payments for materials and expenses declined $3.5 million despite a higher level of sales, further contributing to the improvement in cash flow from operations in 2003, while payments for interest and taxes were $4.9 million higher in 2003 than in 2002. Cash receipts from the sale of goods were significantly lower in 2002 than in 2001 due to the decline in sales in 2002 and the change in accounts receivable balances between periods. However, by reducing the level of production activities and as a result of our inventory reduction efforts and cost control programs, cash payments for materials and expenses declined as well, offsetting all but $13.2 million of the fall-off in cash receipts. Combined with a $6.4 million reduction in payments for interest and taxes, the decline in cash flow from operations was limited to $6.8 million in 2002 as compared to 2001.

Management believes that cash flow from operations plus the available borrowing capacity are adequate to support operating requirements, capital expenditures, projected pension plan contributions and remediation projects. Our cost control and working capital management efforts allowed cash flow from operations to remain positive on an annual basis despite the operating losses in the 2001 through 2003 time period, while the capital expenditure limitations and the elimination of the regular dividend in the third quarter 2001 helped to further limit cash outlays. Cash flows were also sufficient to meet all debt service payments in the last three years. Further growth in cash receipts is dependent upon our ability to generate additional sales, either from new products or from existing products into new or current markets or geographic regions, and our continued ability to collect receivables on a timely basis. Future cash payments for materials and expenses may be affected, favorably or unfavorably, by a variety of factors, including our on-going cost control and inventory management programs, plant efficiencies and operating levels relative to sales, CBD-related payments and increased regulatory requirements, inflation and retirement plan benefits.

The refinanced debt structure provides improved stability in terms of maturity dates and improved flexibility in terms of available credit and covenant structures. Our current debt-to-equity ratio, recent operating losses or other financial measures may limit the ability to raise debt financing in excess of the existing revolving credit agreement. However, availability under existing unused lines of credit totaled $36.9 million as of December 31, 2003.

We attempt to maintain cash balances at a minimum with any excess cash used to reduce overnight or other short-term borrowings. Cash balances, if any, are invested in high quality, highly liquid investments.

Environmental

We have an active program of environmental compliance. We estimate the probable cost of identified environmental remediation projects and establish reserves accordingly. The environmental remediation reserve balance was $6.9 million at December 31, 2003 and $7.7 million at December 31, 2002. The reserve was reduced in 2003 for changes in the estimated cost for various projects based on analyses of the projected required remediation effort and payments for current activity. See Note L to the audited consolidated financial statements included elsewhere in this report.

Ore Reserves

Our reserves of bertrandite ore are located in Juab County, Utah. An ongoing drilling program has generally added to proven reserves. Proven reserves are the measured quantities of ore commercially recoverable through open pit mining, by which an excavation or cut is made at the surface of the ground for the purpose of extracting ore. The mine is open to the surface for the duration of its life. Probable reserves are the estimated quantities of ore known to exist, principally at greater depths, but prospects for commercial recovery are indeterminable. Ore dilution that occurs during mining is approximately seven percent. Approximately 87% of beryllium in ore is recovered in the extraction process. We augment our proven reserves of bertrandite ore through the purchase of imported beryl ore, approximately 4% beryllium, which is also processed at the Utah extraction facility.

We use computer models to estimate ore reserves, which are subject to economic and physical evaluation. Development drilling can also affect the total ore reserves to some degree. The requirement that reserves pass an economic test causes open-pit mineable ore to be found in both proven and probable geologic settings. Proven reserves decreased slightly and probable reserves were unchanged in 2003 while proven reserves decreased and probable reserves increased in 2002. We own approximately 95% of the

proven reserves and lease the balance. Based upon average production levels in recent years, proven reserves would last approximately 100 years. Ore reserves classified as possible are excluded from the following table.

	2003	2002	2001	2000	1999
Proven bertrandite ore reserves at year end (thousands of dry tons)	6,687	6,730	7,270	7,690	7,769
Grade % beryllium	0.267%	0.267%	0.268%	0.263%	0.265%
Probable bertrandite ore reserves at year end (thousands of dry tons)	3,519	3,519	3,081	3,166	3,081
Grade % beryllium	0.232%	0.232%	0.219%	0.217%	0.215%
Bertrandite ore processed (thousands of dry tons, diluted)	41	40	48	84	93
Grade % beryllium, diluted	0.224%	0.217%	0.224%	0.235%	0.240%

Critical Accounting Policies

The preparation of consolidated financial statements requires the inherent use of estimates and management's judgment in establishing those estimates. The following are the most significant accounting policies used by us that rely upon management's judgment.

Accrued Liabilities. We have various accruals on our balance sheet that are based in part upon management's judgment, including accruals for litigation, environmental remediation and workers' compensation costs. We establish accrual balances at the best estimate determined by a review of the available facts and trends by management and independent advisors and specialists as appropriate. Absent a best estimate, the accrual is established at the low end of the estimated reasonable range in accordance with SFAS No. 5, "Accounting for Contingencies." Accruals are only established for identified and/or asserted claims; future claims, therefore, could give rise to increases to the accruals. The accruals are adjusted as the facts and circumstances change. The accruals may also be adjusted for changes in our strategies or regulatory requirements. Since these accruals are estimates, the ultimate resolution may be greater or less than the established accrual balance for a variety of reasons, including court decisions, additional discovery, inflation levels, cost control efforts and resolution of similar cases. Changes to the accruals would then result in an additional charge or credit to income. See Note L to the audited consolidated financial statements included elsewhere in this report.

The accrued legal liability only includes the estimated indemnity cost, if any, to resolve the claim through a settlement or court verdict. The legal defense costs are not included in the accrual and are expensed in the period incurred, with the level of expense in a given year affected by the number and types of claims we are actively defending. Certain legal claims are subject to partial or complete insurance recovery. The accrued liability is recorded at the gross amount of the estimated cost and the insurance recoverable, if any, is recorded as a separate asset and is not netted against the liability.

We believe that our accruals are reasonable based upon our history and the facts and circumstances. However, if the December 31, 2003 environmental reserve, workers' compensation reserve and the accrued CBD legal liability were understated by 10% for any reason, including the above identified causes, and assuming no increase in insurance coverage, then our future expense would increase and our cash flow from operations would decrease by approximately $1.2 million. Similarly, if these reserves were overstated by 10%, then the expense would decrease and cash flow would increase by $1.2 million.

Settlements for CBD litigation claims have averaged approximately $0.1 million per claim over the 2001 to 2003 time period while eleven new claims were filed per year on average over this time frame. Assuming we receive eleven new cases next year and establish reserves for those cases at the average cost of $0.1 million and there is no insurance coverage for these cases, we would record an increase to the reserve and an expense of $1.1 million. Assuming the cases are ultimately settled for the average cost, our cash flow would be reduced by $1.1 million at that time.

Pensions. We have a defined benefit pension plan that covers a large portion of our current and former domestic employees. We account for this plan in accordance with SFAS No. 87, "Employers' Accounting for Pensions." Under Statement No. 87, the carrying values of the associated assets and liabilities are determined on an actuarial basis using numerous actuarial and financial assumptions. Differences between the assumptions and current period actual results may be deferred into the net pension asset value and amortized against future income under established guidelines. The deferral process generally reduces the volatility of the recognized net pension asset or liability and current period income or expense. The actuaries adjust their assumptions to reflect changes in demographics and other factors, including mortality rates and employee turnover, as warranted. We periodically review other key assumptions, including the expected return on plan assets, the discount rate and the average wage rate increase, against actual results, trends and industry standards and make adjustments accordingly. These adjustments may then lead to a higher or lower expense in a future period.

We maintained our expected long-term rate of return on plan assets assumption at 9.0% as of December 31, 2003, unchanged from the previous year end. While our pension assets earned well in excess of 9.0% in 2003, the plan underperformed this level for several years prior to 2003. However, our long-term experience indicates that a 9.0% return is reasonable. Our pension plan investment strategies are governed by a policy adopted by the Retirement Plan Review Committee of the Board of Directors. The future return on pension assets is dependent upon the plan's asset allocation, which changes from time to time, and the performance of the underlying investments. Should the assets earn an average return less than 9.0% over time, in all likelihood the future pension expense would increase. Investment earnings in excess of 9.0% would tend to reduce the future expense. We establish the discount rate used to determine the present value of the projected and accumulated benefit obligation at the end of each year based upon the available market rates for high quality, fixed income investments. An increase to the discount rate would reduce the future pension expense and, conversely, a lower discount rate would raise the future pension expense. As of December 31, 2003, we elected to use a discount rate of 6.375% compared to a rate of 6.75% as of December 31, 2002. We estimate that the change in the discount rate and other actuarial assumptions and valuations combined with the amortization of prior differences between actual and expected results will result in a $1.0 million increase in the net expense from our qualified pension plan in 2004 over 2003 with the 2005 expense estimated to be an additional $1.1 million higher than the 2004 expense. If the expected rate of return assumption was changed by 50 basis points (0.50%) and all other pension assumptions remained constant, the 2004 projected expense would change by approximately $0.5 million. If the December 31, 2003 discount rate were reduced by 25 basis points (0.25%) and all other pension assumptions remained constant, the 2004 pension expense would increase by approximately an additional $0.3 million.

The $9.6 million additional minimum pension liability recorded as of December 31, 2003 does not by itself indicate that a cash contribution to the plan is required. This liability was recorded according to SFAS No. 87, while cash contributions and funding requirements are governed by ERISA and IRS guidelines. Based upon these guidelines and current assumptions and estimates, we anticipate that a cash contribution to the pension plan of approximately $1.7 million may be required in 2004. The inter-relationship of the many factors affecting the plan assets and liabilities makes it difficult to project contributions beyond one year out; however, a contribution may be required in 2005 that is greater than the 2004 projected contribution. The minimum pension liability under SFAS No. 87 will be recalculated at the measurement date, December 31 of each year, and any adjustments to this account and other comprehensive income within shareholders' equity will be recorded at that time accordingly. See Note K to the audited consolidated financial statements included elsewhere in this report for additional details on our pension plan.

LIFO Inventory. The prices of certain major raw materials, including copper, nickel, gold, silver and other precious metals purchased by us, fluctuate during a given year. Such changes in costs are generally reflected in selling price adjustments. The prices of labor and other factors of production generally increase

with inflation. Additions to capacity, while more expensive over time usually result in greater productivity or improved yields. However, market factors, alternative materials and competitive pricing affect our ability to offset wage, benefit and other cost increases. Therefore, we use the last-in, first-out, or LIFO, method for costing the majority of our domestic inventories. Under the LIFO method, inflationary cost increases are charged against the current cost of goods sold in order to more closely match the cost with revenue. The carrying value of the inventory is based upon older costs and as a result, the LIFO cost of the inventory on the balance sheet is typically lower than it would be under most alternative costing methods. The LIFO impact on the income statement in a given year is dependent upon the inflation rate effect on raw material purchases and manufacturing conversion costs, the level of purchases in a given year and the inventory mix and balance. In 2003, the average inflation rate was low, and we reduced our inventories. As a result, LIFO inventory layers were liquidated that reduced cost of sales by $3.6 million in 2003. However, the cost of various raw materials, including copper and nickel, increased near the end of the fourth quarter 2003, and prices continued to rise in the early portion of 2004.

Assuming no change from the December 31, 2003 inventory quantity or mix, each percentage point change in the average annual inflation factor would result in an approximately $0.3 million change in our LIFO inventory value.

Deferred Tax Assets. We record deferred tax assets and liabilities in accordance with SFAS No. 109, “Accounting For Income Taxes.” The deferrals are determined based upon the temporary difference between the financial reporting and tax bases of assets and liabilities. We review the expiration dates of the deferrals against projected income levels to determine if the deferral will or can be realized. If it is determined that it is not probable a deferral will be realized, a valuation allowance would be established for that item. Certain deferrals, including the alternative minimum tax credit, do not have an expiration date. See Note I to the audited consolidated financial statements included elsewhere in this report for additional deferred tax details.

In addition to reviewing the deferred tax assets against their expiration dates, we evaluated our deferred tax assets for impairment due to the recent operating losses, as previously described, and recorded valuation allowances of $7.2 million in 2003, with $5.3 million charged to expense and $1.9 million charged to other comprehensive income, and $27.2 million in 2002, with $19.9 million charged to expense and $7.3 million charged to other comprehensive income. Should we generate a domestic pre-tax profit in subsequent periods, the valuation allowance will be reversed against the current period domestic federal tax expense, resulting in higher net income and net income per share for that period. Once we establish a trend of consistent actual and projected positive earnings, significant portions or all of the remaining valuation allowance may be reversed back to income. Should we generate domestic pre-tax losses in subsequent periods, a domestic federal tax benefit will not be recorded, and the valuation allowance recorded against the net deferred tax assets will increase. This will result in a larger net loss and net loss per share for that period versus a comparable period when a favorable tax benefit was recorded. We will continue to record tax provisions or benefits as appropriate for state and local taxes and various foreign taxes regardless of the status of this valuation allowance.

The valuation allowance available to be reversed to offset future tax expense was $25.2 million as of December 31, 2003. Changes in the deferred tax valuation allowance do not impact cash flows.

Derivatives. We may use derivative financial instruments to hedge our foreign currency, commodity price and interest rate exposures. We apply hedge accounting when an effective hedge relationship can be documented and maintained. If a hedge is deemed effective, changes in its fair value are recorded in other comprehensive income until the underlying hedged item matures. If a hedge does not qualify as effective, changes in its fair value are recorded against income in the current period. We secure derivatives with the intention of hedging existing or forecasted transactions only and do not engage in speculative trading or holding derivatives for investment purposes. Our annual budget and quarterly forecasts serve as the basis for determining forecasted transactions. The use of derivatives is governed by policies established by the Board of Directors. The level of derivatives outstanding may be limited by the availability of credit from financial

institutions. See “Item 7A. Quantitative and Qualitative Disclosures About Market Risk” and Note G to the audited consolidated financial statements included elsewhere in this report for more information on our derivatives.

Outlook

Shipment and sales order trends in early 2004 were positive. Key markets for our products, including telecommunications and computer and plastic tooling, showed signs of improvement while other markets, including defense and optical media, remained strong. Shipments for the new James Webb Space Telescope have begun, and this will add to the expected revenue growth in 2004. New products from Alloy Products, TMI and WAM offer realistic opportunities for further growth in 2004. We also plan on increasing our international presence in 2004 in efforts to continue to position ourselves to capture applications in the rapidly changing and growing international markets.

We remain committed to cost control and improving operational efficiencies. The margin improvements generated in 2003 demonstrated the leverage to be gained through increasing yields, optimizing machinery and inventory utilization and various cost control programs. The principles of Six Sigma will continue to be used to help drive further improvements in margins and working capital in 2004.

Improved profitability combined with working capital management should help to reduce debt in 2004. In addition, the refinanced debt brings stability to our capital structure and provides the borrowing capacity to support our growth.

We made additional progress on our CBD litigation in 2003, reducing the number of outstanding claims without a material impact on cash flows or financial position. We are encouraged by this progress but caution that it is difficult to predict the outcome of the remaining claims or the probability and the potential impact of future claims. The progress made thus far is a testament to our health and safety measures and our investment in worker protection, education and medical research.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to precious metal and commodity price, interest rate and foreign exchange rate differences. While the degree of exposure varies from year to year, our methods and policies designed to manage these exposures have remained fairly consistent. We attempt to minimize the effects of these exposures through a combination of natural hedges and the use of derivatives. Our use of derivatives is governed by policies adopted by the Board of Directors.

We use gold and other precious metals in manufacturing various Microelectronics Group and Metal Systems products. To reduce the exposure to market price changes, certain amounts of precious metals are maintained on a consigned inventory basis. The metal is purchased out of consignment when it is ready to ship to a customer as a finished product. Our purchase price forms the basis for the price charged to the customer for the precious metal content and, therefore, the current cost is matched to the selling price and the price exposure is minimized. We bear the risk of loss for precious metals lost during the production process as well as physical inventory shortages and similar adjustments. We maintain a certain amount of gold in our own inventory, which is typically balanced out by having a loan denominated in gold for the same number of ounces. Any change in the market price of gold, either higher or lower, will result in an equal change in the fair value of the asset and liability recorded on the balance sheet.

We are charged a consignment fee by the financial institutions that actually own the precious metals. This fee, along with the interest charged on the gold-denominated loan, is partially a function of the market price of the metal. Because of market forces and competition, the fee, but not the interest on the loan, can be charged to customers on a case-by-case basis. To further limit price and financing rate exposures, under some circumstances we will require customers to furnish their own metal for processing. This practice is used more frequently when the rates are high and/or more volatile. Should the market price of precious metals used by us increase by 15% from the prices on December 31, 2003, the additional pre-tax cost to us on an annual basis would be approximately $0.2 million. This calculation assumes no changes in the quantity of inventory or the underlying fee and interest rates and that none of the additional fee is charged to customers.

We also use base metals, primarily copper, in our production processes. Fluctuations in the market price of copper are passed on to customers in the form of price adders or reductions for the majority of the copper sales volumes. However, when we cannot pass through the price of copper, margins can be reduced by increases in the market price of copper. To hedge this exposure, we may enter into copper swaps with financial institutions that exchange a variable price of copper for a fixed price. By so doing, the difference between our purchase price and selling price of copper will be a known, fixed value for the quantities covered by the swaps. We did not have any copper swaps outstanding as of December 31, 2003, in part due to credit constraints. The notional value of the outstanding copper swaps was $1.8 million as of December 31, 2002. We estimate that a 10% increase in the price of copper from the December 31, 2003 price would result in approximately $0.9 million increase in the annual cost of goods sold as a result of the limited ability to pass through all copper price increases to customers. This calculation assumes no change in the annual volume of copper-containing products sold that are not subject to a copper price pass through to customers, no other selling price or cost changes and no changes in inventory from the 2003 levels.

We are exposed to changes in interest rates on our debt and cash. This interest rate exposure is managed by maintaining a combination of short-term and long-term debt and variable and fixed rate instruments. We also use interest rate swaps to fix the interest rate on variable debt obligations, as we deem appropriate. Excess cash, if any, is typically invested in high quality instruments that mature in seven days or less. We had $95.2 million in variable rate debt and variable-to-fixed interest rate swaps with a notional value of $55.9 million outstanding at December 31, 2003. If interest rates were to increase 200 basis points (2.0%) from the December 31, 2003 rates and assuming no changes in debt or cash from the December 31, 2003 levels, the additional annual net expense would be $0.8 million on a pre-tax basis. The calculation excludes

any additional expense on fixed rate debt that upon maturity may or may not be extended at the prevailing interest rates.

Our international operations sell products priced in foreign currencies, mainly the euro, yen and sterling, while the majority of these products' costs are incurred in United States dollars. We are exposed to currency movements in that if the United States dollar strengthens, the translated value of the foreign currency sale and the resulting margin on that sale will be reduced. We typically cannot increase the price of our products for short-term exchange rate movements because of our local competition. To minimize this exposure, we may purchase foreign currency forward contracts, options and collars. Should the dollar strengthen, the decline in the translated value of the margins should be offset by a gain on the contract. A decrease in the value of the dollar would result in larger margins but potentially a loss on the contract, depending upon the method used to hedge the exposure. The notional value of the outstanding currency contracts was $39.8 million as of December 31, 2003 compared to $26.4 million as of December 31, 2002. If the dollar weakened 10% against all currencies from the December 31, 2003 exchange rates, the increased loss on the outstanding contracts as of December 31, 2003 would reduce pre-tax profits by approximately $4.5 million. This calculation does not take into account the increase in margins as a result of translating foreign currency sales at the more favorable exchange rate, any changes in margins from potential volume fluctuations caused by currency movements or the translation effects on any other foreign currency-denominated income statement or balance sheet item.

We record the fair values of derivatives on our balance sheet in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities" and SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities." The fair values are determined by financial institutions and represent the market price for the instrument between two willing parties as of the balance sheet dates. Changes in the fair value of outstanding derivatives are recorded in equity or against income as appropriate under the statement guidelines. The fair value of the outstanding foreign currency contracts was a liability of $2.9 million at December 31, 2003, indicating that the average hedge rates were unfavorable compared to the actual year-end market exchange rates. The fair value of the interest rate swaps was a loss of $5.3 million as the available interest rates were lower than the rates fixed under the swap contracts. The net derivative loss recorded in other comprehensive income within shareholders' equity was $3.2 million as of December 31, 2003 compared to $7.8 million at December 31, 2002.

Item 8. Financial Statements and Supplementary Data

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31,		
	2003	2002	2001
	(Dollars in thousands, except per share data)		
Net sales	$ 401,046	$ 372,829	$ 472,569
Cost of sales	328,008	324,932	404,574
Gross profit	73,038	47,897	67,995
Selling, general and administrative expense	68,834	61,293	75,315
Research and development expense	4,230	4,265	6,327
Other — net	9,314	5,184	422
Operating loss	(9,340)	(22,845)	(14,069)
Interest expense	3,355	3,010	3,327
Loss before income taxes	(12,695)	(25,855)	(17,396)
Minority interest	(45)	—	—
Income taxes (benefit):			
Currently payable	855	(8,018)	(755)
Deferred	(279)	17,767	(6,367)
	576	9,749	(7,122)
Net loss	$ (13,226)	$ (35,604)	$ (10,274)
Net loss per share of common stock — basic and diluted	$ (0.80)	$ (2.15)	$ (0.62)
Weighted average number of shares of common stock outstanding	16,562,864	16,557,388	16,518,691

See Notes to Consolidated Financial Statements.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2003	2002	2001
	(Dollars in thousands)		
Cash flows from operating activities:			
Net loss	$(13,226)	$(35,604)	$(10,274)
Adjustments to reconcile net loss to net cash provided from operating activities:			
Depreciation, depletion and amortization	19,503	20,356	20,944
Amortization of mine development	1,228	284	665
Impairment from asset writedown	—	4,393	—
Deferred tax (benefit) expense	(279)	17,767	(6,367)
Derivative financial instruments ineffectiveness	5,054	(253)	555
Decrease (increase) in accounts receivable	(6,590)	9,654	36,589
Decrease (increase) in inventory	8,646	16,587	5,283
Decrease (increase) in prepaid and other current assets	4,871	(1,387)	360
Increase (decrease) in accounts payable and accrued expenses	2,308	(3,914)	(29,534)
Increase (decrease) in interest and taxes payable	1,221	(3,086)	(1,951)
Increase (decrease) in other long-term liabilities	(443)	(7,879)	2,747
Other — net	4,019	(1,229)	3,458
Net cash provided from operating activities	26,312	15,689	22,475
Cash flows from investing activities:			
Payments for purchase of property, plant and equipment	(6,162)	(5,248)	(23,130)
Payments for mine development	(157)	(166)	(154)
Purchase of equipment previously held under operating lease	(51,846)	—	—
Proceeds from sale of property, plant and equipment	203	140	16
Other investments — net	—	(57)	—
Net cash used in investing activities	(57,962)	(5,331)	(23,268)
Cash flows from financing activities:			
Proceeds from issuance/(repayment) of short-term debt	(9,266)	(1,941)	3,869
Proceeds from issuance of long-term debt	72,000	12,000	39,446
Repayment of long-term debt	(26,034)	(23,000)	(35,500)
Debt issuance costs	(4,636)	—	—
Issuance of common stock under stock option plans	25	—	1,760
Payments of dividends	—	—	(5,967)
Net cash provided from (used in) financing activities	32,089	(12,941)	3,608
Effects of exchange rate changes on cash and cash equivalents	266	(74)	(115)
Net change in cash and cash equivalents	705	(2,657)	2,700
Cash and cash equivalents at beginning of year	4,357	7,014	4,314
Cash and cash equivalents at end of year	$ 5,062	$ 4,357	$ 7,014

See Notes to Consolidated Financial Statements.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	Year Ended December 31,	
	2003	2002
	(Dollars in thousands)	
ASSETS		
Current assets		
Cash and cash equivalents	$ 5,062	$ 4,357
Accounts receivable (less allowance of $1,427 for 2003, and $1,317 for 2002)	55,102	47,543
Inventories	87,396	94,324
Prepaid expenses	5,454	9,766
Deferred income taxes	291	244
Total current assets	153,305	156,234
Other assets	18,902	17,770
Long-term deferred income taxes	704	472
Property, plant, and equipment		
Land	7,284	6,972
Buildings	98,576	97,184
Machinery and equipment	385,505	328,722
Software	20,008	19,983
Construction in progress	4,691	4,222
Allowances for depreciation	(329,328)	(309,742)
	186,736	147,341
Mineral resources	5,029	5,029
Mine development	14,328	14,171
Allowances for amortization and depletion	(15,247)	(13,997)
	4,110	5,203
Property, plant, and equipment—net	190,846	152,544
Goodwill	7,859	7,859
	$ 371,616	$ 334,879
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities		
Short-term debt	$ 13,387	$ 27,235
Accounts payable	16,038	15,129
Salaries and wages	17,443	12,043
Taxes other than income taxes	2,379	2,883
Other liabilities and accrued items	17,544	15,513
Income taxes	1,373	786
Total current liabilities	68,164	73,589
Other long-term liabilities	14,739	17,459
Retirement and post-employment benefits	49,358	48,518
Long-term debt	85,756	36,219
Minority interest in subsidiary	26	—
Shareholders' equity		
Serial preferred stock, no par value; 5,000,000 shares authorized, none issued	—	—
Common stock, no par value; authorized 60,000,000 shares; 22,919,518 issued shares (22,917,618 for 2002)	93,336	93,311
Common stock warrants	1,616	—
Retained income	181,156	194,382
	276,108	287,693
Common stock in treasury, 6,294,128 shares in 2003 (6,281,355		

in 2002)	(105,633)	(105,245)
Other comprehensive income (loss)	(16,794)	(22,859)
Other equity transactions	(108)	(495)
Total shareholders' equity	153,573	159,094
	$ 371,616	$ 334,879

See Notes to Consolidated Financial Statements.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
Years ended December 31, 2003, 2002 and 2001

	Common Stock	Warrants	Retained Income	Common Stock in Treasury	Other Comprehensive Income (Loss)	Other	Total
	(Dollars in thousands, except per share data)						
Balances at January 1, 2001	$90,743	$ —	$244,221	$(104,887)	$ (1,205)	$ 1,035	$229,907
Net loss	—	—	(10,274)	—	—	—	(10,274)
Foreign currency translation adjustment	—	—	—	—	(1,084)	—	(1,084)
Derivative and hedging activity	—	—	—	—	(2,061)	—	(2,061)
Comprehensive loss							(13,419)
Declared dividends $0.24 per share	—	—	(3,961)	—	—	—	(3,961)
Proceeds from sale of 95,230 shares under option plans	1,530	—	—	—	—	—	1,530
Income tax benefit from employees' stock options	230	—	—	—	—	—	230
Other equity transactions	358	—	—	277	—	(273)	362
Forfeiture of restricted stock	—	—	—	(431)	—	132	(299)
Balances at December 31, 2001	92,861	—	229,986	(105,041)	(4,350)	894	214,350
Net loss	—	—	(35,604)	—	—	—	(35,604)
Foreign currency translation adjustment	—	—	—	—	832	—	832
Derivative and hedging activity	—	—	—	—	(5,778)	—	(5,778)
Minimum pension liability	—	—	—	—	(13,563)	—	(13,563)
Comprehensive loss							(54,113)
Other equity transactions	450	—	—	(75)	—	(1,392)	(1,017)
Forfeiture of restricted stock	—	—	—	(129)	—	3	(126)
Balances at December 31, 2002	93,311	—	194,382	(105,245)	(22,859)	(495)	159,094
Net loss	—	—	(13,226)	—	—	—	(13,226)
Foreign currency translation adjustment	—	—	—	—	475	—	475
Derivative and hedging activity	—	—	—	—	4,623	—	4,623
Minimum pension liability	—	—	—	—	967	—	967
Comprehensive loss							(7,161)
Proceeds from sale of 1,900 shares under option plans	21	—	—	—	—	—	21
Income tax benefit from employees' stock options	4	—	—	—	—	—	4
Issuance of 115,000 warrants	—	1,616	—	—	—	—	1,616
Other equity transactions	—	—	—	(229)	—	359	130
Forfeiture of restricted stock	—	—	—	(159)	—	28	(131)
Balances at December 31, 2003	$93,336	$1,616	$181,156	$(105,633)	$(16,794)	$ (108)	$153,573

See Notes to Consolidated Financial Statements.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note A — Significant Accounting Policies

Organization: The Company is a holding company with subsidiaries that have operations in the United States, Western Europe and Asia. These operations manufacture engineered materials used in a variety of markets, including telecommunications and computer electronics, automotive electronics, optical media, data storage, decorative and performance film, industrial components, aerospace and defense, and appliance. The Company's operations are aggregated into two business segments — the Metal Systems Group and the Microelectronics Group — based upon the commonalities of their products, manufacturing processes, customers and other factors. The Metal Systems Group produces strip and bulk alloys (primarily copper beryllium), beryllium metal products and engineered material systems while the Microelectronics Group manufactures precious and non-precious vapor deposition targets, frame lid assemblies, other precious and non-precious metal products, ceramics, electronic packages and thick film circuits. The Company is vertically integrated and distributes its products through a combination of company-owned facilities and independent distributors and agents.

Use of Estimates: The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Consolidation: The Consolidated Financial Statements include the accounts of Brush Engineered Materials Inc. and its subsidiaries. All of the Company's subsidiaries are wholly owned except for an insignificant joint venture in Taiwan established in 2003. Inter-company accounts and transactions are eliminated in consolidation.

Cash Equivalents: All highly liquid investments with a put option or maturity of three months or less when purchased are considered to be cash equivalents.

Accounts Receivable: An allowance for doubtful accounts is maintained for the estimated losses resulting from the inability of customers to pay the amounts due.

Inventories: Inventories are stated at the lower of cost or market. The cost of domestic inventories except ore and supplies is principally determined using the last-in, first-out (LIFO) method. The remaining inventories are stated principally at average cost.

Property, Plant and Equipment: Property, plant and equipment is stated on the basis of cost. Depreciation is computed principally by the straight-line method, except certain facilities for which depreciation is computed by the sum-of-the-years digits or units-of-production method. Depreciable lives that are used in computing the annual provision for depreciation by class of asset are as follows:

	Years
Land improvements	5 to 25
Buildings	10 to 40
Leasehold improvements	Life of lease
Machinery and equipment	3 to 15
Furniture and fixtures	4 to 15
Automobiles and trucks	2 to 8
Research equipment	6 to 12
Computer hardware	3 to 10
Computer software	3 to 10

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Depreciation expense was $18.6 million in 2003, $19.8 million in 2002, and $19.9 million in 2001. Repair and maintenance costs are expensed as incurred.

Mineral Resources and Mine Development: Property acquisition costs are capitalized as mineral resources on the balance sheet and are depleted using the units of production method based upon recoverable proven reserves. Overburden, or waste rock, is removed prior to the extraction of the ore from a particular open pit. The removal cost is capitalized and amortized as the ore is extracted using the units of production method based upon the proven reserves in that particular pit. Exploration and development expenses, including development drilling, are charged to expense in the period that they are incurred.

Intangible Assets: The Company adopted Statement No. 142, "Goodwill and Other Intangible Assets" as of January 1, 2002. Under this statement, goodwill and other indefinite-lived intangible assets are no longer amortized, but instead reviewed annually, or more frequently under certain circumstances, for impairment. The Company determined that a goodwill impairment charge was not required upon adoption of the statement or subsequently during 2002 and 2003. The Company had goodwill of $7.9 million on its balance sheet as of December 31, 2003 and 2002. Goodwill amortization expense was $0.3 million in 2001, or $0.02 per share, all of which was recorded by the Microelectronics Group. Intangible assets with finite lives will continue to be amortized. The cost of intangible assets is amortized using the straight-line method over the periods estimated to be benefited, which is generally 20 years or less.

Asset Impairment: In the event that facts and circumstances indicate that the carrying value of long-lived and intangible assets may be impaired, an evaluation of recoverability is performed. If an evaluation is required, the estimated future undiscounted cash flow associated with the asset or asset group would be compared to the carrying amount to determine if a write-down is required. In August 2001, the FASB issued Statement No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets". The statement amends prior pronouncements and prescribes a uniform approach to accounting for long-lived assets to be held and used, long-lived assets to be disposed of by other than a sale and long-lived assets to be disposed of by sale. The statement was effective January 1, 2002 and had no effect on the Company upon adoption.

Derivatives: The Company records the changes in the fair values of derivative financial instruments in accordance with Statement No. 133, "Accounting for Derivative Instruments and Hedging Activities". The Company recognizes all derivatives on the balance sheet at their fair values. If the derivative is a hedge, depending upon the nature of the hedge, changes in the fair value of the derivative are either offset against the change in fair value of the hedged asset, liability or firm commitment through earnings or recognized in other comprehensive income (loss) until the hedged item is recognized in earnings. The ineffective portion of a derivative's change in fair value, if any, is recognized in earnings immediately. If a derivative is not a hedge, changes in its fair value are adjusted through income.

Asset Removal Obligation: The Company adopted Statement No. 143, "Accounting for Asset Retirement Obligations" in the fourth quarter 2002. Under this statement, a liability must be recorded to recognize the legal obligation to remove an asset at the time the asset is acquired or when the legal liability arises. The liability is recorded for the present value of the ultimate obligation by discounting the estimated future cash flows using a credit-adjusted risk-free interest rate. The liability is accreted over time, with the accretion charged to expense. An asset equal to the fair value of the liability is recorded concurrent with the liability. The asset is then depreciated over the life of the asset. Adoption of this statement did not have a material effect on the Company's results of operations or financial position.

Revenue Recognition: In accordance with SAB 101, the Company recognizes revenue when the goods are shipped and title passes to the customer. The Company requires persuasive evidence that a revenue arrangement exists, delivery of the product has occurred, the selling price is fixed or determinable and collectibility is reasonably assured before revenue is realized and earned.

Shipping and Handling Costs: The Company records shipping and handling costs for products sold to customers in cost of sales on the Consolidated Statements of Income.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Advertising Costs: The Company expenses all advertising costs as incurred. Advertising costs were immaterial for the years presented in the Consolidated Financial Statements.

Income Taxes: The Company uses the liability method in measuring the provision for income taxes and recognizing deferred tax assets and liabilities on the balance sheet. The Company records a valuation allowance to reduce the deferred tax assets to the amount that is more likely than not to be realized.

Reclassification: Certain amounts in prior years have been reclassified to conform to the 2003 consolidated financial statement presentation.

Net Income Per Share: Basic earnings per share (EPS) is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding for the period. Diluted EPS reflects the assumed conversion of all dilutive common stock equivalents as appropriate under the treasury stock method.

Stock Options: The Company provides a stock incentive plan for eligible employees. See Note H to the Consolidated Financial Statements for further details. The Company has adopted the disclosure-only provisions of SFAS No. 123, "Accounting for Stock Based Compensation" and applies the intrinsic value method in accordance with APB Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations in accounting for its stock incentive plan. If the Company had elected to recognize compensation expense for its stock incentive plan awards based on the estimated fair value of the awards on the grant dates, consistent with the method proscribed by SFAS No. 123 by amortizing the expense over the options' vesting period, the pro forma net loss and loss per share (E.P.S.) would have been as noted below:

	2003	2002	2001
	(Dollars in thousands, except per share data)		
Net loss — as reported	$(13,226)	$(35,604)	$(10,274)
Pro forma stock option expense	(1,095)	(1,494)	(1,352)
Net loss — pro forma	$(14,321)	$(37,098)	$(11,626)
E.P.S. — as reported	$ (0.80)	$ (2.15)	$ (0.62)
E.P.S. — pro forma	$ (0.86)	$ (2.24)	$ (0.70)

Note: The pro forma disclosures shown are not representative of the effects on net income and earnings per share in future years.

The weighted-average fair value of the Company's stock options used to compute the pro forma net income and earnings per share disclosures is $2.79, $6.40 and $9.10 for 2003, 2002 and 2001, respectively. The fair value is the estimated present value at grant date using the Black-Scholes option-pricing model with the following weighted-average assumptions for the various grants in 2003, 2002 and 2001:

	2003	2002	2001
Risk-free interest rate	3.63%	4.52%	5.09%
Dividend yield	0%	0%	1.40%
Volatility of stock	39.50%	39.60%	36.50%
Expected life of option	8 years	8 years	7 years

New Pronouncement: The FASB issued FIN 46, "Consolidation of Variable Interest Entities" in January 2003 effective for periods ending subsequent to June 15, 2003 for variable entities for which an enterprise holds a variable interest that it acquired prior to February 1, 2003. The release clarifies the application of Accounting Research Bulletin No. 51, "Consolidated Financial Statements" to certain entities in which the equity investors do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support

from others. The Company adopted FIN 46 as proscribed and its adoption did not have a material impact on the Company's results of operations or financial position.

Note B — Inventories

Inventories in the Consolidated Balance Sheets are summarized as follows:

	December 31,	
	2003	2002
	(Dollars in thousands)	
Principally average cost:		
Raw materials and supplies	$ 24,990	$ 22,572
Work in process	65,212	65,809
Finished goods	20,637	29,522
Gross inventories	110,839	117,903
Excess of average cost over LIFO inventory value	23,443	23,579
Net inventories	$ 87,396	$ 94,324

Average cost approximates current cost. Gross inventories accounted for using the LIFO method totaled $73.9 million at December 31, 2003 and $81.8 million at December 31, 2002. The liquidation of LIFO inventory layers in 2003 reduced cost of sales by $3.6 million.

Note C — Impairment Charge

The Company recorded asset impairment charges of $4.4 million in the fourth quarter 2002 in accordance with SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets". The impairment charges resulted from the assets' undiscounted projected cash flows being less than their carrying values. The Metal Systems Group wrote off $3.1 million of equipment and related facilities formerly used in the production of beryllium. The equipment has been shut down due to the use of alternate input materials and manufacturing processes. Management does not believe these assets are salable. The Microelectronics Group wrote down equipment and a building $1.3 million from its net book value of $1.9 million to its estimated fair market value of $0.6 million. The fair market value was determined by an appraisal by an independent firm. The equipment was shut down in 2003. The impairment charges were recorded in other-net on the Company's 2002 Consolidated Statement of Income.

Note D — Interest

Interest expense associated with active construction and mine development projects is capitalized and amortized over the future useful lives of the related assets. The following chart summarizes the interest incurred, capitalized and paid, as well as the amortization of capitalized interest for 2003, 2002 and 2001.

	2003	2002	2001
	(Dollars in thousands)		
Interest incurred	$3,269	$3,095	$3,918
Less capitalized interest	(86)	85	591
Total expense	$3,355	$3,010	$3,327
Interest paid	$2,558	$3,162	$4,092
Amortization, included principally in cost of sales	$ 623	$ 716	$ 742

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In 1986, the Company purchased company-owned life insurance policies insuring the lives of certain United States employees. The contracts are recorded at cash surrender value, net of policy loans, in other assets. The net contract (income) expense, including interest expense recorded in selling, general and administrative expenses, was $1.4 million, ($0.5) million and ($0.3) million in 2003, 2002 and 2001, respectively. The related interest expense was $1.3 million, $1.5 million and $1.4 million, in 2003, 2002 and 2001, respectively.

Note E — Debt

A summary of long-term debt follows:

	December 31,	
	2003	2002
	(Dollars in thousands)	
Senior Credit Agreement:		
Revolving credit agreement	$20,000	$ —
Senior five-year term note payable in installments beginning in 2004	12,000	—
Senior five-year term note payable in installments beginning in 2004	8,000	—
Variable rate demand bonds payable in installments beginning in 2005	3,000	3,000
Variable rate promissory note — Utah land purchase payable in 20 annual installments through 2021	915	946
Variable rate industrial development revenue bonds payable in 2016	8,305	8,305
Revolving credit agreement	—	24,000
Subordinated five-year term note	35,000	—
	87,220	36,251
Current portion of long-term debt	(1,464)	(32)
Total	$85,756	$36,219

Maturities on long-term debt instruments as of December 31, 2003 are as follows:

	(Dollars in thousands)
2004	$ 1,464
2005	3,493
2006	3,493
2007	3,493
2008	65,644
Thereafter	9,633
Total	$87,220

In December 2003, the Company refinanced its existing revolving credit agreement and a synthetic operating lease with a new debt structure totaling $147.5 million. The refinancing included a five-year $105.0 million senior secured credit agreement, a five-year $35.0 million subordinated term loan and a $7.5 million Exim line of credit.

The senior secured credit agreement is with six financial institutions and provides a maximum availability of $105.0 million. It consists of an $85.0 million revolving credit line secured by a portion of the Company’s working capital, a $12.0 million term note secured by a portion of the Company’s real estate and an $8.0 million term note secured by the Company’s machinery and equipment. At December 31, 2003, there

was $20.0 million in long-term borrowings outstanding against the revolving credit portion of the agreement at an average rate of 5.00% that is fixed through January 2004, at which time it will be reset according to the terms and options available to the Company under the agreement. The credit agreement allows the Company to borrow money at a premium over LIBOR or prime rate and at varying maturities. Also at December 31, 2003, there was $20.0 million outstanding on the two term loans at an average rate of 5.35%, which is fixed through March 2004, at which time it will be reset according to the terms and conditions available under the agreement. The term notes are payable in quarterly installments beginning in July 2004 and include a balloon payment upon maturity in 2008.

The $35.0 million subordinated term note is secured by a second lien on the Company's working capital, real estate and machinery and equipment and is payable in five years with the option to prepay $5.0 million prior to September 2004 without penalty. The interest rate is based on variable prime plus a premium and resets quarterly. To hedge a portion of this variability, the company entered into an interest rate swap that fixed the rate on a notional value of $10.0 million over the life of the note. At December 2003, the Company had $35.0 million in long-term borrowings outstanding on this note at an average effective rate of 14.10%.

Both the credit agreement and the subordinated term note are subject to restrictive covenants including leverage, fixed charges and capital expenditures. The subordinated term loan restricts the issuance of dividends. The senior credit agreement and the subordinated term note are also secured by a first and second lien on the stock of certain of the Company's direct and indirect subsidiaries.

The $7.5 million Exim facility is secured by certain foreign accounts receivable of the Company. The interest rate is LIBOR-based plus a premium. There were no outstanding borrowings against this facility at the end of 2003.

Proceeds from the December 2003 refinancing were used to retire the existing revolving credit agreement and to terminate an off-balance sheet operating lease by purchasing the assets being leased for $51.8 million. See Note F to the Consolidated Financial Statements. Financing fees of $6.2 million associated with the debt refinancing were deferred and are included in other assets on the Consolidated Balance Sheet. The deferred costs are being amortized using the effective interest method over the life of the underlying debt. Included in the $6.2 million deferred financing cost was the fair value of 115,000 warrants for the purchase of the Company's common stock.

The following table summarizes the Company's short-term lines of credit. Amounts shown as outstanding are included in short-term debt on the Consolidated Balance Sheets.

	December 31, 2003			December 31, 2002		
	Total	Outstanding	Available	Total	Outstanding	Available
	(Dollars in thousands)					
Domestic	$34,634	$ 2,049	$32,585	$16,669	$13,239	$ 3,430
Foreign	4,439	142	4,297	14,713	5,707	9,006
Precious metal	9,732	9,732	—	8,257	8,257	—
Total	$48,805	$11,923	$36,882	$39,639	$27,203	$12,436

The domestic line is committed and included in the $85.0 million maximum borrowing under the revolving credit agreement and the $7.5 million Exim facility. The foreign lines are uncommitted, unsecured and renewed annually. The precious metal facility (primarily gold) is secured and renewed annually. The average interest rate on short-term debt was 5.50% and 4.50% as of December 31, 2003 and 2002, respectively.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In November 1996, the Company entered into an agreement with the Lorain Port Authority, Ohio to issue $8.3 million in variable rate industrial revenue bonds, maturing in 2016. The variable rate ranged from 0.85% to 1.81% in 2003 and 1.28% to 2.12% during 2002.

In 1994, the Company refunded its $3.0 million industrial development revenue bonds. The 7.25% bonds were refunded into variable rate demand bonds. The variable rate ranged from 0.78% to 1.65% during 2003 and from 1.15% to 1.95% during 2002. In December 1995, the Company entered into an interest rate swap agreement to manage its interest rate exposure on the bond. The Company converted the variable rate to a fixed rate of 4.75% under the interest rate swap agreement. This swap matured in 2002.

The prior revolving credit agreement, as amended, was terminated in December 2003. A portion of the Company's domestic receivables and inventory up to a maximum of $55.0 million secured the agreement. In January and March 2003, this agreement was amended to waive and revise various covenants and to extend the maturity until April 2004. At December 31, 2002, there was $24.0 million in long-term borrowings outstanding at an average interest rate of 4.92%.

Note F — Leasing Arrangements

The Company leases warehouse and manufacturing space and manufacturing and computer equipment under operating leases with terms ranging up to 14 years. Rent expense amounted to $16.2 million, $17.3 million, and $13.1 million during 2003, 2002, and 2001, respectively. The future estimated minimum lease payments under non-cancelable operating leases with initial lease terms in excess of one year at December 31, 2003 are as follows: 2004 — $5.0 million; 2005 — $4.2 million; 2006 — $3.6 million; 2007 — $3.3 million; 2008 — $3.3 million and thereafter — $9.7 million.

The Company has an operating lease for one of its major production facilities. This facility is owned by a third party and cost approximately $20.3 million to build. Occupancy of the facility began in 1997. Lease payments for the facility continue through 2011 with options for renewal. The estimated minimum payments are included in the preceding paragraph. The facility lease is subject to certain restrictive covenants including leverage, fixed charges and annual capital expenditures.

In December 2003, the Company terminated an operating lease for certain equipment located in Elmore, Ohio and purchased the assets for a residual value of $51.8 million as part of the Company's refinancing. See Note E to the Consolidated Financial Statements. This leasing arrangement, which began in 1996, was structured as a synthetic lease, which meant it was an operating lease for financial reporting purposes and a capital lease for federal income tax purposes. Lease payments for the related equipment began in 1999 and continued through the initial lease term expiring in 2001. The Company then exercised its option to renew the lease of the equipment annually for one-year periods and in 2003 purchased the equipment. The 2003 expense for this lease was $9.3 million and is included in the amounts in the above paragraph.

Note G — Derivative Financial Instruments and Fair Value Information

The Company is exposed to commodity price, interest rate and foreign currency exchange rate differences and attempts to minimize the effects of these exposures through a combination of natural hedges and the use of derivative financial instruments. The Company has policies approved by the Board of Directors that establish the parameters for the allowable types of derivative instruments to be used, the maximum allowable contract periods, aggregate dollar limitations and other hedging guidelines. The Company will only secure a derivative if there is an identifiable underlying exposure that is not otherwise covered by a natural

hedge. In general, derivatives will be held until maturity. The following table summarizes the fair value of the Company's outstanding derivatives and debt as of December 31, 2003 and 2002.

Asset/(Liability)	December 31, 2003		December 31, 2002	
	Notional Amount	Carrying Amount	Notional Amount	Carrying Amount
	(Dollars in thousands)			
Foreign currency contracts				
Forward contracts				
Yen	$16,242	$ (677)	$ 4,344	$ 276
Euro	13,697	(1,307)	—	—
Sterling	3,536	(155)	2,928	(98)
Total	$33,475	$ (2,139)	$ 7,272	$ 178
Options				
Yen	$ —	$ —	$ 2,420	$ (38)
Euro	6,290	(749)	16,750	(1,025)
Total	$ 6,290	$ (749)	$19,170	$ (1,063)
Interest rate exchange contracts				
Floating to fixed	$55,858	$ (5,314)	$50,477	$ (6,665)
Commodity price contracts				
Floating to fixed	—	—	1,813	69
Short- and long-term debt	—	(99,143)	—	(63,454)

The fair values equal the carrying amounts in the Company's Consolidated Balance Sheets as of December 31, 2003 and 2002. SFAS No. 107 defines fair value as the amount at which an instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale. The fair value of the foreign currency forward contracts and options and the commodity and interest rate contracts was calculated by third parties on behalf of the Company using the applicable market rates at December 31, 2003 and December 31, 2002. The fair value of the Company's debt was estimated using a discounted cash flow analysis based on the Company's current incremental borrowing rates for similar types of borrowing arrangements.

The Company records derivatives in its financial statements in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities" and SFAS No. 138, "Accounting for Certain Derivative Instruments and Certain Hedging Activities", which amended SFAS No. 133. Each of the Company's commodity swaps, interest rate swaps and foreign currency derivative contracts have been designated as cash flow hedges as defined under these statements. SFAS No. 133 requires the fair value of outstanding derivative instruments to be recorded on the balance sheet. Accordingly, derivative fair values were included in the balance sheet line items as follows:

Debit/(Credit) Balance	December 31,	
	2003	2002
	(Dollars in thousands)	
Prepaid expenses	$ —	$ 306
Other liabilities and accrued items	(3,952)	(2,147)
Other long-term liabilities	(4,250)	(5,640)
Total	$(8,202)	$(7,481)

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The balance sheet classification of the fair values is dependent upon the Company's rights and obligations under each derivative and the remaining term to maturity. Changes in fair values of derivatives are recorded in income or other comprehensive income (loss) (hereafter "OCI") as appropriate under SFAS No. 133 guidelines. A reconciliation of the changes in fair values and other derivative activity recorded in OCI for 2003 and 2002 is as follows:

	2003	2002
	(Dollars in thousands)	
Balance in other comprehensive income (loss) at January 1	$(7,839)	$(2,061)
Changes in fair values and other current period activity	(107)	(6,569)
Matured derivatives — charged to expense	95	797
Derivative ineffectiveness — (credited)/charged to expense	4,635	(6)
Balance in other comprehensive income (loss) at December 31	$(3,216)	$(7,839)

One of the Company's interest rate swaps has a notional value of $45.9 million and initially was designated as a hedge of the variable rate portion of an operating lease. As a result of the refinancing in December 2003, as further described in Notes E and F to the Consolidated Financial Statements, that lease was terminated and the $4.6 million cumulative loss previously recorded in OCI that was associated with the swap was charged to expense on the Consolidated Statements of Income as the swap no longer qualified for hedge accounting treatment. The swap remained in place after the refinancing as payments under the swap serve as a hedge against the interest rate payments on the new variable rate debt. However, changes in the fair value of the swap due to movements in the market interest rates from the date of the refinancing going forward will be charged to income or expense in the current period. The majority of the $6.6 million change in fair value and other current period hedging activity in 2002 was caused by a decline in the fair value (an increase to the loss) on this interest rate swap as a result of a decline in interest rates during that year. Hedge ineffectiveness, including amounts charged from OCI and other adjustments to the fair values of derivatives that did not flow through OCI, was a $5.1 million expense in 2003 and a $0.3 million credit in 2002 and was included in other — net expense on the Company's Consolidated Statements of Income. The Company estimates that approximately $3.0 million of the balance in OCI at December 31, 2003 will be charged to income during 2004 as a result of maturing derivatives.

The Company hedged a portion of its net investment in its Japanese subsidiary using yen-denominated debt until this loan was repaid in December 2003. A net loss of $0.6 million associated with translating this debt into dollars was recorded in the cumulative translation adjustment as of December 31, 2003. This balance will remain in cumulative translation adjustment and will only be charged to income should the Company ever liquidate its investment. The comparable balance in cumulative translation adjustment as of December 31, 2002 was a net loss of $29,000.

Foreign Exchange Hedge Contracts

The Company uses forward and option contracts to hedge anticipated foreign currency transactions, primarily foreign sales. The purpose of the program is to protect against the reduction in value of the foreign currency transactions from adverse exchange rate movements. Should the dollar strengthen significantly, the decrease in the translated value of the foreign currency transactions should be partially offset by gains on the hedge contracts. Depending upon the method used, the contract may limit the benefits from a weakening of the dollar. The Company's policy limits contracts to maturities of two years or less from the date of issuance. All of the contracts outstanding as of December 31, 2003 are scheduled to mature during 2004. Realized gains and losses on foreign exchange contracts are recorded in other—net on the Consolidated Statements of Income. The total exchange gain/(loss), which includes realized and unrealized losses, was $(0.9) million in 2003, $1.5 million in 2002 and $2.3 million in 2001.

Interest Rate Hedge Contracts

The Company attempts to minimize its exposure to interest rate variations by using combinations of fixed and variable rate instruments with varying lengths of maturities. Depending upon the interest rate yield curve, credit spreads, projected borrowing requirements and rates, cash flow considerations and other factors, the Company may elect to secure interest rate swaps, caps, collars, options or other related derivative instruments. Both fixed-to-variable and variable-to-fixed interest rate swaps may be used.

In December 2003, the Company entered into a five-year variable-to-fixed interest rate swap with a $10.0 million notional value designated as a hedge of a portion of its new variable rate debt.

The Company also has the previously discussed $45.9 million interest rate swap that does not qualify for hedge accounting under the current regulations, but cash payments made or received under this swap will tend to offset changes in the interest payments made on portions of its outstanding variable rate debt not otherwise hedged. The swap matures in 2008 and its notional value declines over time. Gains and losses on this swap were charged to cost of sales over its life until the underlying hedged item, an equipment operating lease, was terminated in December 2003. Gains and losses from that point forward are recorded as derivative ineffectiveness within other-net on the Consolidated Statements of Income.

In December 1995, the Company entered into an interest rate swap, converting to a fixed rate from a variable rate on a $3.0 million industrial revenue development bond. Gains and losses on this swap were recorded in interest expense on the Consolidated Statements of Income. This swap matured during 2002.

Commodity Price Contracts

The Company purchases and manufactures products containing copper. Purchases are exposed to price fluctuations in the copper market. However, for the majority of its copper-based products, the Company will adjust its selling prices to customers to reflect the change in its copper purchase price. This program is designed to be profit neutral; i.e., any changes in copper prices, either up or down, will be directly passed on to the customer.

The Company may use commodity price contracts (i.e., swaps) to hedge the copper purchase price for those volumes where price fluctuations cannot be passed on to the customer. Under these swaps, which are purchased from financial institutions, the Company makes or receives payments based on a difference between a fixed price (as specified in each individual contract) and the market price of copper. These payments will offset the change in prices of the underlying purchases and effectively fix the price of copper at the swap rate for the contracted volume. The Company’s policy limits commodity hedge contracts to maturities of 27 months or less from the original date of issuance. The Company did not have any copper swaps outstanding as of December 31, 2003. While various copper swaps that matured during 2002 were deemed to be effective as defined by SFAS No. 133, all of the swaps outstanding as of December 31, 2002 were deemed to be ineffective. Realized gains and losses on copper swap contracts are recorded in cost of sales on the Consolidated Statements of Income.

Note H — Capital Stock

In connection with the Company’s refinancing agreement dated December 4, 2003, 115,000 $0.01 common stock warrants were issued to the lenders as part of their fee. Holders of the warrants are entitled to redeem them for an equal number of shares of Company common stock. The warrants were recorded as a component of shareholders’ equity at their fair value at the time of issuance. The warrants expire December 5, 2008.

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The Company has 5 million shares of Serial Preferred Stock authorized (no par value), none of which has been issued. Certain terms of the Serial Preferred Stock, including dividends, redemption and conversion, will be determined by the Board of Directors prior to issuance.

On January 27, 1998 the Company's Board of Directors adopted a new share purchase rights plan and declared a dividend distribution of one right for each share of common stock outstanding as of the close of business on February 9, 1998. The plan allows for new shares issued after February 9, 1998 to receive one right subject to certain limitations and exceptions. Each right entitles the shareholder to buy one one-hundredth of a share of Serial Preferred Stock, Series A, at an initial exercise price of $110. A total of 450,000 unissued shares of Serial Preferred Stock will be designated as Series A Preferred Stock. Each share of Series A Preferred Stock will be entitled to participate in dividends on an equivalent basis with 100 shares of common stock and will be entitled to one vote. The rights will not be exercisable and will not be evidenced by separate right certificates until a specified time after any person or group acquires beneficial ownership of 20% or more (or announces a tender offer for 20% or more) of common stock. The rights expire on January 27, 2008, and can be redeemed for 1 cent per right under certain circumstances.

The amended 1995 Stock Incentive Plan authorizes the granting of five categories of incentive awards: option rights, performance restricted shares, performance shares, performance units and restricted shares. As of December 31, 2003, no performance units have been granted.

Option rights entitle the optionee to purchase common shares at a price equal to or greater than market value on the date of grant. Option rights outstanding under the amended 1995 Stock Incentive Plan and previous plans generally become exercisable over a four-year period and expire 10 years from the date of the grant. In 1995, the Company's right to grant options on a total of 228,565 shares (under the Company's 1979, 1984 and 1989 stock option plans) was terminated upon shareholder approval of the amended 1995 Stock Incentive Plan. No further stock awards will be made under the Company's 1979, 1984 and 1989 stock option plans except to the extent that shares become available for grant under these plans by reason of termination of options previously granted.

The 1990 Stock Option Plan for Non-employee Directors (the "1990 Plan") was terminated effective May 7, 1998. The 1997 Stock Incentive Plan for Non-employee Directors replaced the 1990 Plan and provided for a one-time grant of 5,000 options to up to six new non-employee directors who have not yet received options under the 1990 Plan at an option price equal to the fair market value of the shares at the date of the grant. Options are non-qualified and become exercisable six months after the date of grant. The options generally expire 10 years after the date they were granted. The 1997 Stock Incentive Plan for Non-employee Directors was amended on May 1, 2001. The amendment added 100,000 shares to the Plan and established a grant of up to 2,000 options to each Director annually.