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**UNITED STATES SECURITIES AND EXCHANGE
COMMISSION**

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 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
(State or other jurisdiction of
incorporation or organization)
17876 ST. CLAIR AVENUE, CLEVELAND, OHIO
(Address of principal executive offices)

34-1919973
(I.R.S. Employer
Identification No.)
44110
(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 filer (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 annual report to shareholders for the year ended December 31, 2003 are incorporated by reference into Parts I, II and IV.

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

BRUSH ENGINEERED MATERIALS INC.

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

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PART I

Portions of the narrative set forth in this document that are not statements of historical or current facts are forward-looking statements. The Company's actual future performance may materially differ from that contemplated by the forward-looking statements as a result of a variety of factors. These factors include, in addition to those mentioned elsewhere herein:

- The global economy;
- The condition of the markets which the Company serves, whether defined geographically or by segment, with the major market segments being telecommunications and computer, optical media, automotive electronics, industrial components, aerospace and defense, and appliance;
- Changes in product mix and the financial condition of particular customers;
- The Company's success in implementing its strategic plans and the timely and successful completion of capital projects;
- The availability of adequate lines of credit and the associated interest rates;
- Other financial factors, including cost and availability of materials, tax rates, exchange rates, pension costs, energy costs and the cost and availability of insurance;
- The uncertainties concerning the impact resulting from war and terrorist activities;
- Changes in government regulatory requirements and the enactment of new legislation that impacts the Company's obligations; and,
- The conclusion of pending litigation matters in accordance with the Company's expectation that there will be no material adverse effects.

ITEM 1. BUSINESS

Brush Engineered Materials Inc., through its wholly owned subsidiaries, is a leading manufacturer of high-performance engineered materials serving the global telecommunications and computer, optical media, automotive electronics, industrial components, aerospace and defense and appliance markets. As of December 31, 2003 the Company had 1,833 employees.

The Company's subsidiaries are organized under two reportable segments: the Metal Systems Group and the Microelectronics Group. The Metal Systems Group includes Brush Wellman Inc. (Alloy Products and Beryllium Products) and Technical Materials, Inc. (TMI). The Microelectronics Group includes Williams Advanced Materials Inc. (WAM) and Electronic Products, which in turn, consists of Zentrix Technologies Inc. (Zentrix) and Brush Ceramic Products Inc. (a wholly owned subsidiary of Brush Wellman Inc.). Portions of Brush International, Inc. are included in both segments. Included in "All Other" in the Company's financial statements included later in this Form 10-K are the operating results from BEM Services, Inc. and Brush Resources Inc., two wholly owned subsidiaries of the Company. BEM Services charges a management fee for services, such as administrative and financial oversight, to the other businesses within the 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. As of December 31, 2003 BEM Services, Inc. and Brush Resources Inc. had 156 employees.

METAL SYSTEMS GROUP

The Metal Systems Group is comprised of Alloy Products (primarily copper beryllium), Beryllium Products and TMI. In 2003, 60% of the Company's 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, the largest unit within the Company and this segment, manufactures and sells copper and nickel-based alloy systems, the majority of which also contains 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 telecommunications and computer, automotive electronics, aerospace, oil exploration, undersea housing for telecommunications equipment, bushings, bearings, appliances and plastic mold tooling markets. Alloy Products also manufactures non-beryllium-containing alloys including Toughmet(R), a copper-nickel tin alloy. These alloys are corrosion and wear resistant and have excellent lubricity properties and are used in plastic tooling and heavy equipment product applications. Alloy products are sold domestically through Brush distribution centers and internationally through Company-owned and independent distribution centers and independent sales representatives.

Beryllium Products manufactures products that include beryllium, AlBeMet(R) and E-materials, serving the aerospace, defense, medical and industrial x-ray equipment, optical scanning and high performance automation markets. 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 imported beryl ore. In 2001, the Company purchased land and mineral rights that were previously leased by its mining operations in Utah. Beryllium-containing products are sold throughout the world through a direct sales organization and through Company-owned and independent distribution centers.

NGK Insulators, Ltd. of Nagoya, Japan, with subsidiaries in the U.S. and Europe, competes with beryllium alloy strip products and beryllium products. Alloy Strip Products also competes with alloy systems manufactured by Olin Corporation, Wieland Electric, Inc. and Stolberger Metallwerke GmbH, Nippon Mining, PMX and also with other generally less expensive materials, including phosphor bronze, stainless steel and other specialty copper and nickel alloys which are produced by a variety of companies around the world. While Beryllium Products is the only domestic producer of metallic beryllium, it competes with other fabricators as well as with designs utilizing other materials. In the area of beryllium alloy Bulk products (bar, plate, tube and rod), in addition to NGK Insulators, Brush competes with several smaller regional producers such as Freedom Alloys in the U.S., LaBronze Industriel in Europe, and Young II in Asia.

TMI manufactures engineered material systems which 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.

METAL SYSTEMS GROUP -- SALES AND BACKLOG

The backlog of unshipped orders as of December 31, 2003, 2002 and 2001 was \$47,692,000, \$35,064,000 and \$60,945,000 respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. The Company expects that substantially all of its 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 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 set forth on page 49 in Note M to the consolidated financial statements in the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference.

METAL SYSTEMS GROUP -- RESEARCH AND DEVELOPMENT

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development amounted to \$2,820,000 in 2003, \$2,522,000 in 2002 and \$4,679,000 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 Inc. In 2003, 39% of the Company's sales were from this segment (37% in 2002 and 36% in 2001). As of December 31, 2003 the Microelectronics Group had 552 employees.

WAM manufactures and fabricates precious metal and specialty metal products for the optical media, magnetic head, including magnetic resistive (MR) and giant magnetic resistive (GMR) materials, electron tube, performance film and the wireless, semiconductor, photonic and hybrid segments of the microelectronics market. WAM's major product lines include vapor deposition materials, clad and precious metals preforms, high temperature braze materials, ultra fine wire, sealing lids for the semiconductor/hybrid markets and restorative dental alloys.

WAM's products are sold directly from WAM's facilities in Buffalo, New York; Brewster, New York; 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.

Zentrix produces electronic packaging and circuit products. Production sites include Oceanside, California and Newburyport, Massachusetts. These products are used in wireless telecommunication, fiberoptics, automotive and defense applications. Zentrix's products are sold directly and through its sales representatives. Zentrix competes with other electronic packaging and circuit component suppliers such as Kyocera Corporation, Aeroflex, Inc. and Anaren Microwave.

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

MICROELECTRONICS GROUP -- SALES AND BACKLOG

The backlog of unshipped orders as of December 31, 2003, 2002 and 2001 was \$13,681,000, \$19,833,000 and \$20,458,000, respectively. Backlog is generally represented by purchase orders that may be terminated under certain conditions. The Company expects that substantially all of its 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 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 sales in 2003, 18% in 2002 and 13% in 2001. Other segment reporting and geographic information set forth on page 49 in Note M to the consolidated financial statements in the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference.

MICROELECTRONICS GROUP -- RESEARCH AND DEVELOPMENT

Active research and development programs seek new product compositions and designs as well as process innovations. Expenditures for research and development amounted to \$1,409,000 for 2003, \$1,743,000 for 2002 and \$1,648,000 in 2001. A staff of 6 scientists, engineers and technicians was employed in this effort as of year end 2003.

GENERAL

AVAILABILITY OF RAW MATERIALS

The principal raw materials used by the Company are beryllium (extracted from both imported beryl ore and bertrandite mined from the Company's Utah properties), copper, gold, silver, nickel, platinum, palladium and aluminum. Ore reserve data in Management's Discussion and Analysis on pages 24 and 25 of the

Company's annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference. The Company has agreements to purchase stated quantities of beryl ore, beryllium metal and beryllium-copper master alloy from the Defense Logistics Agency of the U.S. Government. In addition, the Company has 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 the Company, is adequate and generally not dependent on any one supplier.

PATENTS AND LICENSES

The Company owns patents, patent applications and licenses relating to certain of its products and processes. While the Company's rights under the patents and licenses are of some importance to its operations, the Company's business is not materially dependent on any one patent or license or on all of its patents and licenses as a group.

REGULATORY MATTERS

The Company is 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 the Company has operated its facilities under applicable standards of inplant and outplant emissions and releases. The inhalation of airborne beryllium particulate may present a health hazard to certain individuals. The Occupational Safety and Health Administration ("OSHA") is currently reviewing its beryllium standards.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table shows the name, age and position of each of our executive officers as of December 31, 2003:

NAME ----	AGE ---	POSITIONS AND OFFICES -----
Gordon D. Harnett	61	Chairman of the Board, President, Chief Executive Officer and Director. Mr. Harnett was elected Chairman of the Board, Chief Executive Officer and Director of the Company effective January 1991. In addition, Mr. Harnett has served as President of the Company from January 1991 to May 2001 and from May 2002 to the present. Prior to January 1991, he had served as a Senior Vice President of The B. F. Goodrich Company from November 1988.
John D. Grampa	56	Vice President Finance and Chief Financial Officer. Mr. Grampa was elected Vice President Finance and Chief Financial Officer in November 1999. He had served as Vice President Finance since October 1998. Prior to that, he had served as Vice President, Finance for the Worldwide Materials Business of Avery Dennison Corporation since March 1994 and held other various financial positions at Avery Dennison Corporation from 1984.
Daniel A. Skoch	54	Senior Vice President Administration. Mr. Skoch was elected Senior Vice President Administration in July 2000. Prior to that time, he had served as Vice President Administration and Human Resources since March 1996. He had served as Vice President Human Resources since July 1991 and prior to that time, he was Corporate Director -- Personnel.

ITEM 2. PROPERTIES

The material properties of the Company, all of which are owned in fee except as otherwise indicated, are as follows:

MANUFACTURING FACILITIES

BREWSTER, NEW YORK -- A 35,000 square foot leased facility on a 6.0 acre site for manufacturing services relating to non-precious metals.

BUFFALO, NEW YORK -- A complex of approximately 97,000 square feet on a 3.8 acre site providing facilities for manufacturing, refining and laboratory services relating to high purity precious metals.

DELTA, UTAH -- An ore extraction plant consisting of 86,000 square feet of buildings and large outdoor facilities situated on a 4,400 acre site. This plant extracts beryllium from bertrandite ore from the Company's mines as well as from imported beryl ore.

ELMORE, OHIO -- A complex containing approximately 856,000 square feet of building space on a 439 acre plant site. This facility employs diverse chemical, metallurgical and metalworking processes in the production of beryllium, beryllium oxide, beryllium alloys and related products.

FREMONT, CALIFORNIA -- A 16,800 square foot leased facility for the fabrication of precision electron beam welded, brazed and diffusion bonded beryllium structures.

JUAB COUNTY, UTAH -- 7,500 acres with respective mineral rights from which the beryllium-bearing ore, bertrandite, is mined by the open pit method. A portion of the mineral rights is held under lease. Ore reserve data set forth on pages 24 and 25 in the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference.

LINCOLN, RHODE ISLAND -- A manufacturing facility consisting of 140,000 square feet located on 7.5 acres. This facility produces reel-to-reel strip metal products which combine precious and non-precious metals in continuous strip form and related metal systems products.

LORAIN, OHIO -- A manufacturing facility consisting of 55,000 square feet located on 15 acres. This facility produces non-beryllium metal alloys in electronic induction furnaces which are continually cast into bar stock and heat treated.

NEWBURYPORT, MASSACHUSETTS -- A 30,000 square foot manufacturing facility on a 4 acre site that produces alumina, beryllia ceramic and direct bond copper products.

OCEANSIDE, CALIFORNIA -- Two leased facilities totaling 20,200 square feet on 1.25 acres of leased land. Over three-quarters of these facilities are comprised of clean rooms for the production of thick-film circuits and other complex circuits.

SANTA CLARA, CALIFORNIA -- A 5,800 square foot leased facility that provides bonding services relating to physical vapor deposition (PVD) materials.

SHOEMAKERSVILLE (READING), PENNSYLVANIA -- A 123,000 square foot plant on a 55 acre site that produces thin precision strips of copper beryllium and other alloys and copper beryllium rod and wire.

SINGAPORE -- A 4,500 square foot leased facility for the assembly and sale of precious metal hermetic sealing lids.

SUBIC BAY, PHILIPPINES -- A 5,000 square foot leased facility that manufactures Combo-Lid(R) and performs preform assembly, inspection and packaging.

TAIPEI, TAIWAN -- A 5,000 square foot leased service/bonding center supporting the PVD product market in Asia.

TUCSON, ARIZONA -- A complex containing approximately 63,000 square feet of building space on a 10 acre site for the production of beryllium oxide ceramic substrates.

WHEATFIELD, NEW YORK -- A 29,000 square foot facility on a 10.2 acre site for manufacturing services relating to braze material and specialty alloys.

RESEARCH FACILITIES AND ADMINISTRATIVE OFFICES

CLEVELAND, OHIO -- A 110,000 square foot building on an 18 acre site housing corporate and administrative offices, data processing and research and development facilities.

SERVICE AND DISTRIBUTION CENTERS

ELMHURST, ILLINOIS -- A 28,500 square foot leased facility principally for distribution of copper beryllium alloys.

FAIRFIELD, NEW JERSEY -- A 24,500 square foot leased facility principally for distribution of copper beryllium alloys.

FUKAYA, JAPAN -- A 35,500 square foot facility on 1.8 acres of land in Saitama Prefecture principally for distribution of copper beryllium alloys.

SINGAPORE -- A 2,500 square foot leased sales office that houses employees of Alloy Products and WAM Far East.

STUTTGART, GERMANY -- A 24,750 square foot leased facility principally for distribution of copper beryllium alloys.

THEALE, ENGLAND -- A 19,700 square foot leased facility principally for distribution of copper beryllium alloys.

WARREN, MICHIGAN -- A 34,500 square foot leased facility principally for distribution of copper beryllium alloys.

ITEM 3. LEGAL PROCEEDINGS

The Company and its subsidiaries are subject, from time to time, to a variety of civil and administrative proceedings arising out of their 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.

BERYLLIUM CLAIMS

There are claims pending in various state and federal courts against Brush Wellman, one of the Company's subsidiaries, by some of its employees or former employees and by third party individuals (typically employees of customers or of independent contractors) alleging that they contracted, or have been placed at risk of contracting, chronic beryllium disease 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, if any, claim loss of consortium.

During 2003, the number of beryllium cases decreased from 33 (involving 70 plaintiffs), as of December 31, 2002 to 15 cases (involving 33) plaintiffs as of December 31, 2003. During 2003, an aggregate of 24 cases involving 47 plaintiffs were settled. Five cases involving 12 plaintiffs were voluntarily dismissed by the plaintiffs. Eleven cases involving 22 plaintiffs were filed in 2003.

The 15 pending beryllium cases 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 10 individuals, as discussed more fully below. Employee cases, in which plaintiffs have a high burden of proof, have historically involved relatively small losses to the Company. Third-party plaintiffs (typically employees of our 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.

In one purported class action in which Brush Wellman is seeking review of the appellate court's reversal of the trial court's denial of class certification, the named plaintiffs allege that past exposure to beryllium has increased their risk of contracting chronic beryllium disease and possibly cancer, although they do not claim to have actually contracted any disease. They seek medical monitoring funds to be used to detect medical problems that they believe may develop as a result of their exposure, and seek punitive damages. This purported class action was brought by named plaintiffs on behalf of tradesmen who worked in one of Brush Wellman's facilities as employees of independent contractors.

In the second purported class action that is pending against Brush Wellman, the named plaintiffs allege that they were exposed to beryllium in the course of their employment with a customer of Brush Wellman, and that they are sensitized to beryllium. They seek medical monitoring funds to be used to detect medical problems that they believe may develop as a result of their exposure, and seek punitive damages. This purported class action was brought by named plaintiffs on behalf of employees who worked in the state of California at the facilities of one of Brush Wellman's customers, and the spouses of those workers.

From January 1, 2004 to March 8, 2004, Brush Wellman was served with a third purported class action, in which the named plaintiffs allege that they were exposed to beryllium in the course of their employment with a customer of Brush Wellman. They seek medical monitoring funds to be used to detect medical problems that they believe may develop as a result of their exposure, and seek punitive damages. This purported class action was brought on behalf of current and former employees who worked at the Marietta, Georgia facility of one of Brush Wellman's customers, and their spouses. 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.

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

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS

The Company's Common Stock is traded on the New York Stock Exchange. As of March 5, 2003 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 in the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference. The Company's ability to pay dividends is restricted as provided in its subordinated term loan agreement dated December 4, 2003.

In connection with the debt refinancing completed on December 4, 2003, the Company issued warrants to purchase 115,000 shares of the Company's common stock to its 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 6. SELECTED FINANCIAL DATA

Selected Financial Data on pages 52 and 53 of the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference.

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

The management's discussion and analysis of financial condition and results of operations on pages 14 through 28 of the annual report to shareholders for the year ended December 31, 2003 is incorporated herein by reference.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The market risk disclosures on pages 27 and 28 of the annual report to shareholders for the year ended December 31, 2003 are incorporated herein by reference.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The report of independent auditors and the following consolidated financial statements of the Company included in the annual report to shareholders for the year ended December 31, 2003 are incorporated herein by reference:

Consolidated Balance Sheets -- December 31, 2003 and 2002.

Consolidated Statements of Income -- Years ended December 31, 2003, 2002 and 2001.

Consolidated Statements of Shareholders' Equity -- Years ended December 31, 2003, 2002 and 2001.

Consolidated Statements of Cash Flows -- Years ended December 31, 2003, 2002 and 2001.

Notes to Consolidated Financial Statements.

Quarterly Data on page 51 in Note P to the consolidated financial statements in the annual report to shareholders for the years ended December 31, 2003 and 2002 is incorporated herein by reference.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

We carried out an evaluation under the supervision and with participation of management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2003 pursuant to Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended. Based upon that evaluation, our management, including the Chief Executive Officer and Chief Financial Officer, concluded that our disclosure controls and procedures were effective as of the evaluation date.

There have been no changes in our internal controls over financial reporting that occurred during the year ended December 31, 2003 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information under Election of Directors on pages 2 through 4 of the Proxy Statement dated March 15, 2004, as filed with the Securities and Exchange Commission pursuant to Regulation 14A, is incorporated herein by reference. The information required by this item relating to our executive officers is included under the caption "Executive Officers of the Registrant" in Part I of this report and is incorporated by reference into this section. The information required by Item 10 with respect to directors, the Audit Committee of the Board of Directors and Audit Committee financial experts is incorporated herein by reference in the section entitled "Corporate Governance; Committees of the Board of Directors" on pages 5 and 6 of the Proxy Statement dated March 15, 2004.

The Company has adopted a Policy Statement on Significant Corporate Governance Issues and a Code of Business Conduct and Ethics that applies to our chief executive officer, chief operating officer and senior financial officers, including the principal financial and accounting officer, controller and other persons performing similar functions in compliance with applicable New York Stock Exchange and Securities and Exchange Commission requirements. These materials, along with the charters of the Audit, Governance, Organization and Compensation and Retirement Plan Review Committees of the Company's Board of Directors, which also comply with applicable requirements, are available on the Company's website at www.beminc.com, and copies are also available upon request by any shareholder to Michael C. Hasychak, Secretary, Brush Engineered Materials Inc., 17876 St. Clair Avenue, Cleveland, Ohio 44110. The Company makes its reports on Forms 10-K, 10-Q and 8-K available on its website, free of charge, as soon as reasonably practicable after these reports are filed with the Securities and Exchange Commission, and any amendments or waivers to the Company's Code of Business Conduct and Ethics and Policy Statement on Significant Corporate Governance Issues will also be made available on the Company's website. The information on our website is not incorporated by reference into this annual report on Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required under this heading is incorporated by reference from pages 11 and 12 of the Proxy Statement dated March 15, 2004, as filed with the Securities and Exchange Commission pursuant to Regulation 14A.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The information required under this heading is incorporated by reference from pages 9 and 10 and the "Equity Compensation Plan Information" on page 12 of the Proxy Statement dated March 15, 2004, as filed with the Securities and Exchange Commission pursuant to Regulation 14A.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Not applicable.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.

The information required under this heading is incorporated by reference on page 19 of the Proxy Statement dated March 15, 2004, as filed with the Securities and Exchange Commission pursuant to Regulation 14A.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a) 1. FINANCIAL STATEMENTS AND SUPPLEMENTAL INFORMATION

Included in Part II of this Form 10-K annual report by reference to the

annual report to shareholders for the year ended December 31, 2003 are the following consolidated financial statements:

Consolidated Balance Sheets -- December 31, 2003 and 2002.

Consolidated Statements of Income -- Years ended December 31, 2003, 2002 and 2001.

Consolidated Statements of Shareholders' Equity -- Years ended December 31, 2003, 2002 and 2001.

Consolidated Statements of Cash Flows -- Years ended December 31, 2003, 2002 and 2001.

Notes to Consolidated Financial Statements.

Report of Independent Auditors.

(a) 2. FINANCIAL STATEMENT SCHEDULES

The following consolidated financial information for the years ended December 31, 2003, 2002 and 2001 is submitted herewith:

Schedule II -- Valuation and qualifying accounts.

All other schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions or are inapplicable, and therefore have been omitted.

(a) 3. EXHIBITS

- (2) Agreement of Merger, dated as of May 17, 2000, by and among Brush Merger Co., Brush Wellman Inc. and Brush Engineered Materials Inc. (filed as Annex A to the Registration Statement on Form S-4 filed by the Company on February 1, 2000, Registration No. 333-95917), incorporated herein by reference.
- (3a) Amended and Restated Articles of Incorporation of Brush Engineered Materials Inc. (filed as Annex B to the Registration Statement on Form S-4 filed by the Company on February 1, 2000, Registration No. 333-95917), incorporated herein by reference.
- (3b) Amended and Restated Code of Regulations of Brush Engineered Materials Inc. (filed as Exhibit 4(b) to the Current Report on Form 8-K filed by Brush Wellman Inc. on May 16, 2000), incorporated herein by reference.
- (4a) Rights Agreement, dated as of May 10, 2000, by and between Brush Engineered Materials Inc. and National City Bank, N.A. as Rights Agent (filed as Exhibit 4(a) to the Current Report on Form 8-K filed by Brush Engineered Materials Inc. on May 16, 2000), incorporated herein by reference.
- (4b) Indenture Modification between Toledo-Lucas Port Authority, dated as of May 30, 2003 (filed as Exhibit 4 to the Quarterly Report on Form 10-Q filed by Brush Engineered Materials Inc. on August 11, 2003), incorporated herein by reference.
- (4c) Lease Modification from National City Bank, Trustee as Lessor to Brush Wellman, Inc. as Lessee, dated as of May 30, 2003 (filed as Exhibit 4.1 to the Quarterly Report on Form 10-Q filed by Brush Engineered Materials Inc. on August 11, 2003), incorporated herein by reference.
- (4d) Pursuant to Regulation S-K, Item 601 (b)(4), the Company agrees to furnish to the Commission, upon its request, a copy of the instruments defining the rights of holders of long-term debt of the Company that are not being filed with this report.

- (4e) Credit Agreement dated December 4, 2003 among Brush Engineered Materials Inc. and other borrowers and Bank One, N.A., acting for itself and as agent for certain other banking institutions as lenders (filed as Exhibit 99.1 to the Company's Form 8-K on December 5, 2003), incorporated herein by reference.
- (4f) First Amendment to Credit Agreement dated March 1, 2004 among Brush Engineered Materials Inc. and other borrowers and Bank One, N.A., acting for itself and as agent for certain other banking institutions as lenders.
- (4g) Loan Agreement dated December 4, 2003 among Brush Engineered Materials Inc. and other borrowers party hereto and Guggenheim Corporate Funding, LLC, as Collateral Agent (filed as Exhibit 99.1 to the Company's Form 8-K on December 16, 2003), incorporated herein by reference.
- (4h) Warrant dated December 4, 2003 to purchase 78,571 shares of Common Stock of Brush Engineered Materials Inc. between Brush and Upper Columbia Capital Company, LLC.
- (4i) Warrant dated December 4, 2003 to purchase 20,000 shares of Common Stock of Brush Engineered Materials Inc. between Brush and H/Z Acquisition Partners LLC.
- (4j) Warrant dated December 4, 2003 to purchase 16,429 shares of Common Stock of Brush Engineered Materials Inc. between Brush and Bank One, NA.
- (10a)* Form of Indemnification Agreement entered into by the Company and its executive officers (filed as Exhibit 10g to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 1-7006), incorporated herein by reference.
- (10b)* Form of Indemnification Agreement entered into by the Company and its directors (filed as Exhibit 10h to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 1-7006), incorporated herein by reference.
- (10c)* Form of Severance Agreement entered into by the Company and Messrs. Gordon D. Harnett, Daniel S. Skoch and John D. Grampa dated October 8, 2001 (filed as Exhibit 10-f to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 1-7006), incorporated herein by reference.
- (10d)* Form of Executive Insurance Agreement entered into by the Company and certain employees dated January 2, 2002. (filed as Exhibit 10-g to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 001-7006) incorporated herein by reference.
- (10e)* Form of Trust Agreement between the Company and Key Trust Company of Ohio, N.A. (formerly Ameritrust Company National Association) on behalf of the Company's executive officers (filed as Exhibit 10e to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 1-7006), incorporated herein by reference.
- (10f)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) Deferred Compensation Plan for Non-employee Directors effective January 1, 1992 (filed as Exhibit I to the Proxy Statement dated March 6, 1992, filed by Brush Wellman Inc., Commission File No. 1-7006), incorporated herein by reference.
- (10g)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. Deferred Compensation Plan for Non-employee Directors (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 333-63353), incorporated herein by reference.
- (10h)* First Amendment to the Deferred Compensation Plan for Non-employee Directors as amended through September 11, 2001 (filed as Exhibit 4c to Post-Effective Amendment No. 1 to Registration Statement No. 333-74296), incorporated herein by reference.
- (10i)* Form of Trust Agreement between the Company and National City Bank, N.A. dated January 1, 1992 on behalf of Non-employee Directors of the Company (filed as Exhibit 10k to the Company's Form 10-K Annual Report for the year ended December 31, 1992, Commission File No. 1-7006), incorporated herein by reference.

- (10j)* Incentive Compensation Plan adopted December 16, 1991, January 1, 1992 (filed as Exhibit 10l to the Company's Form 10-K Annual Report for the year ended December 31, 1991, Commission File No. 1-7006), incorporated herein by reference.
- (10k)* Supplemental Retirement Plan as amended and restated December 1, 1992 (filed as Exhibit 10n to the Company's Form 10-K Annual Report for the year ended December 31, 1992, Commission File No. 1-7006), incorporated herein by reference.
- (10l)* Amendment Number 2, adopted January 1, 1996, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992 (filed as Exhibit 10o to the Company's Form 10-K Annual Report for the year ended December 31, 1995, Commission File No. 1-7006), incorporated herein by reference.
- (10m)* Amendment Number 3, adopted May 5, 1998, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992 (filed as Exhibit 10s to the Company's Form 10-K Annual Report for the year ended December 31, 1998), incorporated herein by reference.
- (10n)* Amendment Number 4, adopted December 1, 1998, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992 (filed as Exhibit 10t to the Company's Form 10-K Annual Report for the year ended December 31, 1998), incorporated herein by reference.
- (10o)* Amendment Number 5, adopted December 31, 1998, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992 (filed as Exhibit 10u to the Company's Form 10-K Annual Report for the year ended December 31, 1998), incorporated herein by reference.
- (10p)* Amendment Number 6, adopted September, 1999, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992. (filed as Exhibit 10u to the Company's Form 10-K Annual Report for the year ended December 31, 2000, Commission File No. 1-7006), incorporated herein by reference.
- (10q)* Amendment Number 7, adopted May, 2000, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992. (filed as Exhibit 10v to the Company's Form 10-K Annual Report for the year ended December 31, 2000, Commission File No. 1-7006), incorporated herein by reference.
- (10r)* Amendment Number 8, adopted December 21, 2001, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992. (filed as Exhibit 10-u to the Company's Form 10-K Annual Report for the year ended December 31, 1994, Commission File No. 1-7006), incorporated herein by reference.
- (10s)* Amendment Number 9, adopted December 22, 2003, to Supplemental Retirement Benefit Plan as amended and restated December 1, 1992.
- (10t)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) Key Employee Share Option Plan (filed as Exhibit 4.1 to the Registration Statement on Form S-8 filed by Brush Wellman Inc. on May 5, 1998), incorporated herein by reference.
- (10u)* Amendment No. 1 to the Brush Engineered Materials Inc. Key Employee Share Option Plan dated May 17, 2000 (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 333-52141), incorporated herein by reference.
- (10v)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1979 Stock Option Plan, as amended pursuant to approval of shareholders on April 21, 1982 (filed by Brush Wellman Inc. as Exhibit 15A to Post-Effective Amendment No. 3 to Registration Statement No. 2-64080), incorporated herein by reference.
- (10w)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. 1979 Stock Option Plan (filed as Exhibit 4b to Post-Effective Amendment No. 5 to Registration Statement No. 2-64080), incorporated herein by reference.
- (10x)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1984 Stock Option Plan as amended by the Board of Directors on April 18, 1984 and February 24, 1987 (filed by Brush Wellman Inc. as Exhibit 4.4 to Registration Statement No. 33-28605), incorporated herein by reference.

- (10y)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. 1984 Stock Option Plan (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 2-90724), incorporated herein by reference.
- (10z)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1989 Stock Option Plan (filed by Brush Wellman Inc. as Exhibit 4.5 to Registration Statement No. 33-28605), incorporated herein by reference.
- (10aa)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. 1989 Stock Option Plan (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 33-28605), incorporated herein by reference.
- (10bb)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1995 Stock Incentive Plan as Amended March 3, 1998 (filed by Brush Wellman Inc. as Exhibit A to the Company's Proxy Statement dated March 16, 1998, Commission File No. 1-7006), incorporated herein by reference.
- (10cc)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. 1995 Stock Incentive Plan (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 333-63357), incorporated herein by reference.
- (10dd)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1997 Stock Incentive Plan for Non-employee Directors (filed by Brush Wellman Inc. as Exhibit B to the Company's Proxy Statement dated March 16, 1998, Commission File No. 1-7006), incorporated herein by reference.
- (10ee)* Amendment, dated May 17, 2000, to the Brush Engineered Materials Inc. 1997 Stock Incentive Plan for Non-employee Directors (filed as Exhibit 4b to Post-Effective Amendment No. 1 to Registration Statement No. 333-63355), incorporated herein by reference.
- (10ff)* Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) 1997 Stock Incentive Plan for Non-employee Directors (filed as Appendix B to the Company's Proxy Statement dated March 18, 2001, Commission File No. 1-7006), incorporated herein by reference.
- (10gg)* Amendment No. 1 to the Brush Engineered Materials Inc. 1997 Stock Incentive Plan for Non-employee Directors.
- (10hh)* Brush Engineered Materials Inc. Executive Deferred Compensation Plan (2000 Restatement). (filed as Exhibit 10jj to the Company's Form 10-K Annual Report for the year ended December 31, 2000), incorporated herein by reference.
- (10ii)* Trust Agreement for Brush Engineered Materials Inc. (formerly Brush Wellman Inc.) Executive Deferred Compensation Plan, dated September 14, 1999 (filed as Exhibit 10hh to the Company's Form 10-K Annual Report for the year ended December 31, 1999), incorporated herein by reference.
- (10jj) Lease dated as of October 1, 1996, between Brush Wellman Inc. and Toledo-Lucas County Port Authority (filed as Exhibit 10v to the Company's Form 10-K Annual Report for the year ended December 31, 1996), incorporated herein by reference.
- (10kk) Brush Engineered Materials Inc. Restated Pension Plan, dated June 1, 2000 (filed as Exhibit 10qq to the Company's Form 10-K Annual Report for the year ended December 31, 2002), incorporated herein by reference.
- (10ll) Amendment No. 1 dated as of February 26, 2003 to the Brush Engineered Materials Inc. Restated Pension Plan dated June 1, 2000 (filed as Exhibit 10rr to the Company's Form 10-K Annual Report for the year ended December 31, 2002), incorporated herein by reference.
- (10mm) Amended and Restated Inducement Agreement with the Prudential Insurance Company of America dated May 30, 2003 (filed as Exhibit 10 to the Company's Form 10-Q Quarterly Report for the quarter ended June 27, 2003), incorporated herein by reference.

- (10nn) Amended and Restated Supply Agreement between RWE Nukem, Inc. and Brush Wellman Inc. for the sale and purchase of beryllium products (filed as Exhibit 10 to the Company's Form 10-Q Quarterly Report for the quarter ended September 26, 2003), incorporated herein by reference.
 - (13) Annual report to shareholders for the year ended December 31, 2003
 - (21) Subsidiaries of the Registrant
 - (23) Consent of Ernst & Young LLP
 - (24) Power of Attorney
 - (31) Certification of Chief Executive Officer and Chief Financial Officer required by rule 13a-14(a) or 15d-14(a)
 - (32) Certification of Chief Executive Officer and Chief Financial Officer required by 18 U.S.C. Section 1350
-

* Reflects management contract or other compensatory arrangement required to be filed as an Exhibit pursuant to Item 15(c) of this Report.

(b) REPORTS ON FORM 8-K

In a report on Form 8-K filed October 23, 2003, Brush Engineered Materials Inc. incorporated in Item 12 its July October 23 press release, reporting on its earnings for the third quarter of 2003.

In a report on Form 8-K filed October 29, 2003, Brush Engineered Materials Inc. announced that the "Current Investor" section of its website had been updated.

In a report on Form 8-K filed December 5, 2003, Brush Engineered Materials Inc. issued a press release announcing it had completed the refinancing of its bank revolving credit and term loan.

In a report on Form 8-K filed December 16, 2003, Brush Engineered Materials Inc. filed the Guggenheim Corporate Funding, LLC credit document.

SIGNATURES

Pursuant to the requirements of Section 13 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

March 15, 2004

BRUSH ENGINEERED MATERIALS INC.

/s/ GORDON D. HARNETT

By: /s/ JOHN D. GRAMPA

Gordon D. Harnett
Chairman of the Board, President
and Chief Executive Officer

John D. Grampa
Vice President Finance
and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ GORDON D. HARNETT*

Chairman of the Board, President,
Chief Executive Officer and Director
(Principal Executive Officer)

March 15, 2004

Gordon D. Harnett*

/s/ JOHN D. GRAMPA

Vice President Finance and Chief Financial
Officer (Principal Financial and Accounting
Officer)

March 15, 2004

John D. Grampa

/s/ ALBERT C. BERSTICKER*

Director

March 15, 2004

Albert C. Bersticker

/s/ DAVID H. HOAG*

Director

March 15, 2004

David H. Hoag*

/s/ JOSEPH P. KEITHLEY*

Director

March 15, 2004

Joseph P. Keithley*

/s/ WILLIAM B. LAWRENCE*

Director

March 15, 2004

William B. Lawrence*

/s/ WILLIAM P. MADAR*

Director

March 15, 2004

William P. Madar*

/s/ WILLIAM G. PRYOR*

Director

March 15, 2004

William G. Pryor*

/s/ N. MOHAN REDDY*

Director

March 15, 2004

N. Mohan Reddy*

/s/ WILLIAM R. ROBERTSON*

Director

March 15, 2004

William R. Robertson*

/s/ JOHN SHERWIN, JR.*

Director

March 15, 2004

John Sherwin, Jr.*

*The undersigned, by signing his name hereto, does sign and execute this report on behalf of each of the above-named officers and directors of Brush Engineered Materials Inc., pursuant to Powers of Attorney executed by each such officer and director filed with the Securities and Exchange Commission.

By: /s/ JOHN D. GRAMPA

March 15, 2004

John D. Grampa
Attorney-in-Fact

SCHEDULE II -- VALUATION AND QUALIFYING ACCOUNTS

BRUSH ENGINEERED MATERIALS INC. AND SUBSIDIARIES YEARS ENDED DECEMBER 31, 2003, 2002 AND 2001

COL. A	COL. B	COL. C		COL. D	COL. E
-----	-----	-----		-----	-----
		ADDITIONS			

	BALANCE AT	(1)	(2)		
DESCRIPTION	BEGINNING	CHARGED TO COSTS	CHARGED TO OTHER	DEDUCTION --	BALANCE AT END
-----	OF PERIOD	AND EXPENSES	ACCOUNTS -- DESCRIBE	DESCRIBE	OF PERIOD
-----	-----	-----	-----	-----	-----
Year ended December 31, 2003					
Deducted from asset accounts:					
Allowance for doubtful					
accounts receivable.....	\$1,316,645	\$ 768,914	\$0	\$ 658,295 (A)	\$1,427,264
Inventory reserves and					
obsolescence.....	\$3,843,000	\$2,573,000	\$0	\$2,115,000 (B)	\$4,301,000
Year ended December 31, 2002					
Deducted from asset accounts:					
Allowance for doubtful					
accounts receivable.....	\$1,513,607	\$ 346,287	\$0	\$ 543,249 (A)	\$1,316,645
Inventory reserves and					
obsolescence.....	\$4,707,000	\$3,598,000	\$0	\$4,462,000 (B)	\$3,843,000
Year ended December 31, 2001					
Deducted from asset accounts:					
Allowance for doubtful					
accounts receivable.....	\$1,676,666	\$ 39,814	\$0	\$ 202,873 (A)	\$1,513,607
Inventory reserves and					
obsolescence.....	\$4,843,000	\$1,959,000	\$0	\$1,501,000 (B)	\$4,301,000

Note A -- Bad debts written-off, net of recoveries.

Note B -- Inventory write-off.

EXHIBIT 4(f)

**FIRST AMENDMENT TO
CREDIT AGREEMENT**

This FIRST AMENDMENT TO CREDIT AGREEMENT (this "Amendment") is entered into on March 1, 2004 and made effective as of December 4, 2003 (the "Effective Date"), by and among Brush Engineered Materials Inc., an Ohio corporation (the "Company"), the other Borrowers (as defined in the Credit Agreement (as defined below)), the other Loan Parties (as defined in the Credit Agreement), the Lenders (as defined in the Credit Agreement), and Bank One, NA, a national banking association (the "Agent").

WHEREAS, the Company, the other Borrowers, the other Loan Parties, the Lenders, and the Agent entered into a certain Credit Agreement dated as of the Effective Date (as may from time to time be amended, restated, modified, or supplemented, the "Credit Agreement");

WHEREAS, the Company, the other Borrowers, the other Loan Parties, the Lenders, and the Agent desire to clarify certain provisions and correct certain typographical and other minor errors in the Credit Agreement so that, as modified by this Amendment, the Credit Agreement reflects the intent of the parties thereto as of the Effective Date (i.e., the Closing Date (as defined in the Credit Agreement));

WHEREAS, the Company, the other Borrowers, the other Loan Parties, the Lenders, and the Agent have agreed to amend the Credit Agreement as set forth herein; and

WHEREAS, the defined terms used but not defined herein shall have the meanings ascribed to such terms in the Credit Agreement;

NOW, THEREFORE, for valuable consideration received to their mutual satisfaction, the parties hereby agree as follows:

1. Amendment to Article I - Revised Definitions. The definitions "LC Obligations," and "Loan Documents" in Article I of the Credit Agreement are hereby deleted in their entirety and replaced with the following:

"LC Obligations" means, at any time, the sum, without duplication, of (a) the aggregate undrawn stated amount under all Facility LCs outstanding at such time, including, without limitation, the IRB Facility LCs, plus (b) the aggregate unpaid amount at such time of all Reimbursement Obligations.

"Loan Documents" means this Agreement, any Notes, the Facility LC Applications, the Collateral Documents, the Guaranty, the Export-Import Loan Documents, the Intercreditor Agreements, the LC Reimbursement Agreements, the IRB Facility LCs, the LC Bond Pledge Agreements, and all other agreements, instruments, documents and certificates identified in

Section 4.1 executed and delivered to, or in favor of, Agent or any Lenders and including all other pledges, powers of attorney, consents, assignments, contracts, notices, letter of credit agreements and all other written matter whether heretofore, now or hereafter executed by or on behalf of any Loan Party, or any Authorized Officer of any Loan Party, and delivered to the Agent or any Lender in connection with the Agreement or the transactions contemplated thereby. Any reference in the Agreement or any other Loan Document to a Loan Document shall include all appendices, exhibits or schedules thereto, and all amendments, restatements, supplements or other modifications thereto, and shall refer to the Agreement or such Loan Document as the same may be in effect at any and all times such reference becomes operative.

2. Amendment to Article I -- New Definitions. The definitions "Domestic Obligations," "IRB Facility LCs" and "LC Reimbursement Agreements" are hereby added to Article I of the Credit Agreement in proper alphabetical order:

"Domestic Obligations" means all of the Obligations other than the Singapore Obligations.

"IRB Facility LCs" means, collectively, all commercial or stand-by letters of credit issued by the LC Issuer at the request of the Borrower for the purpose of providing credit support for one or more industrial revenue development bond issues, the proceeds of which issues are used by or loaned to one or more Domestic Borrowers for the purpose of financing one or more industrial, manufacturing, or similar development projects, including, in each case, any amendments, modifications, supplements, or replacements.

"LC Bond Pledge Agreements" means, collectively, all bond pledge agreements entered into by one or more Domestic Borrowers, the LC Issuer, and the applicable bond trustees to secure the Reimbursement Obligations associated with any particular IRB Facility LC or LC Reimbursement Agreement, including, in each case, any amendments, modifications, supplements, or replacements.

"LC Reimbursement Agreements" means, collectively, all reimbursement agreements entered into by one or more Domestic Borrowers and the LC Issuer to further evidence the Reimbursement Obligations associated with any particular IRB Facility LC, including, in each case, any amendments, modifications, supplements, or replacements.

3. Amendment concerning the Defined Term "Aggregate Revolving Commitment"

(a) Sections 2.15(b), 2.15(c), 2.15(d), 6.7(c), and 8.1(a) of the Credit Agreement are hereby amended by deleting the text "Revolving Commitment" therein and replacing it with "Aggregate Revolving Commitment".

(b) Sections 12.3(a) and 12.3(b) of the Credit Agreement are hereby amended by deleting the text "Revolving Commitment" therein and replacing it with "a portion of the Aggregate Revolving Commitment".

(c) Section 12.6 of the Credit Agreement is hereby amended by deleting the text "Revolving Commitment" therein and replacing it with "share of the Aggregate Revolving Commitment".

4. Amendment to Section 2.1.2. Section 2.1.2(a) of the Credit Agreement is hereby amended by deleting the first sentence therein and replacing it with the following:

The LC Issuer hereby agrees, on the terms and conditions set forth in this Agreement, to issue to a Domestic Loan Party standby and commercial Letters of Credit, including, without limitation, the IRB Facility LCs (each, a "Facility LC") and to renew, extend, increase, decrease or otherwise modify each Facility LC ("Modify," and each such action a "Modification"), from time to time from and including the Closing Date of this Agreement and prior to the Facility Termination Date upon the request of the Company, on behalf of itself or the applicable Loan Party; provided that, the maximum face amount of the Facility LC to be issued or Modified, does not exceed the lesser of (i) an amount equal to \$25,000,000 minus the sum of (A) the aggregate undrawn amount of all outstanding Facility LCs at such time plus, without duplication, (B) the aggregate unpaid Reimbursement Obligations with respect to all Facility LCs outstanding at such time and (ii) the Domestic Availability.

5. Amendment to Section 2.11. Section 2.11(a) of the Credit Agreement is hereby amended by deleting the first and last sentences therein and replacing them, respectively, with the following:

Each Floating Rate Advance shall bear interest on the outstanding principal amount thereof, for each day from and including the date such Advance is made or is automatically converted from a Fixed Rate Advance into a Floating Rate Advance pursuant to Section 2.7, to but excluding the date it is paid or is converted into a Fixed Rate Advance pursuant to Section 2.7 hereof, at a rate per annum equal to the Floating Rate or Singapore Derived Floating Rate, as the case may be, for such day.

If at any time Loans are outstanding with respect to which the Company has not delivered a notice to the Applicable Agent specifying the

basis for determining the interest rate applicable thereto, those Loans shall bear interest at the Floating Rate or the Singapore Derived Floating Rate, as the case may be.

6. Amendment to Section 6.20. Section 6.20(1) of the Credit Agreement is hereby amended by deleting the text "\$500,000" therein and replacing it with "\$1,000,000".

7. Amendment to Section 8.1. Section 8.1(a)(i) of the Credit Agreement is hereby amended by deleting the text "Singapore Commitment" therein and replacing it with "Aggregate Singapore Commitment".

8. Amendment to Section 9.16. Section 9.16 of the Credit Agreement is hereby amended in its entirety and replaced with the following:

9.16 No Cross Collateralization. For the avoidance of doubt, the parties hereto agree that the Collateral of the Singapore Loan Parties securing the Secured Obligations of the Singapore Loan Parties shall not constitute security for the Domestic Obligations.

9. Amendment to Section 16.2. Section 16.2 of the Credit Agreement is hereby amended by deleting the second sentence therein and replacing it with the following:

Upon the occurrence and during the continuance of a Default which has not been waived in writing, all such deposits to the Cash Management Account in respect of a Borrower shall be credited to such Borrower as follows: (1) to the extent such deposits constitute the proceeds of the Export-Import Collateral, such deposits shall be applied directly to the outstanding principal, accrued and unpaid interest, and fees related to the Export-Import Loan and (2) all deposits other than those described in the immediately preceding subparagraph (1) (except to the extent such deposits remain after the Export-Import Loan is indefeasibly paid in full), (a) first to the payment of any fees, expenses or Obligations (other than Obligations to pay (i) principal and interest relating to the Advances and (ii) principal, accrued and unpaid interest, and fees related to the Export-Import Loan) then due and payable by the Borrowers to the Applicable Agent or Lenders hereunder or under any of the other Loan Documents; (b) second, to the ratable payment of interest due on the Loans made to the Borrowers (other than interest related to the Export-Import Loan); (c) third, to late charges until paid in full; (d) fourth, to the principal installments then due and payable with respect to the Term Loans; (e) fifth, to the outstanding principal amount of any Revolving Loans; (f) sixth, at the Required Lenders' option, in their sole and absolute discretion, to any and all other outstanding Obligations of the Borrowers (other than in respect of the (i) aggregate undrawn amount of any Facility LC outstanding for the account of the Borrowers and (ii) principal,

accrued and unpaid interest, and fees related to the Export-Import Loan) in such order as the Required Lenders may choose in their sole discretion; and (g) seventh, as cash collateral security against the aggregate undrawn amount of any Letter of Credit outstanding for the account of the Borrowers and any other Obligations (whether then or thereafter outstanding, including, without limitation, to the extent not indefeasibly paid in full by the deposits described in subparagraph (1) above, the Export-Import Loan) of the Borrowers.

10. Amendment to Section 16.2. Section 16.2 of the Credit Agreement is hereby amended by adding the following sentence the end of such section:

Notwithstanding the foregoing, (a) all deposits received in the Locked Box in Singapore shall be applied to the Singapore Obligations in the order set forth above, and (b) all deposits received in the Locked Box located in the United States shall be applied first to the Domestic Obligations in the order set forth above and then to the Singapore Obligations in the order set forth above.

11. Amendment to the Pricing Schedule. The Pricing Schedule attached to the Credit Agreement is hereby amended by deleting the text "Fixed Charge Coverage Ratio" from the first row, second column and replacing it with "Leverage Ratio".

12. General Terms. This Amendment shall be effective as of the Effective Date. Except as specifically amended herein, directly or by reference, all of the terms and conditions set forth in the Credit Agreement are confirmed and ratified, and shall remain as originally written. This Amendment shall be construed in accordance with the laws of the State of Ohio, without regard to principles of conflict of laws. The Credit Agreement and all other Loan Documents shall remain in full force and effect in all respects as if the unpaid balance of the principal outstanding, together with interest accrued thereon, had originally been payable and secured as provided for therein, as amended from time to time and as modified by this Amendment. Nothing herein shall affect or impair any rights and powers which the Company, any other Borrower, any Loan Party, any Lender or the Agent may have under the Credit Agreement and any and all other Loan Documents.

13. No Effect. The parties hereto agree that this Amendment shall in no manner affect or impair the liens and security interests evidenced by the Credit Agreement and/or any other instruments evidencing, securing or related to the Obligations.

14. Counterparts. This Amendment may be executed in counterparts and all such counterparts shall constitute one agreement binding on all the parties, notwithstanding that the parties are not signatories to the same counterpart.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Company, the other Borrowers, the Lenders and the Agent have executed this Amendment as of the date first above written.

BORROWERS:

BRUSH ENGINEERED MATERIALS INC.

By: _____
Name: _____
Title: _____

BEM SERVICES, INC.

By: _____
Name: _____
Title: _____

BRUSH INTERNATIONAL, INC.

By: _____
Name: _____
Title: _____

BRUSH WELLMAN INC.

By: _____
Name: _____
Title: _____

ZENTRIX TECHNOLOGIES INC.

By: _____
Name: _____
Title: _____

BRUSH RESOURCES INC.

By: _____
Name: _____
Title: _____

BRUSH CERAMIC PRODUCTS INC.

By: _____
Name: _____
Title: _____

CIRCUITS PROCESSING TECHNOLOGY, INC.

By: _____
Name: _____
Title: _____

TECHNICAL MATERIALS, INC.

By: _____
Name: _____
Title: _____

WILLIAMS ADVANCED MATERIALS INC.

By: _____
Name: _____
Title: _____

WILLIAMS ACQUISITION, LLC

By: _____
Name: _____
Title: _____

SINGAPORE BORROWER:

BRUSH WELLMAN (SINGAPORE) PTE LTD.

By:

Name: Tony Ong Wee Swez

Title: Managing Director

Address: c/o Brush Engineered Materials, Inc.
17876 St. Clair Avenue
Cleveland, Ohio 44110

LENDERS:

BANK ONE, NA

Individually, as the Agent, a Lender and LC Issuer

By:

Name: Joseph J. Virzi

Title: Senior Vice President

Address: 100 East Broad Street
Columbus, OH 43215

Attention: Randy R. Radik
Telephone: (330) 972-1206
Facsimile: (330) 972-1456

BANK ONE, NA Singapore Branch
as a Lender

By: _____

Name: Joseph J. Virzi
Title: Senior Vice President

Address: 100 East Broad Street
Columbus, OH 43215

Attention: Randy R. Radik
Telephone: (330) 972-1206
Facsimile: (330) 972-1456

LASALLE BANK NATIONAL ASSOCIATION
as a Lender

By: _____

Name: Patrick F. Dunphy
Title: First Vice President

Address : 1300 E. 9th Street, Suite 1000
Cleveland, OH 44114

Attention: Jeri Zimmerman
Telephone: (216) 802-2200
Facsimile: (216) 802-2212

RZB FINANCE LLC
as a Lender

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Address : 24 Grassy Plain Street
Bethel, CT 06801
Attention: Marisa Mancini
Telephone: (203) 207-0115
Facsimile: (203) 744-6474

THE CIT GROUP/BUSINESS CREDIT, INC.
as a Lender

By: -----

Name: Douglas A. Nickel
Title: Vice President

Address : Two Wachovia Center, 23rd Fl.
301 S. Tryon Street
P.O. Box 30337
Charlotte, NC 28239-0337

Attention: Robert Newman, Vice President
Telephone: (704) 339-3044
Facsimile: (704) 339-2208

FIFTH THIRD BANK
as a Lender

By: -----

Name: Ken Horner
Title: Vice President

Address : 1404 East Ninth Street, 3rd Floor
Mail Drop: A65111
Cleveland, OH 44114

Attention: Ken Horner
Vice President
Telephone: (216) 274-5579
Facsimile: (216) 274-5441

ORIX FINANCIAL SERVICES, INC.
as a Lender

By: _____
Name: _____
Title: _____

Address : One South Wacker, Suite 2750
Chicago, IL 60606
Attention: Jonathan Millard
Telephone: (312) 469-5081
Facsimile: (770) 970-8181

Exhibit (4h)

WARRANT

To Purchase Common Stock of

BRUSH ENGINEERED MATERIALS INC.

THIS WARRANT AND THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE TRANSFERRED IN VIOLATION OF SUCH ACT, THE RULES AND REGULATIONS THEREUNDER OR THE PROVISIONS OF THIS WARRANT.

No. of Shares of Common Stock: 78,571 No. 3

WARRANT

To Purchase Common Stock of

BRUSH ENGINEERED MATERIALS INC.

THIS IS TO CERTIFY THAT, UPPER COLUMBIA CAPITAL COMPANY, LLC, or registered assigns, is entitled, at any time prior to the Expiration Date (as hereinafter defined), to purchase from BRUSH ENGINEERED MATERIALS INC., an Ohio corporation ("Company"), 78,571 shares of Common Stock (as hereinafter defined and subject to adjustment as provided herein), in whole or in part, including fractional parts, at a purchase price of \$0.01 per share, all on the terms and conditions and pursuant to the provisions hereinafter set forth.

1. DEFINITIONS

As used in this Warrant, the following terms have the respective meanings set forth below (all capitalized used herein and not defined shall have the same meanings ascribed to them in the Loan Agreement):

"Additional Shares of Common Stock" shall mean all shares of Common Stock issued by Company after the Closing Date, other than Warrant Stock.

"Commission" shall mean the Securities and Exchange Commission or any other federal agency then administering the Securities Act and other federal securities laws.

"Common Stock" shall mean (except where the context otherwise indicates) the Common Stock, no par value per share, of Company as constituted on the Closing Date, and any capital stock into which such Common Stock may thereafter be changed, and shall also include (i) capital stock of Company of any other class (regardless of how denominated) issued to the holders of shares of Common Stock upon any reclassification thereof which is also not preferred as to dividends or assets over any other class of stock of Company and which is not subject to redemption and (ii) shares of common stock of any successor or acquiring corporation received by or distributed to the holders of Common Stock of Company.

"Convertible Securities" shall mean evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable, with or without payment of additional consideration in cash or property, for Additional Shares of Common Stock, either immediately or upon the occurrence of a specified date or a specified event.

"Current Market Price" shall mean, in respect of any share of Common Stock on any date herein specified, (a) if there shall then be a public market for the Common Stock, the average of

the daily market prices for 10 consecutive Business Days commencing 10 Business Days before such date. The daily market price for each such Business Day shall be (i) the last sale price on such day on the principal stock exchange or NASDAQ Stock Market ("NASDAQ") on which such Common Stock is then listed or admitted to trading, (ii) if no sale takes place on such day on any such exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day as officially quoted on any such exchange or NASDAQ, (iii) if the Common Stock is not then listed or admitted to trading on any stock exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day in the over-the-counter market, as furnished by the National Association of Securities Dealers Automatic Quotation System or the National Quotation Bureau, Inc., (iv) if neither such corporation at the time is engaged in the business of reporting such prices, as furnished by any similar firm then engaged in such business, or (v) if there is no such firm, as furnished by any member of the NASD selected mutually by the Majority Holders and Company or, if they cannot agree upon such selection, as selected by two such members of the NASD, one of which shall be selected by the Majority Holders and one of which shall be selected by Company, or (b) if there is no such public market, the fair market value thereof as determined in good faith by Company's Board of Directors.

"Current Warrant Price" shall mean, in respect of a share of Common Stock at any date herein specified, the price at which a share of Common Stock may be purchased pursuant to this Warrant on such date.

"Demand Notice" shall have the meaning set forth in Section 9.3(a).

"Demand Registration Period" shall mean any period of time during which Company is eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto during the period beginning on the date of this Warrant and ending on the first anniversary of this Warrant.

"Disadvantageous Condition" shall mean, at any time, the existence of a condition such that the filing of a registration statement or the use of an effective registration to make resales would (i) interfere with or affect the negotiation or completion of any plan or proposal by Company to engage in any significant transaction at such time or (ii) require disclosure of information that the Company has a bona fide business purpose for preserving as confidential.

"Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect from time to time.

"Exercise Period" shall mean the period during which this Warrant is exercisable pursuant to Section 2.1.

"Expiration Date" shall mean December 5, 2008.

"Filing Date" shall mean the earlier of (i) the date on which Company has filed with the Commission its Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and (ii) March 31, 2004.

"Guggenheim" shall mean any affiliates of Guggenheim Corporate Funding, LLC who hold Warrants or Warrant Stock.

"Holder" shall mean the Person in whose name the Warrant set forth herein is registered on the books of Company maintained for such purpose.

"Loan Agreement" shall mean the Loan Agreement dated as of December 4, 2003, by and among Company, the other credit parties party thereto as guarantors, the lenders named therein and Guggenheim Corporate Funding, LLC, as collateral agent for such lenders, as amended, supplemented or otherwise modified from time to time.

"Majority Holders" shall mean the holders of Warrants exercisable for in excess of 50% of the aggregate number of shares of Common Stock then purchasable upon exercise of all Warrants, whether or not then exercisable.

"NASD" shall mean the National Association of Securities Dealers, Inc., or any successor corporation thereto.

"Other Property" shall have the meaning set forth in Section 4.3.

"Outstanding" shall mean, when used with reference to Common Stock, at any date as of which the number of shares thereof is to be determined, all issued shares of Common Stock, except shares then owned or held by or for the account of Company or any subsidiary thereof, and shall include all shares issuable in respect of outstanding scrip or any certificates representing fractional interests in shares of Common Stock.

"Restricted Common Stock" shall mean shares of Common Stock which are, or which upon their issuance on the exercise of this Warrant would be, evidenced by a certificate bearing the restrictive legend set forth in Section 9.1(a).

"Securities Act" shall mean the Securities Act of 1933, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect at the time.

"Transfer" shall mean any disposition of any Warrant or Warrant Stock or of any interest in either thereof, which would constitute a sale thereof within the meaning of the Securities Act.

"Transfer Notice" shall have the meaning set forth in Section 9.2.

"Warrants" shall mean this Warrant and all other Warrants issued pursuant to the Loan Agreement, and all warrants issued upon transfer, division or combination of, or in substitution for, any thereof. All Warrants shall at all times be identical as to terms and conditions and date, except as to the number of shares of Common Stock for which they may be exercised.

"Warrant Price" shall mean an amount equal to (i) the number of shares of Common Stock being purchased upon exercise of this Warrant pursuant to Section 2.1, multiplied by (ii) the Current Warrant Price as of the date of such exercise.

"Warrant Stock" shall mean the shares of Common Stock purchased by the holders of the Warrants upon the exercise thereof.

2. EXERCISE OF WARRANT

2.1. Manner of Exercise. From and after the Closing Date and until 5:00 P.M., New York time, on the Expiration Date, Holder may exercise this Warrant, on any Business Day, for all or any part of the number of shares of Common Stock purchasable hereunder.

In order to exercise this Warrant, in whole or in part, Holder shall deliver to Company at its principal office at 17876 St. Clair Avenue, Cleveland, Ohio 44110, or at the office or agency designated by Company pursuant to Section 12, (i) a written notice of Holder's election to exercise this Warrant, which notice shall specify the number of shares of Common Stock to be purchased, (ii) payment of the Warrant Price and (iii) this Warrant. Such notice shall be substantially in the form of the subscription form appearing at the end of this Warrant as Exhibit A, duly executed by Holder or its agent or attorney. Upon receipt thereof, Company shall, as promptly as practicable, and in any event within ten (10) Business Days thereafter, execute or cause to be executed and deliver or cause to be delivered to Holder a certificate or certificates representing the aggregate number of full shares of Common Stock issuable upon such exercise. The stock certificate or certificates so delivered shall be, to the extent possible, in such denomination or denominations as such Holder shall request in the notice and shall be registered in the name of Holder or, subject to Section 9, such other name as shall be designated in the notice. This Warrant shall be deemed to have been exercised and such certificate or certificates shall be deemed to have been issued, and Holder or any other Person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the notice is received by Company so long as the cash or check or other payment provided below and this Warrant are received by Company promptly thereafter and all taxes required to be paid by Holder, if any, pursuant to Section 2.2 prior to the issuance of such shares have been paid. If this Warrant shall have been exercised in part, Company shall, at the time of delivery of the certificate or certificates representing Warrant Stock, deliver to Holder a new Warrant evidencing the rights of Holder to purchase the unpurchased shares of Common Stock called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant, or, at the request of Holder, appropriate notation may be made on this Warrant and the same returned to Holder. Notwithstanding any provision herein to the contrary, Company shall not be required to register shares in the name of any Person who acquired this Warrant (or part hereof) or any Warrant Stock otherwise than in accordance with this Warrant.

Payment of the Warrant Price shall be made at the option of the Holder by (i) check, and/or (ii) by the Holder's surrender to Company of that number of shares of Warrant Stock (or the right to receive such number of shares) or shares of Common Stock having an aggregate Current Market Price equal to or greater than the Current Warrant Price for all shares then being purchased (including those being surrendered), or (iii) any combination thereof, duly endorsed by or accompanied by appropriate instruments of transfer duly executed by Holder or by Holder's attorney duly authorized in writing.

2.2. Payment of Taxes. Company shall pay all expenses in connection with, and all taxes and other governmental charges that may be imposed with respect to, the issuance or

delivery of the shares of Common Stock issuable upon exercise of this Warrant, unless such tax or charge is imposed by law upon Holder, in which case such taxes or charges shall be paid by Holder. Company shall not be required, however, to pay any tax or other charge imposed in connection with any transfer involved in the issue of any certificate for shares of Common Stock issuable upon exercise of this Warrant in any name other than that of Holder, and in such case Company shall not be required to issue or deliver any stock certificate until such tax or other charge has been paid or it has been established to the reasonable satisfaction of Company that no such tax or other charge is due.

2.3. Fractional Shares. Company shall not be required to issue a fractional share of Common Stock upon exercise of any Warrant. If any fraction of a share of Common Stock would be deliverable upon exercise of this Warrant, Company may, in lieu of delivering such fractional share, (a) make a cash payment to the Holder in an amount equal to the same fraction of the Current Market Price determined as of the Business Day immediately preceding the date of exercise of this Warrant or (b) round up the number of shares to be delivered to the nearest whole share.

2.4. Continued Validity. A holder of shares of Common Stock issued upon the exercise of this Warrant, in whole or in part (other than a holder who acquires such shares after the same have been publicly sold pursuant to a registration statement under the Securities Act or sold pursuant to Rule 144 thereunder), shall continue with respect to such shares to be entitled to all rights and subject to all obligations to which it would have been entitled as Holder under Sections 9, 10 and 14 of this Warrant. Company will, at the time of each exercise of this Warrant, in whole or in part, upon the request of the holder of the shares of Common Stock issued upon such exercise hereof, acknowledge in writing, in form reasonably satisfactory to such holder, its continuing obligation to afford to such holder all such rights and obligations; provided, however, that if such holder shall fail to make any such request, such failure shall not affect the continuing obligation of Company to afford to such holder all such rights and obligations.

3. TRANSFER DIVISION AND COMBINATION

3.1. Transfer. Subject to compliance with Section 9, transfer of this Warrant, in whole or in part, and all attendant rights hereunder, shall be registered on the books of Company to be maintained for such purpose, upon surrender of this Warrant at the principal office of Company referred to in

Section 2.1 or the office or agency designated by Company pursuant to Section 12, together with a written assignment of this Warrant substantially in the form of Exhibit B hereto duly executed by Holder or its agent or attorney. Upon such surrender, Company shall, subject to Section 9, execute and deliver a new Warrant or Warrants in the name of the assignee or assignees and in the denomination specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. A Warrant, if properly assigned in compliance with Section 9, may be exercised by a new Holder for the purchase of shares of Common Stock prior to the issuance of a new Warrant.

3.2. Division and Combination. Subject to Section 9, this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office or agency of

Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by Holder or its agent or attorney. Subject to compliance with Section 3.1 and with Section 9, as to any transfer which may be involved in such division or combination, Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice.

3.3. Expenses. Company shall prepare, issue and deliver at its own expense (other than transfer taxes) the new Warrant or Warrants under this Section 3.

3.4. Maintenance of Books. Company agrees to maintain, at its aforesaid office or agency, books for the registration and the registration of transfer of the Warrants.

4. ADJUSTMENTS

The number of shares of Common Stock for which this Warrant is exercisable, or the price at which such shares may be purchased upon exercise of this Warrant, shall be subject to adjustment from time to time as set forth in this Section 4.

4.1. Stock Dividends Subdivisions and Combinations. If at any time Company shall:

(a) take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend payable in, or other distribution of, Additional Shares of Common Stock,

(b) subdivide its outstanding shares of Common Stock into a larger number of shares of Common Stock, or

(c) combine its outstanding shares of Common Stock into a smaller number of shares of Common Stock,

then (i) the number of shares of Common Stock for which this Warrant is exercisable immediately after the occurrence of any such event shall be adjusted to equal the number of shares of Common Stock which a record holder of the same number of shares of Common Stock for which this Warrant is exercisable immediately prior to the occurrence of such event would own or be entitled to receive after the happening of such event, and (ii) the Current Warrant Price shall be adjusted to equal (A) the Current Warrant Price multiplied by the number of shares of Common Stock for which this Warrant is exercisable immediately prior to the adjustment divided by (B) the number of shares for which this Warrant is exercisable immediately after such adjustment.

4.2. Certain Other Distributions. If at any time Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive any dividend or other distribution of:

(a) cash,

(b) any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock), or

(c) any warrants or other rights to subscribe for or purchase any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock),

Holder shall be entitled to receive such dividend or distribution upon exercise of the Warrant as if Holder had exercised the Warrant at the time of the taking of such record.

4.3. Reorganization Reclassification Merger Consolidation or Disposition of Assets. In case Company shall reorganize its capital, reclassify its capital stock, consolidate or merge with or into another Person (where Company is not the surviving Person or where there is a change in or distribution with respect to the Common Stock of Company), or sell, transfer or otherwise dispose of all or substantially all its property, assets or business to another Person (any such transaction, a "Change of Control Transaction") and, pursuant to the terms of such reorganization, reclassification, merger, consolidation or disposition of assets, shares of common stock of the successor or acquiring Person, or any cash, shares of stock or other securities or property of any nature whatsoever (including warrants or other subscription or purchase rights) in addition to or in lieu of common stock of the successor or acquiring corporation ("Other Property"), are to be received by or distributed to the holders of Common Stock of Company, then each Holder shall have the right thereafter to receive, upon exercise of such Warrant, the number of shares of common stock of the successor or acquiring Person or of Company, if it is the surviving Person, and Other Property receivable upon or as a result of such reorganization, reclassification, merger, consolidation or disposition of assets by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such event. In case of any such reorganization, reclassification, merger, consolidation or disposition of assets, the successor or acquiring Person (if other than Company) shall expressly assume the due and punctual observance and performance of each and every covenant and condition of this Warrant to be performed and observed by Company and all the obligations and liabilities hereunder, subject to such modifications as may be deemed appropriate (as determined by resolution of the Board of Directors of Company) in order to provide for adjustments of shares of Common Stock for which this Warrant is exercisable which shall be as nearly equivalent as practicable to the adjustments provided for in this Section 4. For purposes of this Section 4.3, "common stock of the successor or acquiring Person" shall include stock of such Person of any class which is not preferred as to dividends or assets over any other class of stock of such corporation and which is not subject to redemption and shall also include any evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable for any such stock, either immediately or upon the arrival of a specified date or the happening of a specified event and any warrants or other rights to subscribe for or purchase any such stock. The foregoing provisions of this Section 4.3 shall similarly apply to successive reorganizations, reclassifications, mergers, consolidations or disposition of assets. Notwithstanding the foregoing, if any Change of Control Transaction occurs at any time that all obligations under the Loan Agreement are satisfied and the Loan Agreement is terminated, then each Holder shall be required to exercise its Warrant in connection with such Change of Control Transaction and be entitled to receive the Other Property issuable to holders of Common Stock of the Company.

4.4. Other Action Affecting Common Stock. In case at any time or from time to time Company shall take any action in respect of its Common Stock, other than any action described in this Section 4, then, unless such action will not have a materially adverse effect upon the rights of the Holders, the number of shares of Common Stock or other stock for which this Warrant is exercisable and/or the purchase price thereof shall be adjusted in such manner as may be equitable in the circumstances.

5. NOTICES TO WARRANT HOLDERS

5.1. Notice of Adjustments. Whenever the number of shares of Common Stock for which this Warrant is exercisable, or whenever the price at which a share of such Common Stock may be purchased upon exercise of the Warrants, shall be adjusted pursuant to Section 4, Company shall forthwith prepare a certificate to be executed by an executive officer of Company setting forth, in reasonable detail, the event requiring the adjustment and the method by which such adjustment was calculated, specifying the number of shares of Common Stock for which this Warrant is exercisable and (if such adjustment was made pursuant to Section 4.2 or 4.3) describing the number and kind of any other shares of stock or Other Property for which this Warrant is exercisable, and any change in the purchase price or prices thereof, after giving effect to such adjustment or change. Company shall promptly cause a signed copy of such certificate to be delivered to each Holder in accordance with Section 15.2. Company shall keep at its office or agency designated pursuant to Section 12 copies of all such certificates and cause the same to be available for inspection at said office during normal business hours by any Holder or any prospective purchaser of a Warrant designated by a Holder thereof.

5.2. Notice of Corporate Action. If at any time:

(a) Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend or other distribution, or any right to subscribe for or purchase any evidences of its indebtedness, any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) there shall be any capital reorganization of Company, any reclassification or recapitalization of the capital stock of Company or any consolidation or merger of Company with, or any sale, transfer or other disposition of all or substantially all the property, assets or business of Company to, another Person, or

(c) there shall be a voluntary or involuntary dissolution, liquidation or winding up of Company;

then, in any one or more of such cases, Company shall give to Holder (i) at least 30 days' prior written notice of the date on which a record date shall be selected for such dividend, distribution or right or for determining rights to vote in respect of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, and (ii) in the case of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, at least 30 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause also shall specify

(i) the date on which any such record is to be taken for the purpose of such

dividend, distribution or right, the date on which the holders of Common Stock shall be entitled to any such dividend, distribution or right, and the amount and character thereof, and (ii) the date on which any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up is to take place and the time, if any such time is to be fixed, as of which the holders of Common Stock shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up. Each such written notice shall be delivered to Holder in accordance with Section 15.2.

6. NO IMPAIRMENT

Company shall not intentionally take any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder against impairment. Without limiting the generality of the foregoing, Company will (a) take all such action necessary in order that Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, including such action as is necessary for the Current Warrant Price to be not less than the par value of the shares of Common Stock issuable upon exercise of this Warrant, and (b) use its commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable Company to perform its obligations under this Warrant.

7. RESERVATION AND AUTHORIZATION OF COMMON STOCK; REGISTRATION WITH OR APPROVAL OF ANY GOVERNMENTAL AUTHORITY

From and after the Closing Date, Company shall at all times reserve and keep available for issue upon the exercise of Warrants such number of its authorized but unissued shares of Common Stock as will be sufficient to permit the exercise in full of all outstanding Warrants. All shares of Common Stock which shall be so issuable, when issued upon exercise of any Warrant and payment therefor in accordance with the terms of such Warrant, shall be duly and validly issued and fully paid and nonassessable, and not subject to preemptive rights.

Before taking any action which would cause an adjustment reducing the Current Warrant Price below the then par value, if any, of the shares of Common Stock issuable upon exercise of the Warrants, Company shall take any corporate action which may be necessary in order that Company may validly and legally issue fully paid and non-assessable shares of such Common Stock at such adjusted Current Warrant Price. Before taking any action which would result in an adjustment in the number of shares of Common Stock for which this Warrant is exercisable or in the Current Warrant Price, Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

If any shares of Common Stock required to be reserved for issuance upon exercise of Warrants require registration or qualification with any governmental authority or other governmental approval or filing under any federal or state law (other than registration rights as provided in Section 9) before such shares may be so issued, Company will in good faith and as expeditiously as possible and at its expense endeavor to cause such shares to be duly registered.

8. TAKING OF RECORD STOCK AND WARRANT TRANSFER BOOKS

In the case of all dividends or other distributions by Company to the holders of its Common Stock with respect to which any provision of Section 4 refers to the taking of a record of such holders, Company will in each such case take such a record and will take such record as of the close of business on a Business Day. Company will not at any time, except upon dissolution, liquidation or winding up of Company, close its stock transfer books or warrant transfer books so as to result in preventing or delaying the exercise or transfer of any Warrant.

9. RESTRICTIONS ON TRANSFERABILITY

The Warrants and the Warrant Stock shall not be transferred, hypothecated or assigned before satisfaction of the conditions specified in this Section 9, which conditions are intended to ensure compliance with the provisions of the Securities Act with respect to the Transfer of any Warrant or any Warrant Stock. Holder, by acceptance of this Warrant, agrees to be bound by the provisions of this Section 9.

9.1. Restrictive Legend. (a) Except as otherwise provided in this

Section 9, each certificate for Warrant Stock initially issued upon the exercise of this Warrant, and each certificate for Warrant Stock issued to any subsequent transferee of any such certificate, shall be stamped or otherwise imprinted with a legend in substantially the following form:

"The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act or the rules and regulations thereunder."

(b) Except as otherwise provided in this Section 9, each Warrant shall be stamped or otherwise imprinted with a legend in substantially the following form:

"This Warrant and the securities represented hereby have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act, the rules and regulations thereunder or the provisions of this Warrant."

9.2. Notice of Proposed Transfers, Requests for Registration. Prior to or promptly following any Transfer of any Warrants or any shares of Restricted Common Stock, the holder of such Warrants or Restricted Common Stock shall give written notice (a "Transfer Notice") to Company of such Transfer accompanied by an opinion of counsel reasonably acceptable to Company, in form and substance reasonably acceptable to Company, to the effect that such Transfer will not be in violation of the Securities Act or any other applicable securities laws. Each certificate, if any, evidencing such shares of Restricted Common Stock issued upon such

Transfer shall bear the restrictive legend set forth in Section 9.1(a), and each Warrant issued upon such Transfer shall bear the restrictive legend set forth in

Section 9.1(b), unless in the opinion of counsel to such holder which is reasonably acceptable to Company such legend is not required in order to ensure compliance with the Securities Act.

The holders of Warrants and Warrant Stock shall have the right to request registration of such Warrant Stock pursuant to Section 9.3 and Section 9.4.

9.3. Demand Registration. (a) Subject to the provisions of this Section 9.3, on one occasion during the Demand Registration Period, the Majority Holders or Guggenheim may request by written notice (the "Demand Notice") to Company that Company register under the Securities Act the resale of such shares of Warrant Stock held by the Majority Holders or Guggenheim, as the case may be, pursuant to a registration statement on Form S-3 or any successor form thereto. Upon receipt of the Demand Notice, Company shall promptly notify all holders of Warrants and Warrant Stock in writing of the receipt of such Demand Notice and each such holder, in lieu of exercising its rights under Section 9.4, may elect by written notice to Company within 15 days after receipt of such notice from Company to have its shares of Warrant Stock included in such registration. In such event, and subject to the other provisions of this Section 9, Company shall use its commercially reasonable efforts to prepare documentation and effect registration under the Securities Act of all shares of the Warrant Stock that Company has been requested to register pursuant to this Section 9.3, all to the extent required to permit the disposition of such Warrant Stock in accordance with the intended methods of disposition of the holders thereof.

(b) Notwithstanding anything to the contrary in this Section 9.3, if Company determines reasonably and in good faith that a Disadvantageous Condition exists, (i) Company will have the right to defer the filing of a registration statement requested pursuant to this Section 9.3; provided, however, that in no event may Company defer filing hereunder for more than 45 days from the first date of such determination by Company and (ii) Company may suspend, for up to 45 days, use of a registration statement filed pursuant to this Section 9.3 that has been declared effective by the Commission. Company will provide notice to the holders of Warrants and Warrant Stock of the Company's determination that a Disadvantageous Condition exists. Company shall use its reasonable efforts to cause the period during which a registration statement filed pursuant to this Section 9.3 is to remain effective pursuant to Section 9.5 to be extended by the number of days of any such suspension on account of a Disadvantageous Condition.

(c) Notwithstanding anything to the contrary in this Section 9.3, Company will not be required to effect a registration pursuant to this Section 9.3, (i) unless Company is then eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto and (ii) in any particular jurisdiction in which Company would be required to execute a general consent to service of process in effecting such registration.

9.4. Incidental Registration. If Company at any time proposes to file on its behalf and/or on behalf of any of its security holders (the "demanding security holders") a registration statement under the Securities Act on any form (other than a registration statement on Form S-4 or S-8 or any successor form for securities to be offered in a transaction of the type referred to in

Rule 145 under the Securities Act or to employees of Company pursuant to any employee benefit plan, respectively) for the general registration of securities to be sold for cash with respect to its Common Stock or any other class of equity security (as defined in Section 3(a)(11) of the Exchange Act) of Company, it will give written notice to all holders of Warrants or Warrant Stock at least 30 days before the initial filing with the Commission of such registration statement, which notice shall set forth the intended method of disposition of the securities proposed to be registered by Company. The notice shall offer to include in such filing the aggregate number of shares of Warrant Stock, and the number of shares of Common Stock for which this Warrant is exercisable, as such holders may request.

Each holder of any such Warrants or any such Warrant Stock desiring to have Warrant Stock registered under this Section 9.4 shall advise Company in writing within 15 days after the date of receipt of such offer from Company, setting forth the amount of such Warrant Stock for which registration is requested. Company shall thereupon include in such filing the number of shares of Warrant Stock for which registration is so requested, subject to the next sentence, and shall use its best efforts to effect registration under the Securities Act of such shares. If the managing underwriter of a proposed public offering shall advise Company in writing that, in its opinion, the distribution of the Warrant Stock requested to be included in the registration concurrently with the securities being registered by Company or such demanding security holder would materially and adversely affect the distribution of such securities by Company or such demanding security holder, then all selling security holders shall reduce the amount of securities each intended to distribute through such offering on a pro rata basis.

9.5. Registration Procedures. If Company is required by the provisions of this Section 9 to use its commercially reasonable efforts to effect the registration of any of its securities under the Securities Act, Company will,

(i) in the case of a registration of securities pursuant to Section 9.3, as expeditiously as possible after the Filing Date, and (ii) in the case of a registration of securities pursuant to Section 9.4, as expeditiously as possible:

(a) prepare and file with the Commission a registration statement with respect to such securities and use its commercially reasonable efforts to cause such registration statement to become and remain effective for a period of time required for the disposition of such securities by the holders thereof, but not to exceed 120 days;

(b) prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the sale or other disposition of all securities covered by such registration statement until the earlier of such time as all of such securities have been disposed of in a public offering or the expiration of 120 days;

(c) furnish to such selling security holders such number of copies of a summary prospectus or other prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents, as such selling security holders may reasonably request;

(d) use its commercially reasonable efforts to register or qualify the securities covered by such registration statement under such other securities or blue sky laws of such jurisdictions within the United States and Puerto Rico as each holder of such securities shall reasonably request (provided, however, that Company shall not be obligated to qualify as a foreign corporation to do business under the laws of any jurisdiction in which it is not then qualified or to file any general consent to service or process), and do such other reasonable acts and things as may be required of it to enable such holder to consummate the disposition in such jurisdiction of the securities covered by such registration statement;

(e) furnish, at the request of any holder requesting registration of Warrant Stock pursuant to Section 9.3, on the date that such shares of Warrant Stock are delivered to the underwriters for sale pursuant to such registration, on the date that the registration statement with respect to such shares of Warrant Stock becomes effective, (1) an opinion, dated such date, of the independent counsel representing Company for the purposes of such registration, addressed to the underwriters in customary form and covering matters of the type customarily covered in such legal opinions; and (2) a comfort letter dated such date, from the independent certified public accountants of Company, addressed to the underwriters and, if such accountants refuse to deliver such letter to such holder, then to Company in a customary form and covering matters of the type customarily covered by such comfort letters as the underwriters or such holders shall reasonably request;

(f) enter into customary agreements (including an underwriting agreement in customary form on the same terms as any underwriting agreement required by the underwriter to be entered into on the part of the selling security holders) and take such other actions as are reasonably required in order to facilitate the disposition of such securities; and

(g) otherwise use its commercially reasonable efforts to comply with all applicable rules and regulations of the Commission, and make available to its security holders, as soon as reasonably practicable, but not later than 18 months after the effective date of the registration statement, an earnings statement covering the period of at least 12 months beginning with the first full month after the effective date of such registration statement, which earnings statements shall satisfy the provisions of Section 11(a) of the Securities Act.

It shall be a condition precedent to the obligation of Company to take any action pursuant to this Section 9 in respect of the securities which are to be registered at the request of any holder of Warrants or Warrant Stock that such holder shall furnish to Company such information regarding the securities held by such holder and the intended method of disposition thereof as Company shall reasonably request and as shall be required in connection with the action taken by Company.

9.6. Expenses. All expenses incurred in complying with Section 9, including, without limitation, all registration and filing fees (including all expenses incident to filing with the NASD), printing expenses, fees and disbursements of counsel for Company, the reasonable fees and expenses of one counsel for the selling security holders (selected by those holding a majority of the shares being registered), expenses of any special audits incident to or required by any such registration and expenses of complying with the securities or blue sky laws of any jurisdictions pursuant to Section 9.5(d), shall be paid by Company, except that

(a) In the event Company, in its sole discretion shall determine to allow a registration statement to remain effective for a period longer than 120 days, all such expenses in connection with any amendment or supplement to the registration statement or prospectus filed more than 120 days after the effective date of such registration statement because any holder of Warrant Stock has not effected the disposition of the securities requested to be registered shall be paid by such holder; and

(b) Company shall not be liable for any fees, discounts or commissions to any underwriter or any fees or disbursements of counsel for any underwriter in respect of the securities sold by such holder of Warrant Stock.

9.7. Indemnification and Contribution. (a) In the event of any registration of any of the Warrant Stock under the Securities Act pursuant to this Section 9, Company shall indemnify and hold harmless the holder of such Warrant Stock, such holder's directors and officers, and each other Person (including each underwriter) who participated in the offering of such Warrant Stock and each other Person, if any, who controls such holder or such participating Person within the meaning of the Securities Act, against any losses, claims, damages or liabilities, joint or several, to which such holder or any such director or officer or participating Person or controlling Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon (i) any alleged untrue statement of any material fact contained, on the effective date thereof, in any registration statement under which such securities were registered under the Securities Act, any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, or (ii) any alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse such holder or such director, officer or participating Person or controlling Person for any legal or any other expenses reasonably incurred by such holder or such director, officer or participating Person or controlling Person in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that Company shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any alleged untrue statement or alleged omission made in such registration statement, preliminary prospectus, prospectus or amendment or supplement in reliance upon and in conformity with written information furnished to Company by such holder specifically for use therein or based upon any holder's failure to deliver any amendment or supplement provided by Company to the extent such amendment or supplement would have cured the defect giving rise to such loss, claim, damage or liability. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such holder or such director, officer or participating Person or controlling Person, and shall survive the transfer of such securities by such holder.

(b) Each holder of any Warrant Stock, by acceptance thereof, agrees to indemnify and hold harmless Company, its directors and officers and each other Person, if any, who controls Company within the meaning of the Securities Act against any losses, claims, damages or liabilities, joint or several, to which Company or any such director or officer or any such Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon information in writing provided to Company by such holder of such Warrant

Stock specifically for use in any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, and contained, on the effective date thereof, in any registration statement under which securities were registered under the Securities Act at the request of such holder, but in an amount not to exceed the net proceeds received by such holder in the offering.

(c) If the indemnification provided for in this Section 9 from the indemnifying party is unavailable to an indemnified party hereunder in respect of any losses, claims, damages, liabilities or expenses referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages, liabilities or expenses in such proportion as is appropriate to reflect the relative fault of the indemnifying party and indemnified parties in connection with the actions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative fault of such indemnifying party and indemnified parties shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact, has been made by, or relates to information supplied by, such indemnifying party or indemnified parties, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action. The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include any legal or other fees or expenses reasonably incurred by such party in connection with any investigation or proceeding. The liability of any holder of Warrant Stock hereunder shall not exceed the net proceeds received by it in the offering.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 9.7(c) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in the immediately preceding paragraph. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

9.8. Termination of Restrictions. Notwithstanding the foregoing provisions of Section 9, the restrictions imposed by this Section upon the transferability of the Warrants, the Warrant Stock and the Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) and the legend requirements of Section 9.1 shall terminate as to any particular Warrant or share of Warrant Stock or Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) (i) when and so long as such security shall have been effectively registered under the Securities Act and disposed of pursuant thereto or (ii) when Company shall have received an opinion of counsel reasonably satisfactory to it that such shares may be transferred without registration thereof under the Securities Act. Whenever the restrictions imposed by Section 9 shall terminate as to this Warrant, as hereinabove provided, the Holder hereof shall be entitled to receive from Company, at the expense of Company, a new Warrant bearing the following legend in place of the restrictive legend set forth hereon:

**"THE RESTRICTIONS ON TRANSFERABILITY OF THE WITHIN WARRANT
CONTAINED IN SECTION 9**

**HEREOF TERMINATED ON _____, ____, AND ARE OF
NO FURTHER FORCE AND EFFECT."**

All Warrants issued upon registration of transfer, division or combination of, or in substitution for, any Warrant or Warrants entitled to bear such legend shall have a similar legend endorsed thereon. Whenever the restrictions imposed by this Section shall terminate as to any share of Restricted Common Stock, as hereinabove provided, the holder thereof shall be entitled to receive from Company, at Company's expense, a new certificate representing such Common Stock not bearing the restrictive legend set forth in Section 9.1(a).

9.9. Listing on Securities Exchange. If Company shall list any shares of Common Stock on any securities exchange, it will, at its expense, list thereon, maintain and, when necessary, increase such listing of, all shares of Common Stock issued or, to the extent permissible under the applicable securities exchange rules, issuable upon the exercise of this Warrant so long as any shares of Common Stock shall be so listed during the Exercise Period.

9.10. Certain Limitations on Registration Rights. Notwithstanding the other provisions of Section 9, Company shall not be obligated to register the Warrant Stock of any holder if, in the opinion of counsel to Company reasonably satisfactory to the holder and its counsel (or, if the holder has engaged an investment banking firm, to such investment banking firm and its counsel), the sale or other disposition of such holder's Warrant Stock, in the manner proposed by such holder (or by such investment banking firm), may be effected without registering such Warrant Stock under the Securities Act.

9.11. Selection of Managing Underwriters. The managing underwriter or underwriters for any offering of Warrant Stock to be registered pursuant to Section 9.3 shall be selected by the holders of a majority of the shares being so registered (other than any shares being registered pursuant to Section 9.4) and shall be reasonably acceptable to Company.

10. SUPPLYING INFORMATION

Company shall cooperate with each Holder of a Warrant and each holder of Restricted Common Stock in supplying such information as may be reasonably necessary for such holder to complete and file any information reporting forms presently or hereafter required by the Commission as a condition to the availability of an exemption from the Securities Act for the sale of any Warrant or Restricted Common Stock.

11. LOSS OR MUTILATION

Upon receipt by Company from any Holder of evidence reasonably satisfactory to it of the ownership of and the loss, theft, destruction or mutilation of this Warrant and indemnity reasonably satisfactory to it (it being understood that the written agreement of such Holder shall be sufficient indemnity), and in case of mutilation upon surrender and cancellation hereof, Company will execute and deliver in lieu hereof a new Warrant of like tenor to such Holder; provided, in the case of mutilation, no indemnity shall be required if this Warrant in identifiable form is surrendered to Company for cancellation.

12. OFFICE OF COMPANY

As long as any of the Warrants remain outstanding, Company shall maintain an office or agency (which may be the principal executive offices of Company) where the Warrants may be presented for exercise, registration of transfer, division or combination as provided in this Warrant.

13. BUSINESS INFORMATION

Company will file on or before the required date all regular or periodic reports (pursuant to the Exchange Act) with the Commission and will deliver to Holder promptly upon their becoming available one copy of each report, notice or proxy statement sent by Company to its stockholders generally.

14. LIMITATION OF LIABILITY

No provision hereof, in the absence of affirmative action by Holder to purchase shares of Common Stock, and no enumeration herein of the rights or privileges of Holder hereof, shall give rise to any liability of such Holder for the purchase price of any Common Stock or as a stockholder of Company, whether such liability is asserted by Company or by creditors of Company.

15. MISCELLANEOUS

15.1. Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice Holder's rights, powers or remedies. If Company fails to make, when due, any payments provided for hereunder, or fails to comply with any other provision of this Warrant, Company shall pay to Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

15.2. Notice Generally. Any notice, demand, request, consent, approval, declaration, delivery or other communication hereunder to be made pursuant to the provisions of this Warrant shall be sufficiently given or made if in writing and either delivered in person with receipt acknowledged or sent by registered or certified mail, return receipt requested, postage prepaid, or by telecopy and confirmed by telecopy answerback, addressed as follows:

(a) If to any Holder or holder of Warrant Stock, at its last known address appearing on the books of Company maintained for such purpose.

(b) If to Company at

Brush Engineered Materials Inc. 17876 St. Clair Avenue Cleveland, Ohio 44110

or at such other address as may be substituted by notice given as herein provided. The giving of any notice required hereunder may be waived in writing by the party entitled to receive such notice. Every notice, demand, request, consent, approval, declaration, delivery or other communication hereunder shall be deemed to have been duly given or served on the date on which personally delivered, with receipt acknowledged, telecopied and confirmed by telecopy answerback, or three (3) Business Days after the same shall have been deposited in the United States mail. Failure or delay in delivering copies of any notice, demand, request, approval, declaration, delivery or other communication to the person designated above to receive a copy shall in no way adversely affect the effectiveness of such notice, demand, request, approval, declaration, delivery or other communication.

15.3. Indemnification. Company agrees to indemnify and hold harmless Holder from and against any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses and disbursements of any kind which may be imposed upon, incurred by or asserted against Holder in any manner relating to or arising out of (i) Holder's exercise of this Warrant and/or ownership of any shares of Warrant Stock issued in consequence thereof, or (ii) any litigation to which Holder is made a party in its capacity as a stockholder of Company; provided, however, that Company will not be liable hereunder to the extent that any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses or disbursements resulted from Holder's gross negligence, bad faith or willful misconduct in its capacity as a stockholder or warrant holder of Company.

15.4. Remedies. Each holder of Warrant and Warrant Stock, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under Section 9 of this Warrant. Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of Section 9 of this Warrant and hereby agrees to waive the defense in any action for specific performance that a remedy at law would be adequate.

15.5. Successors and Assigns. Subject to the provisions of Sections 3.1 and 9, this Warrant and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors of Company and the successors and assigns of Holder. The provisions of this Warrant are intended to be for the benefit of all Holders from time to time of this Warrant and, with respect to Section 9 hereof, holders of Warrant Stock, and shall be enforceable by any such Holder or holder of Warrant Stock.

15.6. Amendment. This Warrant and all other Warrants may be modified or amended or the provisions hereof waived with the written consent of Company and the Majority Holders, provided that no such Warrant may be modified or amended to reduce the number of shares of Common Stock for which such Warrant is exercisable or to increase the price at which such shares may be purchased upon exercise of such Warrant (before giving effect to any adjustment as provided therein) without the prior written consent of the Holder thereof.

15.7. Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Warrant.

15.8. Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

15.9. Governing Law. This Warrant shall be governed by the laws of the State of New York, without regard to the provisions thereof relating to conflict of laws.

15.10. Waiver of Jury Trial. Company hereby irrevocably waives all right to trial by jury in any action, proceeding or counterclaim (whether based on contract, tort or otherwise) arising out of or relating to this Warrant or the enforcement of all rights and defenses under this Warrant.

IN WITNESS WHEREOF, Company has caused this Warrant to be duly executed and its corporate seal to be impressed hereon and attested by its Secretary or an Assistant Secretary.

Dated: December 4, 2003

BRUSH ENGINEERED MATERIALS INC.

By: _____
Name: John Grampa
Title: VP, Finance

Attest:

By: _____
Name:
Title:

EXHIBIT A

SUBSCRIPTION FORM

[To be executed only upon exercise of Warrant]

The undersigned registered owner of this Warrant irrevocably exercises this Warrant for the purchase of _____ shares of Common Stock of Brush Engineered Materials Inc. and herewith makes payment therefor, all at the price and on the terms and conditions specified in this Warrant and requests that certificates for the shares of Common Stock hereby purchased (and any securities or other property issuable upon such exercise) be issued in the name of and delivered to _____ whose address is _____ and, if such shares of Common Stock shall not include all of the shares of Common Stock issuable as provided in this Warrant, that a new Warrant of like tenor and date for the balance of the shares of Common Stock issuable hereunder be delivered to the undersigned.

(Name of Registered Owner)

(Signature of Registered Owner)

(Street Address)

(City) (State) (Zip Code)

NOTICE:

The signature on this subscription must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

EXHIBIT B

ASSIGNMENT FORM

FOR VALUE RECEIVED the undersigned registered owner of this Warrant hereby sells, assigns and transfers unto the Assignee named below all of the rights of the undersigned under this Warrant, with respect to the number of shares of Common Stock set forth below:

Name and Address of Assignee	No. of Shares of Common Stock
------------------------------	----------------------------------

and does hereby irrevocably constitute and appoint _____ attorney-in-fact to register such transfer on the books of Brush Engineered Materials Inc. maintained for the purpose, with full power of substitution in the premises.

Dated:	Print Name:
_____	_____
	Signature:

	Witness:

NOTICE: The signature on this subscription must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

Exhibit (4I)

WARRANT

To Purchase Common Stock of

BRUSH ENGINEERED MATERIALS INC.

THIS WARRANT AND THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE TRANSFERRED IN VIOLATION OF SUCH ACT, THE RULES AND REGULATIONS THEREUNDER OR THE PROVISIONS OF THIS WARRANT.

No. of Shares of Common Stock: 20,000 No. 4

WARRANT

To Purchase Common Stock of

BRUSH ENGINEERED MATERIALS INC.

THIS IS TO CERTIFY THAT, H/Z ACQUISITION PARTNERS LLC, or registered assigns, is entitled, at any time prior to the Expiration Date (as hereinafter defined), to purchase from BRUSH ENGINEERED MATERIALS INC., an Ohio corporation ("Company"), 20,000 shares of Common Stock (as hereinafter defined and subject to adjustment as provided herein), in whole or in part, including fractional parts, at a purchase price of \$0.01 per share, all on the terms and conditions and pursuant to the provisions hereinafter set forth.

1. DEFINITIONS

As used in this Warrant, the following terms have the respective meanings set forth below (all capitalized used herein and not defined shall have the same meanings ascribed to them in the Loan Agreement):

"Additional Shares of Common Stock" shall mean all shares of Common Stock issued by Company after the Closing Date, other than Warrant Stock.

"Commission" shall mean the Securities and Exchange Commission or any other federal agency then administering the Securities Act and other federal securities laws.

"Common Stock" shall mean (except where the context otherwise indicates) the Common Stock, no par value per share, of Company as constituted on the Closing Date, and any capital stock into which such Common Stock may thereafter be changed, and shall also include (i) capital stock of Company of any other class (regardless of how denominated) issued to the holders of shares of Common Stock upon any reclassification thereof which is also not preferred as to dividends or assets over any other class of stock of Company and which is not subject to redemption and (ii) shares of common stock of any successor or acquiring corporation received by or distributed to the holders of Common Stock of Company.

"Convertible Securities" shall mean evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable, with or without payment of additional consideration in cash or property, for Additional Shares of Common Stock, either immediately or upon the occurrence of a specified date or a specified event.

"Current Market Price" shall mean, in respect of any share of Common Stock on any date herein specified, (a) if there shall then be a public market for the Common Stock, the average of

the daily market prices for 10 consecutive Business Days commencing 10 Business Days before such date. The daily market price for each such Business Day shall be (i) the last sale price on such day on the principal stock exchange or NASDAQ Stock Market ("NASDAQ") on which such Common Stock is then listed or admitted to trading, (ii) if no sale takes place on such day on any such exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day as officially quoted on any such exchange or NASDAQ, (iii) if the Common Stock is not then listed or admitted to trading on any stock exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day in the over-the-counter market, as furnished by the National Association of Securities Dealers Automatic Quotation System or the National Quotation Bureau, Inc., (iv) if neither such corporation at the time is engaged in the business of reporting such prices, as furnished by any similar firm then engaged in such business, or (v) if there is no such firm, as furnished by any member of the NASD selected mutually by the Majority Holders and Company or, if they cannot agree upon such selection, as selected by two such members of the NASD, one of which shall be selected by the Majority Holders and one of which shall be selected by Company, or (b) if there is no such public market, the fair market value thereof as determined in good faith by Company's Board of Directors.

"Current Warrant Price" shall mean, in respect of a share of Common Stock at any date herein specified, the price at which a share of Common Stock may be purchased pursuant to this Warrant on such date.

"Demand Notice" shall have the meaning set forth in Section 9.3(a).

"Demand Registration Period" shall mean any period of time during which Company is eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto during the period beginning on the date of this Warrant and ending on the first anniversary of this Warrant.

"Disadvantageous Condition" shall mean, at any time, the existence of a condition such that the filing of a registration statement or the use of an effective registration to make resales would (i) interfere with or affect the negotiation or completion of any plan or proposal by Company to engage in any significant transaction at such time or (ii) require disclosure of information that the Company has a bona fide business purpose for preserving as confidential.

"Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect from time to time.

"Exercise Period" shall mean the period during which this Warrant is exercisable pursuant to Section 2.1.

"Expiration Date" shall mean December 5, 2008.

"Filing Date" shall mean the earlier of (i) the date on which Company has filed with the Commission its Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and (ii) March 31, 2004.

"Guggenheim" shall mean any affiliates of Guggenheim Corporate Funding, LLC who hold Warrants or Warrant Stock.

"Holder" shall mean the Person in whose name the Warrant set forth herein is registered on the books of Company maintained for such purpose.

"Loan Agreement" shall mean the Loan Agreement dated as of December 4, 2003, by and among Company, the other credit parties party thereto as guarantors, the lenders named therein and Guggenheim Corporate Funding, LLC, as collateral agent for such lenders, as amended, supplemented or otherwise modified from time to time.

"Majority Holders" shall mean the holders of Warrants exercisable for in excess of 50% of the aggregate number of shares of Common Stock then purchasable upon exercise of all Warrants, whether or not then exercisable.

"NASD" shall mean the National Association of Securities Dealers, Inc., or any successor corporation thereto.

"Other Property" shall have the meaning set forth in Section 4.3.

"Outstanding" shall mean, when used with reference to Common Stock, at any date as of which the number of shares thereof is to be determined, all issued shares of Common Stock, except shares then owned or held by or for the account of Company or any subsidiary thereof, and shall include all shares issuable in respect of outstanding scrip or any certificates representing fractional interests in shares of Common Stock.

"Restricted Common Stock" shall mean shares of Common Stock which are, or which upon their issuance on the exercise of this Warrant would be, evidenced by a certificate bearing the restrictive legend set forth in Section 9.1(a).

"Securities Act" shall mean the Securities Act of 1933, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect at the time.

"Transfer" shall mean any disposition of any Warrant or Warrant Stock or of any interest in either thereof, which would constitute a sale thereof within the meaning of the Securities Act.

"Transfer Notice" shall have the meaning set forth in Section 9.2.

"Warrants" shall mean this Warrant and all other Warrants issued pursuant to the Loan Agreement, and all warrants issued upon transfer, division or combination of, or in substitution for, any thereof. All Warrants shall at all times be identical as to terms and conditions and date, except as to the number of shares of Common Stock for which they may be exercised.

"Warrant Price" shall mean an amount equal to (i) the number of shares of Common Stock being purchased upon exercise of this Warrant pursuant to Section 2.1, multiplied by (ii) the Current Warrant Price as of the date of such exercise.

"Warrant Stock" shall mean the shares of Common Stock purchased by the holders of the Warrants upon the exercise thereof.

2. EXERCISE OF WARRANT

2.1. Manner of Exercise. From and after the Closing Date and until 5:00 P.M., New York time, on the Expiration Date, Holder may exercise this Warrant, on any Business Day, for all or any part of the number of shares of Common Stock purchasable hereunder.

In order to exercise this Warrant, in whole or in part, Holder shall deliver to Company at its principal office at 17876 St. Clair Avenue, Cleveland, Ohio 44110, or at the office or agency designated by Company pursuant to Section 12, (i) a written notice of Holder's election to exercise this Warrant, which notice shall specify the number of shares of Common Stock to be purchased, (ii) payment of the Warrant Price and (iii) this Warrant. Such notice shall be substantially in the form of the subscription form appearing at the end of this Warrant as Exhibit A, duly executed by Holder or its agent or attorney. Upon receipt thereof, Company shall, as promptly as practicable, and in any event within ten (10) Business Days thereafter, execute or cause to be executed and deliver or cause to be delivered to Holder a certificate or certificates representing the aggregate number of full shares of Common Stock issuable upon such exercise. The stock certificate or certificates so delivered shall be, to the extent possible, in such denomination or denominations as such Holder shall request in the notice and shall be registered in the name of Holder or, subject to Section 9, such other name as shall be designated in the notice. This Warrant shall be deemed to have been exercised and such certificate or certificates shall be deemed to have been issued, and Holder or any other Person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the notice is received by Company so long as the cash or check or other payment provided below and this Warrant are received by Company promptly thereafter and all taxes required to be paid by Holder, if any, pursuant to Section 2.2 prior to the issuance of such shares have been paid. If this Warrant shall have been exercised in part, Company shall, at the time of delivery of the certificate or certificates representing Warrant Stock, deliver to Holder a new Warrant evidencing the rights of Holder to purchase the unpurchased shares of Common Stock called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant, or, at the request of Holder, appropriate notation may be made on this Warrant and the same returned to Holder. Notwithstanding any provision herein to the contrary, Company shall not be required to register shares in the name of any Person who acquired this Warrant (or part hereof) or any Warrant Stock otherwise than in accordance with this Warrant.

Payment of the Warrant Price shall be made at the option of the Holder by (i) check, and/or (ii) by the Holder's surrender to Company of that number of shares of Warrant Stock (or the right to receive such number of shares) or shares of Common Stock having an aggregate Current Market Price equal to or greater than the Current Warrant Price for all shares then being purchased (including those being surrendered), or (iii) any combination thereof, duly endorsed by or accompanied by appropriate instruments of transfer duly executed by Holder or by Holder's attorney duly authorized in writing.

2.2. Payment of Taxes. Company shall pay all expenses in connection with, and all taxes and other governmental charges that may be imposed with respect to, the issuance or

delivery of the shares of Common Stock issuable upon exercise of this Warrant, unless such tax or charge is imposed by law upon Holder, in which case such taxes or charges shall be paid by Holder. Company shall not be required, however, to pay any tax or other charge imposed in connection with any transfer involved in the issue of any certificate for shares of Common Stock issuable upon exercise of this Warrant in any name other than that of Holder, and in such case Company shall not be required to issue or deliver any stock certificate until such tax or other charge has been paid or it has been established to the reasonable satisfaction of Company that no such tax or other charge is due.

2.3. Fractional Shares. Company shall not be required to issue a fractional share of Common Stock upon exercise of any Warrant. If any fraction of a share of Common Stock would be deliverable upon exercise of this Warrant, Company may, in lieu of delivering such fractional share, (a) make a cash payment to the Holder in an amount equal to the same fraction of the Current Market Price determined as of the Business Day immediately preceding the date of exercise of this Warrant or (b) round up the number of shares to be delivered to the nearest whole share.

2.4. Continued Validity. A holder of shares of Common Stock issued upon the exercise of this Warrant, in whole or in part (other than a holder who acquires such shares after the same have been publicly sold pursuant to a registration statement under the Securities Act or sold pursuant to Rule 144 thereunder), shall continue with respect to such shares to be entitled to all rights and subject to all obligations to which it would have been entitled as Holder under Sections 9, 10 and 14 of this Warrant. Company will, at the time of each exercise of this Warrant, in whole or in part, upon the request of the holder of the shares of Common Stock issued upon such exercise hereof, acknowledge in writing, in form reasonably satisfactory to such holder, its continuing obligation to afford to such holder all such rights and obligations; provided, however, that if such holder shall fail to make any such request, such failure shall not affect the continuing obligation of Company to afford to such holder all such rights and obligations.

3. TRANSFER DIVISION AND COMBINATION

3.1. Transfer. Subject to compliance with Section 9, transfer of this Warrant, in whole or in part, and all attendant rights hereunder, shall be registered on the books of Company to be maintained for such purpose, upon surrender of this Warrant at the principal office of Company referred to in

Section 2.1 or the office or agency designated by Company pursuant to Section 12, together with a written assignment of this Warrant substantially in the form of Exhibit B hereto duly executed by Holder or its agent or attorney. Upon such surrender, Company shall, subject to Section 9, execute and deliver a new Warrant or Warrants in the name of the assignee or assignees and in the denomination specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. A Warrant, if properly assigned in compliance with Section 9, may be exercised by a new Holder for the purchase of shares of Common Stock prior to the issuance of a new Warrant.

3.2. Division and Combination. Subject to Section 9, this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office or agency of

Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by Holder or its agent or attorney. Subject to compliance with Section 3.1 and with Section 9, as to any transfer which may be involved in such division or combination, Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice.

3.3. Expenses. Company shall prepare, issue and deliver at its own expense (other than transfer taxes) the new Warrant or Warrants under this Section 3.

3.4. Maintenance of Books. Company agrees to maintain, at its aforesaid office or agency, books for the registration and the registration of transfer of the Warrants.

4. ADJUSTMENTS

The number of shares of Common Stock for which this Warrant is exercisable, or the price at which such shares may be purchased upon exercise of this Warrant, shall be subject to adjustment from time to time as set forth in this Section 4.

4.1. Stock Dividends Subdivisions and Combinations. If at any time Company shall:

(a) take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend payable in, or other distribution of, Additional Shares of Common Stock,

(b) subdivide its outstanding shares of Common Stock into a larger number of shares of Common Stock, or

(c) combine its outstanding shares of Common Stock into a smaller number of shares of Common Stock,

then (i) the number of shares of Common Stock for which this Warrant is exercisable immediately after the occurrence of any such event shall be adjusted to equal the number of shares of Common Stock which a record holder of the same number of shares of Common Stock for which this Warrant is exercisable immediately prior to the occurrence of such event would own or be entitled to receive after the happening of such event, and (ii) the Current Warrant Price shall be adjusted to equal (A) the Current Warrant Price multiplied by the number of shares of Common Stock for which this Warrant is exercisable immediately prior to the adjustment divided by (B) the number of shares for which this Warrant is exercisable immediately after such adjustment.

4.2. Certain Other Distributions. If at any time Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive any dividend or other distribution of:

(a) cash,

(b) any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock), or

(c) any warrants or other rights to subscribe for or purchase any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock),

Holder shall be entitled to receive such dividend or distribution upon exercise of the Warrant as if Holder had exercised the Warrant at the time of the taking of such record.

4.3. Reorganization Reclassification Merger Consolidation or Disposition of Assets. In case Company shall reorganize its capital, reclassify its capital stock, consolidate or merge with or into another Person (where Company is not the surviving Person or where there is a change in or distribution with respect to the Common Stock of Company), or sell, transfer or otherwise dispose of all or substantially all its property, assets or business to another Person (any such transaction, a "Change of Control Transaction") and, pursuant to the terms of such reorganization, reclassification, merger, consolidation or disposition of assets, shares of common stock of the successor or acquiring Person, or any cash, shares of stock or other securities or property of any nature whatsoever (including warrants or other subscription or purchase rights) in addition to or in lieu of common stock of the successor or acquiring corporation ("Other Property"), are to be received by or distributed to the holders of Common Stock of Company, then each Holder shall have the right thereafter to receive, upon exercise of such Warrant, the number of shares of common stock of the successor or acquiring Person or of Company, if it is the surviving Person, and Other Property receivable upon or as a result of such reorganization, reclassification, merger, consolidation or disposition of assets by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such event. In case of any such reorganization, reclassification, merger, consolidation or disposition of assets, the successor or acquiring Person (if other than Company) shall expressly assume the due and punctual observance and performance of each and every covenant and condition of this Warrant to be performed and observed by Company and all the obligations and liabilities hereunder, subject to such modifications as may be deemed appropriate (as determined by resolution of the Board of Directors of Company) in order to provide for adjustments of shares of Common Stock for which this Warrant is exercisable which shall be as nearly equivalent as practicable to the adjustments provided for in this Section 4. For purposes of this Section 4.3, "common stock of the successor or acquiring Person" shall include stock of such Person of any class which is not preferred as to dividends or assets over any other class of stock of such corporation and which is not subject to redemption and shall also include any evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable for any such stock, either immediately or upon the arrival of a specified date or the happening of a specified event and any warrants or other rights to subscribe for or purchase any such stock. The foregoing provisions of this Section 4.3 shall similarly apply to successive reorganizations, reclassifications, mergers, consolidations or disposition of assets. Notwithstanding the foregoing, if any Change of Control Transaction occurs at any time that all obligations under the Loan Agreement are satisfied and the Loan Agreement is terminated, then each Holder shall be required to exercise its Warrant in connection with such Change of Control Transaction and be entitled to receive the Other Property issuable to holders of Common Stock of the Company.

4.4. Other Action Affecting Common Stock. In case at any time or from time to time Company shall take any action in respect of its Common Stock, other than any action described in this Section 4, then, unless such action will not have a materially adverse effect upon the rights of the Holders, the number of shares of Common Stock or other stock for which this Warrant is exercisable and/or the purchase price thereof shall be adjusted in such manner as may be equitable in the circumstances.

5. NOTICES TO WARRANT HOLDERS

5.1. Notice of Adjustments. Whenever the number of shares of Common Stock for which this Warrant is exercisable, or whenever the price at which a share of such Common Stock may be purchased upon exercise of the Warrants, shall be adjusted pursuant to Section 4, Company shall forthwith prepare a certificate to be executed by an executive officer of Company setting forth, in reasonable detail, the event requiring the adjustment and the method by which such adjustment was calculated, specifying the number of shares of Common Stock for which this Warrant is exercisable and (if such adjustment was made pursuant to Section 4.2 or 4.3) describing the number and kind of any other shares of stock or Other Property for which this Warrant is exercisable, and any change in the purchase price or prices thereof, after giving effect to such adjustment or change. Company shall promptly cause a signed copy of such certificate to be delivered to each Holder in accordance with Section 15.2. Company shall keep at its office or agency designated pursuant to Section 12 copies of all such certificates and cause the same to be available for inspection at said office during normal business hours by any Holder or any prospective purchaser of a Warrant designated by a Holder thereof.

5.2. Notice of Corporate Action. If at any time:

(a) Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend or other distribution, or any right to subscribe for or purchase any evidences of its indebtedness, any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) there shall be any capital reorganization of Company, any reclassification or recapitalization of the capital stock of Company or any consolidation or merger of Company with, or any sale, transfer or other disposition of all or substantially all the property, assets or business of Company to, another Person, or

(c) there shall be a voluntary or involuntary dissolution, liquidation or winding up of Company;

then, in any one or more of such cases, Company shall give to Holder (i) at least 30 days' prior written notice of the date on which a record date shall be selected for such dividend, distribution or right or for determining rights to vote in respect of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, and (ii) in the case of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, at least 30 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause also shall specify

(i) the date on which any such record is to be taken for the purpose of such

dividend, distribution or right, the date on which the holders of Common Stock shall be entitled to any such dividend, distribution or right, and the amount and character thereof, and (ii) the date on which any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up is to take place and the time, if any such time is to be fixed, as of which the holders of Common Stock shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up. Each such written notice shall be delivered to Holder in accordance with Section 15.2.

6. NO IMPAIRMENT

Company shall not intentionally take any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder against impairment. Without limiting the generality of the foregoing, Company will (a) take all such action necessary in order that Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, including such action as is necessary for the Current Warrant Price to be not less than the par value of the shares of Common Stock issuable upon exercise of this Warrant, and (b) use its commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable Company to perform its obligations under this Warrant.

7. RESERVATION AND AUTHORIZATION OF COMMON STOCK; REGISTRATION WITH OR APPROVAL OF ANY GOVERNMENTAL AUTHORITY

From and after the Closing Date, Company shall at all times reserve and keep available for issue upon the exercise of Warrants such number of its authorized but unissued shares of Common Stock as will be sufficient to permit the exercise in full of all outstanding Warrants. All shares of Common Stock which shall be so issuable, when issued upon exercise of any Warrant and payment therefor in accordance with the terms of such Warrant, shall be duly and validly issued and fully paid and nonassessable, and not subject to preemptive rights.

Before taking any action which would cause an adjustment reducing the Current Warrant Price below the then par value, if any, of the shares of Common Stock issuable upon exercise of the Warrants, Company shall take any corporate action which may be necessary in order that Company may validly and legally issue fully paid and non-assessable shares of such Common Stock at such adjusted Current Warrant Price. Before taking any action which would result in an adjustment in the number of shares of Common Stock for which this Warrant is exercisable or in the Current Warrant Price, Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

If any shares of Common Stock required to be reserved for issuance upon exercise of Warrants require registration or qualification with any governmental authority or other governmental approval or filing under any federal or state law (other than registration rights as provided in Section 9) before such shares may be so issued, Company will in good faith and as expeditiously as possible and at its expense endeavor to cause such shares to be duly registered.

8. TAKING OF RECORD STOCK AND WARRANT TRANSFER BOOKS

In the case of all dividends or other distributions by Company to the holders of its Common Stock with respect to which any provision of Section 4 refers to the taking of a record of such holders, Company will in each such case take such a record and will take such record as of the close of business on a Business Day. Company will not at any time, except upon dissolution, liquidation or winding up of Company, close its stock transfer books or warrant transfer books so as to result in preventing or delaying the exercise or transfer of any Warrant.

9. RESTRICTIONS ON TRANSFERABILITY

The Warrants and the Warrant Stock shall not be transferred, hypothecated or assigned before satisfaction of the conditions specified in this Section 9, which conditions are intended to ensure compliance with the provisions of the Securities Act with respect to the Transfer of any Warrant or any Warrant Stock. Holder, by acceptance of this Warrant, agrees to be bound by the provisions of this Section 9.

9.1. Restrictive Legend. (a) Except as otherwise provided in this Section 9, each certificate for Warrant Stock initially issued upon the exercise of this Warrant, and each certificate for Warrant Stock issued to any subsequent transferee of any such certificate, shall be stamped or otherwise imprinted with a legend in substantially the following form:

"The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act or the rules and regulations thereunder."

(b) Except as otherwise provided in this Section 9, each Warrant shall be stamped or otherwise imprinted with a legend in substantially the following form:

"This Warrant and the securities represented hereby have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act, the rules and regulations thereunder or the provisions of this Warrant."

9.2. Notice of Proposed Transfers, Requests for Registration. Prior to or promptly following any Transfer of any Warrants or any shares of Restricted Common Stock, the holder of such Warrants or Restricted Common Stock shall give written notice (a "Transfer Notice") to Company of such Transfer accompanied by an opinion of counsel reasonably acceptable to Company, in form and substance reasonably acceptable to Company, to the effect that such Transfer will not be in violation of the Securities Act or any other applicable securities laws. Each certificate, if any, evidencing such shares of Restricted Common Stock issued upon such

Transfer shall bear the restrictive legend set forth in Section 9.1(a), and each Warrant issued upon such Transfer shall bear the restrictive legend set forth in

Section 9.1(b), unless in the opinion of counsel to such holder which is reasonably acceptable to Company such legend is not required in order to ensure compliance with the Securities Act.

The holders of Warrants and Warrant Stock shall have the right to request registration of such Warrant Stock pursuant to Section 9.3 and Section 9.4.

9.3. Demand Registration. (a) Subject to the provisions of this Section 9.3, on one occasion during the Demand Registration Period, the Majority Holders or Guggenheim may request by written notice (the "Demand Notice") to Company that Company register under the Securities Act the resale of such shares of Warrant Stock held by the Majority Holders or Guggenheim, as the case may be, pursuant to a registration statement on Form S-3 or any successor form thereto. Upon receipt of the Demand Notice, Company shall promptly notify all holders of Warrants and Warrant Stock in writing of the receipt of such Demand Notice and each such holder, in lieu of exercising its rights under Section 9.4, may elect by written notice to Company within 15 days after receipt of such notice from Company to have its shares of Warrant Stock included in such registration. In such event, and subject to the other provisions of this Section 9, Company shall use its commercially reasonable efforts to prepare documentation and effect registration under the Securities Act of all shares of the Warrant Stock that Company has been requested to register pursuant to this Section 9.3, all to the extent required to permit the disposition of such Warrant Stock in accordance with the intended methods of disposition of the holders thereof.

(b) Notwithstanding anything to the contrary in this Section 9.3, if Company determines reasonably and in good faith that a Disadvantageous Condition exists, (i) Company will have the right to defer the filing of a registration statement requested pursuant to this Section 9.3; provided, however, that in no event may Company defer filing hereunder for more than 45 days from the first date of such determination by Company and (ii) Company may suspend, for up to 45 days, use of a registration statement filed pursuant to this Section 9.3 that has been declared effective by the Commission. Company will provide notice to the holders of Warrants and Warrant Stock of the Company's determination that a Disadvantageous Condition exists. Company shall use its reasonable efforts to cause the period during which a registration statement filed pursuant to this

Section 9.3 is to remain effective pursuant to Section 9.5 to be extended by the number of days of any such suspension on account of a Disadvantageous Condition.

(c) Notwithstanding anything to the contrary in this Section 9.3, Company will not be required to effect a registration pursuant to this Section 9.3, (i) unless Company is then eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto and (ii) in any particular jurisdiction in which Company would be required to execute a general consent to service of process in effecting such registration.

9.4. Incidental Registration. If Company at any time proposes to file on its behalf and/or on behalf of any of its security holders (the "demanding security holders") a registration statement under the Securities Act on any form (other than a registration statement on Form S-4 or S-8 or any successor form for securities to be offered in a transaction of the type referred to in

Rule 145 under the Securities Act or to employees of Company pursuant to any employee benefit plan, respectively) for the general registration of securities to be sold for cash with respect to its Common Stock or any other class of equity security (as defined in Section 3(a)(11) of the Exchange Act) of Company, it will give written notice to all holders of Warrants or Warrant Stock at least 30 days before the initial filing with the Commission of such registration statement, which notice shall set forth the intended method of disposition of the securities proposed to be registered by Company. The notice shall offer to include in such filing the aggregate number of shares of Warrant Stock, and the number of shares of Common Stock for which this Warrant is exercisable, as such holders may request.

Each holder of any such Warrants or any such Warrant Stock desiring to have Warrant Stock registered under this Section 9.4 shall advise Company in writing within 15 days after the date of receipt of such offer from Company, setting forth the amount of such Warrant Stock for which registration is requested. Company shall thereupon include in such filing the number of shares of Warrant Stock for which registration is so requested, subject to the next sentence, and shall use its best efforts to effect registration under the Securities Act of such shares. If the managing underwriter of a proposed public offering shall advise Company in writing that, in its opinion, the distribution of the Warrant Stock requested to be included in the registration concurrently with the securities being registered by Company or such demanding security holder would materially and adversely affect the distribution of such securities by Company or such demanding security holder, then all selling security holders shall reduce the amount of securities each intended to distribute through such offering on a pro rata basis.

9.5. Registration Procedures. If Company is required by the provisions of this Section 9 to use its commercially reasonable efforts to effect the registration of any of its securities under the Securities Act, Company will,

(i) in the case of a registration of securities pursuant to Section 9.3, as expeditiously as possible after the Filing Date, and (ii) in the case of a registration of securities pursuant to Section 9.4, as expeditiously as possible:

(a) prepare and file with the Commission a registration statement with respect to such securities and use its commercially reasonable efforts to cause such registration statement to become and remain effective for a period of time required for the disposition of such securities by the holders thereof, but not to exceed 120 days;

(b) prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the sale or other disposition of all securities covered by such registration statement until the earlier of such time as all of such securities have been disposed of in a public offering or the expiration of 120 days;

(c) furnish to such selling security holders such number of copies of a summary prospectus or other prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents, as such selling security holders may reasonably request;

(d) use its commercially reasonable efforts to register or qualify the securities covered by such registration statement under such other securities or blue sky laws of such jurisdictions within the United States and Puerto Rico as each holder of such securities shall reasonably request (provided, however, that Company shall not be obligated to qualify as a foreign corporation to do business under the laws of any jurisdiction in which it is not then qualified or to file any general consent to service or process), and do such other reasonable acts and things as may be required of it to enable such holder to consummate the disposition in such jurisdiction of the securities covered by such registration statement;

(e) furnish, at the request of any holder requesting registration of Warrant Stock pursuant to Section 9.3, on the date that such shares of Warrant Stock are delivered to the underwriters for sale pursuant to such registration, on the date that the registration statement with respect to such shares of Warrant Stock becomes effective, (1) an opinion, dated such date, of the independent counsel representing Company for the purposes of such registration, addressed to the underwriters in customary form and covering matters of the type customarily covered in such legal opinions; and (2) a comfort letter dated such date, from the independent certified public accountants of Company, addressed to the underwriters and, if such accountants refuse to deliver such letter to such holder, then to Company in a customary form and covering matters of the type customarily covered by such comfort letters as the underwriters or such holders shall reasonably request;

(f) enter into customary agreements (including an underwriting agreement in customary form on the same terms as any underwriting agreement required by the underwriter to be entered into on the part of the selling security holders) and take such other actions as are reasonably required in order to facilitate the disposition of such securities; and

(g) otherwise use its commercially reasonable efforts to comply with all applicable rules and regulations of the Commission, and make available to its security holders, as soon as reasonably practicable, but not later than 18 months after the effective date of the registration statement, an earnings statement covering the period of at least 12 months beginning with the first full month after the effective date of such registration statement, which earnings statements shall satisfy the provisions of Section 11(a) of the Securities Act.

It shall be a condition precedent to the obligation of Company to take any action pursuant to this Section 9 in respect of the securities which are to be registered at the request of any holder of Warrants or Warrant Stock that such holder shall furnish to Company such information regarding the securities held by such holder and the intended method of disposition thereof as Company shall reasonably request and as shall be required in connection with the action taken by Company.

9.6. Expenses. All expenses incurred in complying with Section 9, including, without limitation, all registration and filing fees (including all expenses incident to filing with the NASD), printing expenses, fees and disbursements of counsel for Company, the reasonable fees and expenses of one counsel for the selling security holders (selected by those holding a majority of the shares being registered), expenses of any special audits incident to or required by any such registration and expenses of complying with the securities or blue sky laws of any jurisdictions pursuant to Section 9.5(d), shall be paid by Company, except that

(a) In the event Company, in its sole discretion shall determine to allow a registration statement to remain effective for a period longer than 120 days, all such expenses in connection with any amendment or supplement to the registration statement or prospectus filed more than 120 days after the effective date of such registration statement because any holder of Warrant Stock has not effected the disposition of the securities requested to be registered shall be paid by such holder; and

(b) Company shall not be liable for any fees, discounts or commissions to any underwriter or any fees or disbursements of counsel for any underwriter in respect of the securities sold by such holder of Warrant Stock.

9.7. Indemnification and Contribution. (a) In the event of any registration of any of the Warrant Stock under the Securities Act pursuant to this Section 9, Company shall indemnify and hold harmless the holder of such Warrant Stock, such holder's directors and officers, and each other Person (including each underwriter) who participated in the offering of such Warrant Stock and each other Person, if any, who controls such holder or such participating Person within the meaning of the Securities Act, against any losses, claims, damages or liabilities, joint or several, to which such holder or any such director or officer or participating Person or controlling Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon (i) any alleged untrue statement of any material fact contained, on the effective date thereof, in any registration statement under which such securities were registered under the Securities Act, any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, or (ii) any alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse such holder or such director, officer or participating Person or controlling Person for any legal or any other expenses reasonably incurred by such holder or such director, officer or participating Person or controlling Person in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that Company shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any alleged untrue statement or alleged omission made in such registration statement, preliminary prospectus, prospectus or amendment or supplement in reliance upon and in conformity with written information furnished to Company by such holder specifically for use therein or based upon any holder's failure to deliver any amendment or supplement provided by Company to the extent such amendment or supplement would have cured the defect giving rise to such loss, claim, damage or liability. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such holder or such director, officer or participating Person or controlling Person, and shall survive the transfer of such securities by such holder.

(b) Each holder of any Warrant Stock, by acceptance thereof, agrees to indemnify and hold harmless Company, its directors and officers and each other Person, if any, who controls Company within the meaning of the Securities Act against any losses, claims, damages or liabilities, joint or several, to which Company or any such director or officer or any such Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon information in writing provided to Company by such holder of such Warrant

Stock specifically for use in any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, and contained, on the effective date thereof, in any registration statement under which securities were registered under the Securities Act at the request of such holder, but in an amount not to exceed the net proceeds received by such holder in the offering.

(c) If the indemnification provided for in this Section 9 from the indemnifying party is unavailable to an indemnified party hereunder in respect of any losses, claims, damages, liabilities or expenses referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages, liabilities or expenses in such proportion as is appropriate to reflect the relative fault of the indemnifying party and indemnified parties in connection with the actions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative fault of such indemnifying party and indemnified parties shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact, has been made by, or relates to information supplied by, such indemnifying party or indemnified parties, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action. The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include any legal or other fees or expenses reasonably incurred by such party in connection with any investigation or proceeding. The liability of any holder of Warrant Stock hereunder shall not exceed the net proceeds received by it in the offering.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 9.7(c) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in the immediately preceding paragraph. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

9.8. Termination of Restrictions. Notwithstanding the foregoing provisions of Section 9, the restrictions imposed by this Section upon the transferability of the Warrants, the Warrant Stock and the Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) and the legend requirements of

Section 9.1 shall terminate as to any particular Warrant or share of Warrant Stock or Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) (i) when and so long as such security shall have been effectively registered under the Securities Act and disposed of pursuant thereto or (ii) when Company shall have received an opinion of counsel reasonably satisfactory to it that such shares may be transferred without registration thereof under the Securities Act. Whenever the restrictions imposed by Section 9 shall terminate as to this Warrant, as hereinabove provided, the Holder hereof shall be entitled to receive from Company, at the expense of Company, a new Warrant bearing the following legend in place of the restrictive legend set forth hereon:

**"THE RESTRICTIONS ON TRANSFERABILITY OF THE WITHIN WARRANT
CONTAINED IN SECTION 9**

**HEREOF TERMINATED ON _____, _____, AND ARE OF NO FURTHER FORCE
AND EFFECT."**

All Warrants issued upon registration of transfer, division or combination of, or in substitution for, any Warrant or Warrants entitled to bear such legend shall have a similar legend endorsed thereon. Whenever the restrictions imposed by this Section shall terminate as to any share of Restricted Common Stock, as hereinabove provided, the holder thereof shall be entitled to receive from Company, at Company's expense, a new certificate representing such Common Stock not bearing the restrictive legend set forth in Section 9.1(a).

9.9. Listing on Securities Exchange. If Company shall list any shares of Common Stock on any securities exchange, it will, at its expense, list thereon, maintain and, when necessary, increase such listing of, all shares of Common Stock issued or, to the extent permissible under the applicable securities exchange rules, issuable upon the exercise of this Warrant so long as any shares of Common Stock shall be so listed during the Exercise Period.

9.10. Certain Limitations on Registration Rights. Notwithstanding the other provisions of Section 9, Company shall not be obligated to register the Warrant Stock of any holder if, in the opinion of counsel to Company reasonably satisfactory to the holder and its counsel (or, if the holder has engaged an investment banking firm, to such investment banking firm and its counsel), the sale or other disposition of such holder's Warrant Stock, in the manner proposed by such holder (or by such investment banking firm), may be effected without registering such Warrant Stock under the Securities Act.

9.11. Selection of Managing Underwriters. The managing underwriter or underwriters for any offering of Warrant Stock to be registered pursuant to Section 9.3 shall be selected by the holders of a majority of the shares being so registered (other than any shares being registered pursuant to Section 9.4) and shall be reasonably acceptable to Company.

10. SUPPLYING INFORMATION

Company shall cooperate with each Holder of a Warrant and each holder of Restricted Common Stock in supplying such information as may be reasonably necessary for such holder to complete and file any information reporting forms presently or hereafter required by the Commission as a condition to the availability of an exemption from the Securities Act for the sale of any Warrant or Restricted Common Stock.

11. LOSS OR MUTILATION

Upon receipt by Company from any Holder of evidence reasonably satisfactory to it of the ownership of and the loss, theft, destruction or mutilation of this Warrant and indemnity reasonably satisfactory to it (it being understood that the written agreement of such Holder shall be sufficient indemnity), and in case of mutilation upon surrender and cancellation hereof, Company will execute and deliver in lieu hereof a new Warrant of like tenor to such Holder; provided, in the case of mutilation, no indemnity shall be required if this Warrant in identifiable form is surrendered to Company for cancellation.

12. OFFICE OF COMPANY

As long as any of the Warrants remain outstanding, Company shall maintain an office or agency (which may be the principal executive offices of Company) where the Warrants may be presented for exercise, registration of transfer, division or combination as provided in this Warrant.

13. BUSINESS INFORMATION

Company will file on or before the required date all regular or periodic reports (pursuant to the Exchange Act) with the Commission and will deliver to Holder promptly upon their becoming available one copy of each report, notice or proxy statement sent by Company to its stockholders generally.

14. LIMITATION OF LIABILITY

No provision hereof, in the absence of affirmative action by Holder to purchase shares of Common Stock, and no enumeration herein of the rights or privileges of Holder hereof, shall give rise to any liability of such Holder for the purchase price of any Common Stock or as a stockholder of Company, whether such liability is asserted by Company or by creditors of Company.

15. MISCELLANEOUS

15.1. Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice Holder's rights, powers or remedies. If Company fails to make, when due, any payments provided for hereunder, or fails to comply with any other provision of this Warrant, Company shall pay to Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

15.2. Notice Generally. Any notice, demand, request, consent, approval, declaration, delivery or other communication hereunder to be made pursuant to the provisions of this Warrant shall be sufficiently given or made if in writing and either delivered in person with receipt acknowledged or sent by registered or certified mail, return receipt requested, postage prepaid, or by telecopy and confirmed by telecopy answerback, addressed as follows:

(a) If to any Holder or holder of Warrant Stock, at its last known address appearing on the books of Company maintained for such purpose.

(b) If to Company at

Brush Engineered Materials Inc. 17876 St. Clair Avenue
Cleveland, Ohio 44110

or at such other address as may be substituted by notice given as herein provided. The giving of any notice required hereunder may be waived in writing by the party entitled to receive such notice. Every notice, demand, request, consent, approval, declaration, delivery or other communication hereunder shall be deemed to have been duly given or served on the date on which personally delivered, with receipt acknowledged, telecopied and confirmed by telecopy answerback, or three (3) Business Days after the same shall have been deposited in the United States mail. Failure or delay in delivering copies of any notice, demand, request, approval, declaration, delivery or other communication to the person designated above to receive a copy shall in no way adversely affect the effectiveness of such notice, demand, request, approval, declaration, delivery or other communication.

15.3. Indemnification. Company agrees to indemnify and hold harmless Holder from and against any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses and disbursements of any kind which may be imposed upon, incurred by or asserted against Holder in any manner relating to or arising out of (i) Holder's exercise of this Warrant and/or ownership of any shares of Warrant Stock issued in consequence thereof, or (ii) any litigation to which Holder is made a party in its capacity as a stockholder of Company; provided, however, that Company will not be liable hereunder to the extent that any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses or disbursements resulted from Holder's gross negligence, bad faith or willful misconduct in its capacity as a stockholder or warrant holder of Company.

15.4. Remedies. Each holder of Warrant and Warrant Stock, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under Section 9 of this Warrant. Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of Section 9 of this Warrant and hereby agrees to waive the defense in any action for specific performance that a remedy at law would be adequate.

15.5. Successors and Assigns. Subject to the provisions of Sections 3.1 and 9, this Warrant and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors of Company and the successors and assigns of Holder. The provisions of this Warrant are intended to be for the benefit of all Holders from time to time of this Warrant and, with respect to Section 9 hereof, holders of Warrant Stock, and shall be enforceable by any such Holder or holder of Warrant Stock.

15.6. Amendment. This Warrant and all other Warrants may be modified or amended or the provisions hereof waived with the written consent of Company and the Majority Holders, provided that no such Warrant may be modified or amended to reduce the number of shares of Common Stock for which such Warrant is exercisable or to increase the price at which such shares may be purchased upon exercise of such Warrant (before giving effect to any adjustment as provided therein) without the prior written consent of the Holder thereof.

15.7. Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Warrant.

15.8. Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

15.9. Governing Law. This Warrant shall be governed by the laws of the State of New York, without regard to the provisions thereof relating to conflict of laws.

15.10. Waiver of Jury Trial. Company hereby irrevocably waives all right to trial by jury in any action, proceeding or counterclaim (whether based on contract, tort or otherwise) arising out of or relating to this Warrant or the enforcement of all rights and defenses under this Warrant.

IN WITNESS WHEREOF, Company has caused this Warrant to be duly executed and its corporate seal to be impressed hereon and attested by its Secretary or an Assistant Secretary.

Dated: December 4, 2003

BRUSH ENGINEERED MATERIALS INC.

By: _____
Name: John Grampa
Title: VP, Finance

Attest:

By: _____
Name:
Title:

EXHIBIT A

SUBSCRIPTION FORM

[To be executed only upon exercise of Warrant]

The undersigned registered owner of this Warrant irrevocably exercises this Warrant for the purchase of _____ shares of Common Stock of Brush Engineered Materials Inc. and herewith makes payment therefor, all at the price and on the terms and conditions specified in this Warrant and requests that certificates for the shares of Common Stock hereby purchased (and any securities or other property issuable upon such exercise) be issued in the name of and delivered to _____ whose address is _____ and, if such shares of Common Stock shall not include all of the shares of Common Stock issuable as provided in this Warrant, that a new Warrant of like tenor and date for the balance of the shares of Common Stock issuable hereunder be delivered to the undersigned.

(Name of Registered Owner)

(Signature of Registered Owner)

(Street Address)

(City) (State) (Zip Code)

NOTICE: The signature on this subscription must correspond with the name as
written upon the face of the within Warrant in every particular,
without alteration or enlargement or any change whatsoever.

EXHIBIT B

ASSIGNMENT FORM

FOR VALUE RECEIVED the undersigned registered owner of this Warrant hereby sells, assigns and transfers unto the Assignee named below all of the rights of the undersigned under this Warrant, with respect to the number of shares of Common Stock set forth below:

Name and Address of Assignee

No. of Shares of
Common Stock

and does hereby irrevocably constitute and appoint _____ attorney-in-fact to register such transfer on the books of Brush Engineered Materials Inc. maintained for the purpose, with full power of substitution in the premises.

Dated: _____

Print Name: _____

Signature: _____

Witness: _____

NOTICE: The signature on this subscription must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

Exhibit (4j)

**WARRANT
To Purchase Common Stock of
BRUSH ENGINEERED MATERIALS INC.**

THIS WARRANT AND THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE TRANSFERRED IN VIOLATION OF SUCH ACT, THE RULES AND REGULATIONS THEREUNDER OR THE PROVISIONS OF THIS WARRANT.

No. of Shares of Common Stock: 16,429 No. 2

**WARRANT
To Purchase Common Stock of
BRUSH ENGINEERED MATERIALS INC.**

THIS IS TO CERTIFY THAT, BANK ONE, NA, or registered assigns, is entitled, at any time prior to the Expiration Date (as hereinafter defined), to purchase from BRUSH ENGINEERED MATERIALS INC., an Ohio corporation ("Company"), 16,429 shares of Common Stock (as hereinafter defined and subject to adjustment as provided herein), in whole or in part, including fractional parts, at a purchase price of \$0.01 per share, all on the terms and conditions and pursuant to the provisions hereinafter set forth.

1. DEFINITIONS

As used in this Warrant, the following terms have the respective meanings set forth below (all capitalized used herein and not defined shall have the same meanings ascribed to them in the Loan Agreement):

"Additional Shares of Common Stock" shall mean all shares of Common Stock issued by Company after the Closing Date, other than Warrant Stock.

"Commission" shall mean the Securities and Exchange Commission or any other federal agency then administering the Securities Act and other federal securities laws.

"Common Stock" shall mean (except where the context otherwise indicates) the Common Stock, no par value per share, of Company as constituted on the Closing Date, and any capital stock into which such Common Stock may thereafter be changed, and shall also include (i) capital stock of Company of any other class (regardless of how denominated) issued to the holders of shares of Common Stock upon any reclassification thereof which is also not preferred as to dividends or assets over any other class of stock of Company and which is not subject to redemption and (ii) shares of common stock of any successor or acquiring corporation received by or distributed to the holders of Common Stock of Company.

"Convertible Securities" shall mean evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable, with or without payment of additional consideration in cash or property, for Additional Shares of Common Stock, either immediately or upon the occurrence of a specified date or a specified event.

"Current Market Price" shall mean, in respect of any share of Common Stock on any date herein specified, (a) if there shall then be a public market for the Common Stock, the average of

the daily market prices for 10 consecutive Business Days commencing 10 Business Days before such date. The daily market price for each such Business Day shall be (i) the last sale price on such day on the principal stock exchange or NASDAQ Stock Market ("NASDAQ") on which such Common Stock is then listed or admitted to trading, (ii) if no sale takes place on such day on any such exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day as officially quoted on any such exchange or NASDAQ, (iii) if the Common Stock is not then listed or admitted to trading on any stock exchange or NASDAQ, the average of the last reported closing bid and asked prices on such day in the over-the-counter market, as furnished by the National Association of Securities Dealers Automatic Quotation System or the National Quotation Bureau, Inc., (iv) if neither such corporation at the time is engaged in the business of reporting such prices, as furnished by any similar firm then engaged in such business, or (v) if there is no such firm, as furnished by any member of the NASD selected mutually by the Majority Holders and Company or, if they cannot agree upon such selection, as selected by two such members of the NASD, one of which shall be selected by the Majority Holders and one of which shall be selected by Company, or (b) if there is no such public market, the fair market value thereof as determined in good faith by Company's Board of Directors.

"Current Warrant Price" shall mean, in respect of a share of Common Stock at any date herein specified, the price at which a share of Common Stock may be purchased pursuant to this Warrant on such date.

"Demand Notice" shall have the meaning set forth in Section 9.3(a).

"Demand Registration Period" shall mean any period of time during which Company is eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto during the period beginning on the date of this Warrant and ending on the first anniversary of this Warrant.

"Disadvantageous Condition" shall mean, at any time, the existence of a condition such that the filing of a registration statement or the use of an effective registration to make resales would (i) interfere with or affect the negotiation or completion of any plan or proposal by Company to engage in any significant transaction at such time or (ii) require disclosure of information that the Company has a bona fide business purpose for preserving as confidential.

"Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect from time to time.

"Exercise Period" shall mean the period during which this Warrant is exercisable pursuant to Section 2.1.

"Expiration Date" shall mean December 5, 2008.

"Filing Date" shall mean the earlier of (i) the date on which Company has filed with the Commission its Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and (ii) March 31, 2004.

"Guggenheim" shall mean any affiliates of Guggenheim Corporate Funding, LLC who hold Warrants or Warrant Stock.

"Holder" shall mean the Person in whose name the Warrant set forth herein is registered on the books of Company maintained for such purpose.

"Loan Agreement" shall mean the Loan Agreement dated as of December 4, 2003, by and among Company, the other credit parties party thereto as guarantors, the lenders named therein and Guggenheim Corporate Funding, LLC, as collateral agent for such lenders, as amended, supplemented or otherwise modified from time to time.

"Majority Holders" shall mean the holders of Warrants exercisable for in excess of 50% of the aggregate number of shares of Common Stock then purchasable upon exercise of all Warrants, whether or not then exercisable.

"NASD" shall mean the National Association of Securities Dealers, Inc., or any successor corporation thereto.

"Other Property" shall have the meaning set forth in Section 4.3.

"Outstanding" shall mean, when used with reference to Common Stock, at any date as of which the number of shares thereof is to be determined, all issued shares of Common Stock, except shares then owned or held by or for the account of Company or any subsidiary thereof, and shall include all shares issuable in respect of outstanding scrip or any certificates representing fractional interests in shares of Common Stock.

"Restricted Common Stock" shall mean shares of Common Stock which are, or which upon their issuance on the exercise of this Warrant would be, evidenced by a certificate bearing the restrictive legend set forth in Section 9.1(a).

"Securities Act" shall mean the Securities Act of 1933, as amended, or any similar federal statute, and the rules and regulations of the Commission thereunder, all as the same shall be in effect at the time.

"Transfer" shall mean any disposition of any Warrant or Warrant Stock or of any interest in either thereof, which would constitute a sale thereof within the meaning of the Securities Act.

"Transfer Notice" shall have the meaning set forth in Section 9.2.

"Warrants" shall mean this Warrant and all other Warrants issued pursuant to the Loan Agreement, and all warrants issued upon transfer, division or combination of, or in substitution for, any thereof. All Warrants shall at all times be identical as to terms and conditions and date, except as to the number of shares of Common Stock for which they may be exercised.

"Warrant Price" shall mean an amount equal to (i) the number of shares of Common Stock being purchased upon exercise of this Warrant pursuant to Section 2.1, multiplied by (ii) the Current Warrant Price as of the date of such exercise.

"Warrant Stock" shall mean the shares of Common Stock purchased by the holders of the Warrants upon the exercise thereof.

2. EXERCISE OF WARRANT

2.1. Manner of Exercise. From and after the Closing Date and until 5:00 P.M., New York time, on the Expiration Date, Holder may exercise this Warrant, on any Business Day, for all or any part of the number of shares of Common Stock purchasable hereunder.

In order to exercise this Warrant, in whole or in part, Holder shall deliver to Company at its principal office at 17876 St. Clair Avenue, Cleveland, Ohio 44110, or at the office or agency designated by Company pursuant to Section 12, (i) a written notice of Holder's election to exercise this Warrant, which notice shall specify the number of shares of Common Stock to be purchased, (ii) payment of the Warrant Price and (iii) this Warrant. Such notice shall be substantially in the form of the subscription form appearing at the end of this Warrant as Exhibit A, duly executed by Holder or its agent or attorney. Upon receipt thereof, Company shall, as promptly as practicable, and in any event within ten (10) Business Days thereafter, execute or cause to be executed and deliver or cause to be delivered to Holder a certificate or certificates representing the aggregate number of full shares of Common Stock issuable upon such exercise. The stock certificate or certificates so delivered shall be, to the extent possible, in such denomination or denominations as such Holder shall request in the notice and shall be registered in the name of Holder or, subject to Section 9, such other name as shall be designated in the notice. This Warrant shall be deemed to have been exercised and such certificate or certificates shall be deemed to have been issued, and Holder or any other Person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the notice is received by Company so long as the cash or check or other payment provided below and this Warrant are received by Company promptly thereafter and all taxes required to be paid by Holder, if any, pursuant to Section 2.2 prior to the issuance of such shares have been paid. If this Warrant shall have been exercised in part, Company shall, at the time of delivery of the certificate or certificates representing Warrant Stock, deliver to Holder a new Warrant evidencing the rights of Holder to purchase the unpurchased shares of Common Stock called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant, or, at the request of Holder, appropriate notation may be made on this Warrant and the same returned to Holder. Notwithstanding any provision herein to the contrary, Company shall not be required to register shares in the name of any Person who acquired this Warrant (or part hereof) or any Warrant Stock otherwise than in accordance with this Warrant.

Payment of the Warrant Price shall be made at the option of the Holder by (i) check, and/or (ii) by the Holder's surrender to Company of that number of shares of Warrant Stock (or the right to receive such number of shares) or shares of Common Stock having an aggregate Current Market Price equal to or greater than the Current Warrant Price for all shares then being purchased (including those being surrendered), or (iii) any combination thereof, duly endorsed by or accompanied by appropriate instruments of transfer duly executed by Holder or by Holder's attorney duly authorized in writing.

2.2. Payment of Taxes. Company shall pay all expenses in connection with, and all taxes and other governmental charges that may be imposed with respect to, the issuance or

delivery of the shares of Common Stock issuable upon exercise of this Warrant, unless such tax or charge is imposed by law upon Holder, in which case such taxes or charges shall be paid by Holder. Company shall not be required, however, to pay any tax or other charge imposed in connection with any transfer involved in the issue of any certificate for shares of Common Stock issuable upon exercise of this Warrant in any name other than that of Holder, and in such case Company shall not be required to issue or deliver any stock certificate until such tax or other charge has been paid or it has been established to the reasonable satisfaction of Company that no such tax or other charge is due.

2.3. Fractional Shares. Company shall not be required to issue a fractional share of Common Stock upon exercise of any Warrant. If any fraction of a share of Common Stock would be deliverable upon exercise of this Warrant, Company may, in lieu of delivering such fractional share, (a) make a cash payment to the Holder in an amount equal to the same fraction of the Current Market Price determined as of the Business Day immediately preceding the date of exercise of this Warrant or (b) round up the number of shares to be delivered to the nearest whole share.

2.4. Continued Validity. A holder of shares of Common Stock issued upon the exercise of this Warrant, in whole or in part (other than a holder who acquires such shares after the same have been publicly sold pursuant to a registration statement under the Securities Act or sold pursuant to Rule 144 thereunder), shall continue with respect to such shares to be entitled to all rights and subject to all obligations to which it would have been entitled as Holder under Sections 9, 10 and 14 of this Warrant. Company will, at the time of each exercise of this Warrant, in whole or in part, upon the request of the holder of the shares of Common Stock issued upon such exercise hereof, acknowledge in writing, in form reasonably satisfactory to such holder, its continuing obligation to afford to such holder all such rights and obligations; provided, however, that if such holder shall fail to make any such request, such failure shall not affect the continuing obligation of Company to afford to such holder all such rights and obligations.

3. TRANSFER DIVISION AND COMBINATION

3.1. Transfer. Subject to compliance with Section 9, transfer of this Warrant, in whole or in part, and all attendant rights hereunder, shall be registered on the books of Company to be maintained for such purpose, upon surrender of this Warrant at the principal office of Company referred to in

Section 2.1 or the office or agency designated by Company pursuant to Section 12, together with a written assignment of this Warrant substantially in the form of Exhibit B hereto duly executed by Holder or its agent or attorney. Upon such surrender, Company shall, subject to Section 9, execute and deliver a new Warrant or Warrants in the name of the assignee or assignees and in the denomination specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. A Warrant, if properly assigned in compliance with Section 9, may be exercised by a new Holder for the purchase of shares of Common Stock prior to the issuance of a new Warrant.

3.2. Division and Combination. Subject to Section 9, this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office or agency of

Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by Holder or its agent or attorney. Subject to compliance with Section 3.1 and with Section 9, as to any transfer which may be involved in such division or combination, Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice.

3.3. Expenses. Company shall prepare, issue and deliver at its own expense (other than transfer taxes) the new Warrant or Warrants under this Section 3.

3.4. Maintenance of Books. Company agrees to maintain, at its aforesaid office or agency, books for the registration and the registration of transfer of the Warrants.

4. ADJUSTMENTS

The number of shares of Common Stock for which this Warrant is exercisable, or the price at which such shares may be purchased upon exercise of this Warrant, shall be subject to adjustment from time to time as set forth in this Section 4.

4.1. Stock Dividends Subdivisions and Combinations. If at any time Company shall:

(a) take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend payable in, or other distribution of, Additional Shares of Common Stock,

(b) subdivide its outstanding shares of Common Stock into a larger number of shares of Common Stock, or

(c) combine its outstanding shares of Common Stock into a smaller number of shares of Common Stock,

then (i) the number of shares of Common Stock for which this Warrant is exercisable immediately after the occurrence of any such event shall be adjusted to equal the number of shares of Common Stock which a record holder of the same number of shares of Common Stock for which this Warrant is exercisable immediately prior to the occurrence of such event would own or be entitled to receive after the happening of such event, and (ii) the Current Warrant Price shall be adjusted to equal (A) the Current Warrant Price multiplied by the number of shares of Common Stock for which this Warrant is exercisable immediately prior to the adjustment divided by (B) the number of shares for which this Warrant is exercisable immediately after such adjustment.

4.2. Certain Other Distributions. If at any time Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive any dividend or other distribution of:

(a) cash,

(b) any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock), or

(c) any warrants or other rights to subscribe for or purchase any evidences of its indebtedness, any shares of its stock or any other securities or property of any nature whatsoever (other than cash, Convertible Securities or Additional Shares of Common Stock),

Holder shall be entitled to receive such dividend or distribution upon exercise of the Warrant as if Holder had exercised the Warrant at the time of the taking of such record.

4.3. Reorganization Reclassification Merger Consolidation or Disposition of Assets. In case Company shall reorganize its capital, reclassify its capital stock, consolidate or merge with or into another Person (where Company is not the surviving Person or where there is a change in or distribution with respect to the Common Stock of Company), or sell, transfer or otherwise dispose of all or substantially all its property, assets or business to another Person (any such transaction, a "Change of Control Transaction") and, pursuant to the terms of such reorganization, reclassification, merger, consolidation or disposition of assets, shares of common stock of the successor or acquiring Person, or any cash, shares of stock or other securities or property of any nature whatsoever (including warrants or other subscription or purchase rights) in addition to or in lieu of common stock of the successor or acquiring corporation ("Other Property"), are to be received by or distributed to the holders of Common Stock of Company, then each Holder shall have the right thereafter to receive, upon exercise of such Warrant, the number of shares of common stock of the successor or acquiring Person or of Company, if it is the surviving Person, and Other Property receivable upon or as a result of such reorganization, reclassification, merger, consolidation or disposition of assets by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such event. In case of any such reorganization, reclassification, merger, consolidation or disposition of assets, the successor or acquiring Person (if other than Company) shall expressly assume the due and punctual observance and performance of each and every covenant and condition of this Warrant to be performed and observed by Company and all the obligations and liabilities hereunder, subject to such modifications as may be deemed appropriate (as determined by resolution of the Board of Directors of Company) in order to provide for adjustments of shares of Common Stock for which this Warrant is exercisable which shall be as nearly equivalent as practicable to the adjustments provided for in this Section 4. For purposes of this Section 4.3, "common stock of the successor or acquiring Person" shall include stock of such Person of any class which is not preferred as to dividends or assets over any other class of stock of such corporation and which is not subject to redemption and shall also include any evidences of indebtedness, shares of stock or other securities which are convertible into or exchangeable for any such stock, either immediately or upon the arrival of a specified date or the happening of a specified event and any warrants or other rights to subscribe for or purchase any such stock. The foregoing provisions of this Section 4.3 shall similarly apply to successive reorganizations, reclassifications, mergers, consolidations or disposition of assets. Notwithstanding the foregoing, if any Change of Control Transaction occurs at any time that all obligations under the Loan Agreement are satisfied and the Loan Agreement is terminated, then each Holder shall be required to exercise its Warrant in connection with such Change of Control Transaction and be entitled to receive the Other Property issuable to holders of Common Stock of the Company.

4.4. Other Action Affecting Common Stock. In case at any time or from time to time Company shall take any action in respect of its Common Stock, other than any action described in this Section 4, then, unless such action will not have a materially adverse effect upon the rights of the Holders, the number of shares of Common Stock or other stock for which this Warrant is exercisable and/or the purchase price thereof shall be adjusted in such manner as may be equitable in the circumstances.

5. NOTICES TO WARRANT HOLDERS

5.1. Notice of Adjustments. Whenever the number of shares of Common Stock for which this Warrant is exercisable, or whenever the price at which a share of such Common Stock may be purchased upon exercise of the Warrants, shall be adjusted pursuant to Section 4, Company shall forthwith prepare a certificate to be executed by an executive officer of Company setting forth, in reasonable detail, the event requiring the adjustment and the method by which such adjustment was calculated, specifying the number of shares of Common Stock for which this Warrant is exercisable and (if such adjustment was made pursuant to Section 4.2 or 4.3) describing the number and kind of any other shares of stock or Other Property for which this Warrant is exercisable, and any change in the purchase price or prices thereof, after giving effect to such adjustment or change. Company shall promptly cause a signed copy of such certificate to be delivered to each Holder in accordance with Section 15.2. Company shall keep at its office or agency designated pursuant to Section 12 copies of all such certificates and cause the same to be available for inspection at said office during normal business hours by any Holder or any prospective purchaser of a Warrant designated by a Holder thereof.

5.2. Notice of Corporate Action. If at any time:

(a) Company shall take a record of the holders of its Common Stock for the purpose of entitling them to receive a dividend or other distribution, or any right to subscribe for or purchase any evidences of its indebtedness, any shares of stock of any class or any other securities or property, or to receive any other right, or

(b) there shall be any capital reorganization of Company, any reclassification or recapitalization of the capital stock of Company or any consolidation or merger of Company with, or any sale, transfer or other disposition of all or substantially all the property, assets or business of Company to, another Person, or

(c) there shall be a voluntary or involuntary dissolution, liquidation or winding up of Company;

then, in any one or more of such cases, Company shall give to Holder (i) at least 30 days' prior written notice of the date on which a record date shall be selected for such dividend, distribution or right or for determining rights to vote in respect of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, and (ii) in the case of any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up, at least 30 days' prior written notice of the date when the same shall take place. Such notice in accordance with the foregoing clause also shall specify

(i) the date on which any such record is to be taken for the purpose of such

dividend, distribution or right, the date on which the holders of Common Stock shall be entitled to any such dividend, distribution or right, and the amount and character thereof, and (ii) the date on which any such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up is to take place and the time, if any such time is to be fixed, as of which the holders of Common Stock shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such reorganization, reclassification, merger, consolidation, sale, transfer, disposition, dissolution, liquidation or winding up. Each such written notice shall be delivered to Holder in accordance with Section 15.2.

6. NO IMPAIRMENT

Company shall not intentionally take any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder against impairment. Without limiting the generality of the foregoing, Company will (a) take all such action necessary in order that Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, including such action as is necessary for the Current Warrant Price to be not less than the par value of the shares of Common Stock issuable upon exercise of this Warrant, and (b) use its commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable Company to perform its obligations under this Warrant.

7. RESERVATION AND AUTHORIZATION OF COMMON STOCK; REGISTRATION WITH OR APPROVAL OF ANY GOVERNMENTAL AUTHORITY

From and after the Closing Date, Company shall at all times reserve and keep available for issue upon the exercise of Warrants such number of its authorized but unissued shares of Common Stock as will be sufficient to permit the exercise in full of all outstanding Warrants. All shares of Common Stock which shall be so issuable, when issued upon exercise of any Warrant and payment therefor in accordance with the terms of such Warrant, shall be duly and validly issued and fully paid and nonassessable, and not subject to preemptive rights.

Before taking any action which would cause an adjustment reducing the Current Warrant Price below the then par value, if any, of the shares of Common Stock issuable upon exercise of the Warrants, Company shall take any corporate action which may be necessary in order that Company may validly and legally issue fully paid and non-assessable shares of such Common Stock at such adjusted Current Warrant Price. Before taking any action which would result in an adjustment in the number of shares of Common Stock for which this Warrant is exercisable or in the Current Warrant Price, Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

If any shares of Common Stock required to be reserved for issuance upon exercise of Warrants require registration or qualification with any governmental authority or other governmental approval or filing under any federal or state law (other than registration rights as provided in Section 9) before such shares may be so issued, Company will in good faith and as expeditiously as possible and at its expense endeavor to cause such shares to be duly registered.

8. TAKING OF RECORD STOCK AND WARRANT TRANSFER BOOKS

In the case of all dividends or other distributions by Company to the holders of its Common Stock with respect to which any provision of Section 4 refers to the taking of a record of such holders, Company will in each such case take such a record and will take such record as of the close of business on a Business Day. Company will not at any time, except upon dissolution, liquidation or winding up of Company, close its stock transfer books or warrant transfer books so as to result in preventing or delaying the exercise or transfer of any Warrant.

9. RESTRICTIONS ON TRANSFERABILITY

The Warrants and the Warrant Stock shall not be transferred, hypothecated or assigned before satisfaction of the conditions specified in this Section 9, which conditions are intended to ensure compliance with the provisions of the Securities Act with respect to the Transfer of any Warrant or any Warrant Stock. Holder, by acceptance of this Warrant, agrees to be bound by the provisions of this Section 9.

9.1. Restrictive Legend. (a) Except as otherwise provided in this Section 9, each certificate for Warrant Stock initially issued upon the exercise of this Warrant, and each certificate for Warrant Stock issued to any subsequent transferee of any such certificate, shall be stamped or otherwise imprinted with a legend in substantially the following form:

"The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act or the rules and regulations thereunder."

(b) Except as otherwise provided in this Section 9, each Warrant shall be stamped or otherwise imprinted with a legend in substantially the following form:

"This Warrant and the securities represented hereby have not been registered under the Securities Act of 1933, as amended, and may not be transferred in violation of such Act, the rules and regulations thereunder or the provisions of this Warrant."

9.2. Notice of Proposed Transfers, Requests for Registration. Prior to or promptly following any Transfer of any Warrants or any shares of Restricted Common Stock, the holder of such Warrants or Restricted Common Stock shall give written notice (a "Transfer Notice") to Company of such Transfer accompanied by an opinion of counsel reasonably acceptable to Company, in form and substance reasonably acceptable to Company, to the effect that such Transfer will not be in violation of the Securities Act or any other applicable securities laws. Each certificate, if any, evidencing such shares of Restricted Common Stock issued upon such

Transfer shall bear the restrictive legend set forth in Section 9.1(a), and each Warrant issued upon such Transfer shall bear the restrictive legend set forth in

Section 9.1(b), unless in the opinion of counsel to such holder which is reasonably acceptable to Company such legend is not required in order to ensure compliance with the Securities Act.

The holders of Warrants and Warrant Stock shall have the right to request registration of such Warrant Stock pursuant to Section 9.3 and Section 9.4.

9.3. Demand Registration. (a) Subject to the provisions of this Section 9.3, on one occasion during the Demand Registration Period, the Majority Holders or Guggenheim may request by written notice (the "Demand Notice") to Company that Company register under the Securities Act the resale of such shares of Warrant Stock held by the Majority Holders or Guggenheim, as the case may be, pursuant to a registration statement on Form S-3 or any successor form thereto. Upon receipt of the Demand Notice, Company shall promptly notify all holders of Warrants and Warrant Stock in writing of the receipt of such Demand Notice and each such holder, in lieu of exercising its rights under Section 9.4, may elect by written notice to Company within 15 days after receipt of such notice from Company to have its shares of Warrant Stock included in such registration. In such event, and subject to the other provisions of this Section 9, Company shall use its commercially reasonable efforts to prepare documentation and effect registration under the Securities Act of all shares of the Warrant Stock that Company has been requested to register pursuant to this Section 9.3, all to the extent required to permit the disposition of such Warrant Stock in accordance with the intended methods of disposition of the holders thereof.

(b) Notwithstanding anything to the contrary in this Section 9.3, if Company determines reasonably and in good faith that a Disadvantageous Condition exists, (i) Company will have the right to defer the filing of a registration statement requested pursuant to this Section 9.3; provided, however, that in no event may Company defer filing hereunder for more than 45 days from the first date of such determination by Company and (ii) Company may suspend, for up to 45 days, use of a registration statement filed pursuant to this Section 9.3 that has been declared effective by the Commission. Company will provide notice to the holders of Warrants and Warrant Stock of the Company's determination that a Disadvantageous Condition exists. Company shall use its reasonable efforts to cause the period during which a registration statement filed pursuant to this Section 9.3 is to remain effective pursuant to Section 9.5 to be extended by the number of days of any such suspension on account of a Disadvantageous Condition.

(c) Notwithstanding anything to the contrary in this Section 9.3, Company will not be required to effect a registration pursuant to this Section 9.3, (i) unless Company is then eligible to register Warrant Stock under the Securities Act on Form S-3 or any successor form thereto and (ii) in any particular jurisdiction in which Company would be required to execute a general consent to service of process in effecting such registration.

9.4. Incidental Registration. If Company at any time proposes to file on its behalf and/or on behalf of any of its security holders (the "demanding security holders") a registration statement under the Securities Act on any form (other than a registration statement on Form S-4 or S-8 or any successor form for securities to be offered in a transaction of the type referred to in

Rule 145 under the Securities Act or to employees of Company pursuant to any employee benefit plan, respectively) for the general registration of securities to be sold for cash with respect to its Common Stock or any other class of equity security (as defined in Section 3(a)(11) of the Exchange Act) of Company, it will give written notice to all holders of Warrants or Warrant Stock at least 30 days before the initial filing with the Commission of such registration statement, which notice shall set forth the intended method of disposition of the securities proposed to be registered by Company. The notice shall offer to include in such filing the aggregate number of shares of Warrant Stock, and the number of shares of Common Stock for which this Warrant is exercisable, as such holders may request.

Each holder of any such Warrants or any such Warrant Stock desiring to have Warrant Stock registered under this Section 9.4 shall advise Company in writing within 15 days after the date of receipt of such offer from Company, setting forth the amount of such Warrant Stock for which registration is requested. Company shall thereupon include in such filing the number of shares of Warrant Stock for which registration is so requested, subject to the next sentence, and shall use its best efforts to effect registration under the Securities Act of such shares. If the managing underwriter of a proposed public offering shall advise Company in writing that, in its opinion, the distribution of the Warrant Stock requested to be included in the registration concurrently with the securities being registered by Company or such demanding security holder would materially and adversely affect the distribution of such securities by Company or such demanding security holder, then all selling security holders shall reduce the amount of securities each intended to distribute through such offering on a pro rata basis.

9.5. Registration Procedures. If Company is required by the provisions of this Section 9 to use its commercially reasonable efforts to effect the registration of any of its securities under the Securities Act, Company will,

(i) in the case of a registration of securities pursuant to Section 9.3, as expeditiously as possible after the Filing Date, and (ii) in the case of a registration of securities pursuant to Section 9.4, as expeditiously as possible:

(a) prepare and file with the Commission a registration statement with respect to such securities and use its commercially reasonable efforts to cause such registration statement to become and remain effective for a period of time required for the disposition of such securities by the holders thereof, but not to exceed 120 days;

(b) prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection therewith as may be necessary to keep such registration statement effective and to comply with the provisions of the Securities Act with respect to the sale or other disposition of all securities covered by such registration statement until the earlier of such time as all of such securities have been disposed of in a public offering or the expiration of 120 days;

(c) furnish to such selling security holders such number of copies of a summary prospectus or other prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents, as such selling security holders may reasonably request;

(d) use its commercially reasonable efforts to register or qualify the securities covered by such registration statement under such other securities or blue sky laws of such jurisdictions within the United States and Puerto Rico as each holder of such securities shall reasonably request (provided, however, that Company shall not be obligated to qualify as a foreign corporation to do business under the laws of any jurisdiction in which it is not then qualified or to file any general consent to service or process), and do such other reasonable acts and things as may be required of it to enable such holder to consummate the disposition in such jurisdiction of the securities covered by such registration statement;

(e) furnish, at the request of any holder requesting registration of Warrant Stock pursuant to Section 9.3, on the date that such shares of Warrant Stock are delivered to the underwriters for sale pursuant to such registration, on the date that the registration statement with respect to such shares of Warrant Stock becomes effective, (1) an opinion, dated such date, of the independent counsel representing Company for the purposes of such registration, addressed to the underwriters in customary form and covering matters of the type customarily covered in such legal opinions; and (2) a comfort letter dated such date, from the independent certified public accountants of Company, addressed to the underwriters and, if such accountants refuse to deliver such letter to such holder, then to Company in a customary form and covering matters of the type customarily covered by such comfort letters as the underwriters or such holders shall reasonably request;

(f) enter into customary agreements (including an underwriting agreement in customary form on the same terms as any underwriting agreement required by the underwriter to be entered into on the part of the selling security holders) and take such other actions as are reasonably required in order to facilitate the disposition of such securities; and

(g) otherwise use its commercially reasonable efforts to comply with all applicable rules and regulations of the Commission, and make available to its security holders, as soon as reasonably practicable, but not later than 18 months after the effective date of the registration statement, an earnings statement covering the period of at least 12 months beginning with the first full month after the effective date of such registration statement, which earnings statements shall satisfy the provisions of Section 11(a) of the Securities Act.

It shall be a condition precedent to the obligation of Company to take any action pursuant to this Section 9 in respect of the securities which are to be registered at the request of any holder of Warrants or Warrant Stock that such holder shall furnish to Company such information regarding the securities held by such holder and the intended method of disposition thereof as Company shall reasonably request and as shall be required in connection with the action taken by Company.

9.6. Expenses. All expenses incurred in complying with Section 9, including, without limitation, all registration and filing fees (including all expenses incident to filing with the NASD), printing expenses, fees and disbursements of counsel for Company, the reasonable fees and expenses of one counsel for the selling security holders (selected by those holding a majority of the shares being registered), expenses of any special audits incident to or required by any such registration and expenses of complying with the securities or blue sky laws of any jurisdictions pursuant to Section 9.5(d), shall be paid by Company, except that

(a) In the event Company, in its sole discretion shall determine to allow a registration statement to remain effective for a period longer than 120 days, all such expenses in connection with any amendment or supplement to the registration statement or prospectus filed more than 120 days after the effective date of such registration statement because any holder of Warrant Stock has not effected the disposition of the securities requested to be registered shall be paid by such holder; and

(b) Company shall not be liable for any fees, discounts or commissions to any underwriter or any fees or disbursements of counsel for any underwriter in respect of the securities sold by such holder of Warrant Stock.

9.7. Indemnification and Contribution. (a) In the event of any registration of any of the Warrant Stock under the Securities Act pursuant to this Section 9, Company shall indemnify and hold harmless the holder of such Warrant Stock, such holder's directors and officers, and each other Person (including each underwriter) who participated in the offering of such Warrant Stock and each other Person, if any, who controls such holder or such participating Person within the meaning of the Securities Act, against any losses, claims, damages or liabilities, joint or several, to which such holder or any such director or officer or participating Person or controlling Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon (i) any alleged untrue statement of any material fact contained, on the effective date thereof, in any registration statement under which such securities were registered under the Securities Act, any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, or (ii) any alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse such holder or such director, officer or participating Person or controlling Person for any legal or any other expenses reasonably incurred by such holder or such director, officer or participating Person or controlling Person in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that Company shall not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any alleged untrue statement or alleged omission made in such registration statement, preliminary prospectus, prospectus or amendment or supplement in reliance upon and in conformity with written information furnished to Company by such holder specifically for use therein or based upon any holder's failure to deliver any amendment or supplement provided by Company to the extent such amendment or supplement would have cured the defect giving rise to such loss, claim, damage or liability. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such holder or such director, officer or participating Person or controlling Person, and shall survive the transfer of such securities by such holder.

(b) Each holder of any Warrant Stock, by acceptance thereof, agrees to indemnify and hold harmless Company, its directors and officers and each other Person, if any, who controls Company within the meaning of the Securities Act against any losses, claims, damages or liabilities, joint or several, to which Company or any such director or officer or any such Person may become subject under the Securities Act or any other statute or at common law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon information in writing provided to Company by such holder of such Warrant

Stock specifically for use in any preliminary prospectus or final prospectus contained therein, or any amendment or supplement thereto, and contained, on the effective date thereof, in any registration statement under which securities were registered under the Securities Act at the request of such holder, but in an amount not to exceed the net proceeds received by such holder in the offering.

(c) If the indemnification provided for in this Section 9 from the indemnifying party is unavailable to an indemnified party hereunder in respect of any losses, claims, damages, liabilities or expenses referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages, liabilities or expenses in such proportion as is appropriate to reflect the relative fault of the indemnifying party and indemnified parties in connection with the actions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative fault of such indemnifying party and indemnified parties shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact, has been made by, or relates to information supplied by, such indemnifying party or indemnified parties, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action. The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include any legal or other fees or expenses reasonably incurred by such party in connection with any investigation or proceeding. The liability of any holder of Warrant Stock hereunder shall not exceed the net proceeds received by it in the offering.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 9.7(c) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in the immediately preceding paragraph. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

9.8. Termination of Restrictions. Notwithstanding the foregoing provisions of Section 9, the restrictions imposed by this Section upon the transferability of the Warrants, the Warrant Stock and the Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) and the legend requirements of Section 9.1 shall terminate as to any particular Warrant or share of Warrant Stock or Restricted Common Stock (or Common Stock issuable upon the exercise of the Warrants) (i) when and so long as such security shall have been effectively registered under the Securities Act and disposed of pursuant thereto or (ii) when Company shall have received an opinion of counsel reasonably satisfactory to it that such shares may be transferred without registration thereof under the Securities Act. Whenever the restrictions imposed by Section 9 shall terminate as to this Warrant, as hereinabove provided, the Holder hereof shall be entitled to receive from Company, at the expense of Company, a new Warrant bearing the following legend in place of the restrictive legend set forth hereon:

**"THE RESTRICTIONS ON TRANSFERABILITY OF THE WITHIN
WARRANT CONTAINED IN SECTION 9**

**HEREOF TERMINATED ON _____, ____, AND ARE OF NO
FURTHER FORCE AND EFFECT."**

All Warrants issued upon registration of transfer, division or combination of, or in substitution for, any Warrant or Warrants entitled to bear such legend shall have a similar legend endorsed thereon. Whenever the restrictions imposed by this Section shall terminate as to any share of Restricted Common Stock, as hereinabove provided, the holder thereof shall be entitled to receive from Company, at Company's expense, a new certificate representing such Common Stock not bearing the restrictive legend set forth in Section 9.1(a).

9.9. Listing on Securities Exchange. If Company shall list any shares of Common Stock on any securities exchange, it will, at its expense, list thereon, maintain and, when necessary, increase such listing of, all shares of Common Stock issued or, to the extent permissible under the applicable securities exchange rules, issuable upon the exercise of this Warrant so long as any shares of Common Stock shall be so listed during the Exercise Period.

9.10. Certain Limitations on Registration Rights. Notwithstanding the other provisions of Section 9, Company shall not be obligated to register the Warrant Stock of any holder if, in the opinion of counsel to Company reasonably satisfactory to the holder and its counsel (or, if the holder has engaged an investment banking firm, to such investment banking firm and its counsel), the sale or other disposition of such holder's Warrant Stock, in the manner proposed by such holder (or by such investment banking firm), may be effected without registering such Warrant Stock under the Securities Act.

9.11. Selection of Managing Underwriters. The managing underwriter or underwriters for any offering of Warrant Stock to be registered pursuant to Section 9.3 shall be selected by the holders of a majority of the shares being so registered (other than any shares being registered pursuant to Section 9.4) and shall be reasonably acceptable to Company.

10. SUPPLYING INFORMATION

Company shall cooperate with each Holder of a Warrant and each holder of Restricted Common Stock in supplying such information as may be reasonably necessary for such holder to complete and file any information reporting forms presently or hereafter required by the Commission as a condition to the availability of an exemption from the Securities Act for the sale of any Warrant or Restricted Common Stock.

11. LOSS OR MUTILATION

Upon receipt by Company from any Holder of evidence reasonably satisfactory to it of the ownership of and the loss, theft, destruction or mutilation of this Warrant and indemnity reasonably satisfactory to it (it being understood that the written agreement of such Holder shall be sufficient indemnity), and in case of mutilation upon surrender and cancellation hereof, Company will execute and deliver in lieu hereof a new Warrant of like tenor to such Holder; provided, in the case of mutilation, no indemnity shall be required if this Warrant in identifiable form is surrendered to Company for cancellation.

12. OFFICE OF COMPANY

As long as any of the Warrants remain outstanding, Company shall maintain an office or agency (which may be the principal executive offices of Company) where the Warrants may be presented for exercise, registration of transfer, division or combination as provided in this Warrant.

13. BUSINESS INFORMATION

Company will file on or before the required date all regular or periodic reports (pursuant to the Exchange Act) with the Commission and will deliver to Holder promptly upon their becoming available one copy of each report, notice or proxy statement sent by Company to its stockholders generally.

14. LIMITATION OF LIABILITY

No provision hereof, in the absence of affirmative action by Holder to purchase shares of Common Stock, and no enumeration herein of the rights or privileges of Holder hereof, shall give rise to any liability of such Holder for the purchase price of any Common Stock or as a stockholder of Company, whether such liability is asserted by Company or by creditors of Company.

15. MISCELLANEOUS

15.1. Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice Holder's rights, powers or remedies. If Company fails to make, when due, any payments provided for hereunder, or fails to comply with any other provision of this Warrant, Company shall pay to Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

15.2. Notice Generally. Any notice, demand, request, consent, approval, declaration, delivery or other communication hereunder to be made pursuant to the provisions of this Warrant shall be sufficiently given or made if in writing and either delivered in person with receipt acknowledged or sent by registered or certified mail, return receipt requested, postage prepaid, or by telecopy and confirmed by telecopy answerback, addressed as follows:

(a) If to any Holder or holder of Warrant Stock, at its last known address appearing on the books of Company maintained for such purpose.

(b) If to Company at

Brush Engineered Materials Inc. 17876 St. Clair Avenue Cleveland, Ohio 44110

or at such other address as may be substituted by notice given as herein provided. The giving of any notice required hereunder may be waived in writing by the party entitled to receive such notice. Every notice, demand, request, consent, approval, declaration, delivery or other communication hereunder shall be deemed to have been duly given or served on the date on which personally delivered, with receipt acknowledged, telecopied and confirmed by telecopy answerback, or three (3) Business Days after the same shall have been deposited in the United States mail. Failure or delay in delivering copies of any notice, demand, request, approval, declaration, delivery or other communication to the person designated above to receive a copy shall in no way adversely affect the effectiveness of such notice, demand, request, approval, declaration, delivery or other communication.

15.3. Indemnification. Company agrees to indemnify and hold harmless Holder from and against any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses and disbursements of any kind which may be imposed upon, incurred by or asserted against Holder in any manner relating to or arising out of (i) Holder's exercise of this Warrant and/or ownership of any shares of Warrant Stock issued in consequence thereof, or (ii) any litigation to which Holder is made a party in its capacity as a stockholder of Company; provided, however, that Company will not be liable hereunder to the extent that any liabilities, obligations, losses, damages, penalties, actions, judgments, suits, claims, costs, attorneys' fees, expenses or disbursements resulted from Holder's gross negligence, bad faith or willful misconduct in its capacity as a stockholder or warrant holder of Company.

15.4. Remedies. Each holder of Warrant and Warrant Stock, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under Section 9 of this Warrant. Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of Section 9 of this Warrant and hereby agrees to waive the defense in any action for specific performance that a remedy at law would be adequate.

15.5. Successors and Assigns. Subject to the provisions of Sections 3.1 and 9, this Warrant and the rights evidenced hereby shall inure to the benefit of and be binding upon the successors of Company and the successors and assigns of Holder. The provisions of this Warrant are intended to be for the benefit of all Holders from time to time of this Warrant and, with respect to Section 9 hereof, holders of Warrant Stock, and shall be enforceable by any such Holder or holder of Warrant Stock.

15.6. Amendment. This Warrant and all other Warrants may be modified or amended or the provisions hereof waived with the written consent of Company and the Majority Holders, provided that no such Warrant may be modified or amended to reduce the number of shares of Common Stock for which such Warrant is exercisable or to increase the price at which such shares may be purchased upon exercise of such Warrant (before giving effect to any adjustment as provided therein) without the prior written consent of the Holder thereof.

15.7. Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Warrant.

15.8. Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

15.9. Governing Law. This Warrant shall be governed by the laws of the State of New York, without regard to the provisions thereof relating to conflict of laws.

15.10. Waiver of Jury Trial. Company hereby irrevocably waives all right to trial by jury in any action, proceeding or counterclaim (whether based on contract, tort or otherwise) arising out of or relating to this Warrant or the enforcement of all rights and defenses under this Warrant.

IN WITNESS WHEREOF, Company has caused this Warrant to be duly executed and its corporate seal to be impressed hereon and attested by its Secretary or an Assistant Secretary.

Dated: December 4, 2003

BRUSH ENGINEERED MATERIALS INC.

By: _____
Name: John Grampa
Title: VP, Finance

Attest:

By: _____
Name:
Title:

EXHIBIT A

SUBSCRIPTION FORM

[To be executed only upon exercise of Warrant]

The undersigned registered owner of this Warrant irrevocably exercises this Warrant for the purchase of _____ shares of Common Stock of Brush Engineered Materials Inc. and herewith makes payment therefor, all at the price and on the terms and conditions specified in this Warrant and requests that certificates for the shares of Common Stock hereby purchased (and any securities or other property issuable upon such exercise) be issued in the name of and delivered to _____ whose address is _____ and, if such shares of Common Stock shall not include all of the shares of Common Stock issuable as provided in this Warrant, that a new Warrant of like tenor and date for the balance of the shares of Common Stock issuable hereunder be delivered to the undersigned.

(Name of Registered Owner)

(Signature of Registered Owner)

(Street Address)

(City) (State) (Zip Code)

NOTICE: The signature on this subscription must correspond with the name as
written upon the face of the within Warrant in every particular,
without alteration or enlargement or any change whatsoever.

EXHIBIT B

ASSIGNMENT FORM

FOR VALUE RECEIVED the undersigned registered owner of this Warrant hereby sells, assigns and transfers unto the Assignee named below all of the rights of the undersigned under this Warrant, with respect to the number of shares of Common Stock set forth below:

Name and Address of Assignee

No. of Shares of
Common Stock

and does hereby irrevocably constitute and appoint _____ attorney-in-fact to register such transfer on the books of Brush Engineered Materials Inc. maintained for the purpose, with full power of substitution in the premises.

Dated: _____

Print Name: _____

Signature: _____

Witness: _____

NOTICE: The signature on this subscription must correspond with the name as written upon the face of the within Warrant in every particular, without alteration or enlargement or any change whatsoever.

Exhibit 10(s)

**AMENDMENT NO. 9
TO
BRUSH ENGINEERED MATERIALS INC.
SUPPLEMENTAL RETIREMENT BENEFIT PLAN
(December 1, 1992 Restatement)**

Brush Engineered Materials Inc., an Ohio corporation, hereby adopts Amendment No. 9 to the Brush Engineered Materials Inc. Supplemental Retirement Benefit Plan (December 1, 1992 Restatement) (formerly known as the Brush Wellman Inc. Supplemental Retirement Benefit Plan) (the "Plan").

I.

Article II of the Plan is amended by adding at the end thereof the following:

Section 2.4 - Cessation of Benefit Accrual

Notwithstanding any other provision of the Plan to the contrary, John Grampa shall accrue no additional rights and benefits under the Plan after December 31, 2003. The rights and benefits under the Plan of John Grampa, except as contemplated in Section 4.1B, shall be determined as if the employment of John Grampa had terminated on December 31, 2003.

II.

Article IV of the Plan is amended by adding a new Section 4.1B immediately following Section 4.1A to provide as follows:

Section 4.1B - Special Election

(i) Notwithstanding any other provision of the Plan to the contrary, except Section 9.5 (as contemplated in this Section 4.1B), John Grampa may make a one-time election, subject to the provisions of Section 4.1B(ii), to receive, in lieu of all benefits otherwise payable to or in respect of John Grampa under the Plan, a "cash amount" equal to \$35,270 in accordance with Section 4.1B(ii) and such rules and procedures as may be established by the Company consistent with Section 4.1B(ii). The cash amount, if elected, shall be paid by the Company from the general assets of the Company in one or more payments, without interest thereon, not later than January 2, 2004.

(ii) The following conditions apply to the Special Election under Section 4.1B(i):

(a) The election under Section 4.1B(i) may be made only by delivery during a period beginning on December 10, 2003 and ending at 5:00 p.m. on December 26, 2003 by the Participant to the Company of a written election on a form prescribed therefor by the Company, which form shall be substantially in the form of Exhibit I attached hereto and made a part hereof;

(b) If John Grampa makes the election provided for under Section 4.1A(i), neither John Grampa, John Grampa's Beneficiary, nor any other person claiming through or under John Grampa shall thereafter have any rights to modify such election and all provisions of the Plan shall be construed, interpreted, and applied accordingly;

(c) If John Grampa makes the election provided for under Section 4.1B(i), neither John Grampa, John Grampa's Beneficiary, nor any other person claiming through or under John Grampa shall thereafter have any rights to any benefit under the Plan other than John Grampa's right to the cash amount provided for under Section 4.1B(i);

(d) Such election shall include a consent to Amendment No. 9 to the Plan in accordance with Section 9.5 of the Plan; and

(e) Such election shall be irrevocable after delivery thereof to the Company, and such election shall become effective upon delivery thereof to the Company.

III.

The changes to the Plan made by the foregoing Sections of this Amendment shall be effective on and after execution of this Amendment.

* * *

Executed this 22nd day of December, 2003.

BRUSH ENGINEERED MATERIALS INC.

By:
Vice President, Treasurer and Secretary

And:

EXHIBIT I

CONSENT, AGREEMENT, AND ELECTION REGARDING AMENDMENT NO. 9 TO BRUSH ENGINEERED MATERIALS INC. SUPPLEMENTAL RETIREMENT BENEFIT PLAN

I hereby irrevocably consent to and agree to the adoption of Amendment No. 9 to the Brush Engineered Materials Inc. Supplemental Retirement Benefit Plan (December 1, 1992 Restatement) (the "Plan") and the terms and conditions of such Amendment No. 9. I hereby irrevocably make the election permitted under Section 4.1B of the Plan, as added by such Amendment No. 9. The foregoing consent, agreement, and election are contingent upon the acceptance of this document by Brush Engineered Materials Inc.

I understand and acknowledge the following:

- For this consent, agreement, and election to be effective, it must be properly completed and delivered to Brush Engineered Materials Inc. at 17876 St. Clair Avenue, Cleveland, Ohio 44110-2697 to the attention of Michael C. Hasychak prior to 5:00 p.m. Eastern standard time on December 26, 2003.
- This consent, agreement, and election is irrevocable.
- I have received from Brush Engineered Materials Inc. a copy of Amendment No. 9 to the Plan.
- My consent, agreement, and election is a modification to any agreement with and/or obligation of the Company, my Employer, and/or any past, present or future affiliate or successor to the Company and/or my Employer to provide me with supplemental pension benefits.
- My election will result in my receipt of the cash amount indicated in Amendment No. 9 to the Plan (the "Cash Amount"), without interest thereon, less applicable tax and/or other withholding.
- The Cash Amount will be in lieu of all benefits otherwise payable to or in respect of me under the Plan and/or under any agreement with and/or obligation of the Company, my Employer, and/or any past, present or future affiliate or successor to the Company and/or my Employer to provide me with supplemental pension benefits.
- The Cash Amount will not be counted in determining any benefit under any benefit plan or arrangement of the Company and/or my Employer, including the Plan, the Brush Engineered Materials Inc. Pension Plan, the Brush Engineered

Materials Inc. Savings and Investment Plan, and the Brush Engineered Materials Inc. Key Employee Share Option Plan. I have received a prospectus update to the Brush Engineered Materials Inc. Savings and Investment Plan (the "SIP") describing that the Cash Amount will not be counted as compensation under the SIP.

- Capitalized terms used in this form that are not defined in this form have the meanings given them in the Plan.

- In making this consent, agreement, and election I am not relying upon any advice or representation or information provided by Brush Engineered Materials Inc. or the Organization and Compensation Committee thereof, or any of their respective employees, officers, directors or other affiliates, or the Plan Committee, except the documentation the receipt of which I have acknowledged above and the information contained herein.

John Grampa Date: December 22, 2003

Accepted and Receipt acknowledged by
Brush Engineered Materials Inc.

By

Title: Vice President, Treasurer and Secretary

Date: December 22, 2003

EXHIBIT (10gg)

BRUSH ENGINEERED MATERIALS INC.

Amendment No. 1 to the 1997 Stock Incentive Plan for Non-Employee Directors (As Amended and Restated as of May 1, 2001)

Pursuant to Section 12 of the Brush Engineered Materials Inc. 1997 Stock Incentive Plan for Non-Employee Directors (As Amended and Restated as of February 7, 2001) (the "Plan"), the Board of Directors of Brush Engineered Materials Inc. hereby amends the Plan as follows effective as of February 3, 2004.

1. Section 9 of the Plan is amended in its entirety to read as follows:

9. ASSIGNABILITY AND TRANSFERABILITY

(a) Except as provided in Section 9 (a) and 9 (b) below, no options or deferred shares shall be transferable by an Eligible Director except by will or the laws of descent and distribution, and options shall be exercisable during the lifetime of an Eligible Director only by an Eligible Director or, in the event of an Eligible Director's legal incapacity to do so, by an Eligible Director's guardian or legal representative acting on behalf of an Eligible Director in a fiduciary capacity under state law and/or court supervision.

(b) Notwithstanding Section 9 (a) above, options may be transferable upon the death of an Eligible Director, without payment of consideration therefor, to any one or more family members (as defined in the General Instructions to Form S-8 under the Securities Act of 1933) of an Eligible Director, as may have been designated in writing by an Eligible Director by means of the form of beneficiary designation approved by the Committee. Such beneficiary designation may be made at any time by an Eligible Director and shall be effective when it is filed, prior to the death of an Eligible Director, with the Committee. Any beneficiary designation may be changed by the filing of a new beneficiary designation, which will cancel any beneficiary designation previously filed with the Committee.

(c) Notwithstanding Section 9 (a) above, options may be transferable by an Eligible Director, without payment of consideration therefor, to any one or more family members (as defined in the General Instructions to Form S-8 under the Securities Act of 1933) of an Eligible Director; provided, however, that such transfer will not be effective until notice of such transfer is delivered to the Company; and provided, further, however, that any such transferee is subject to the same terms and conditions hereunder as an Eligible Director.

2. The Plan shall not otherwise be supplemented or amended by virtue of this Amendment No. 1 to the Plan, and shall remain in full force and effect.

EXHIBIT 13

Brush Engineered Materials Inc.

2003

Annual Report

About The Company

Brush Engineered Materials Inc. is a global leader in high performance engineered materials that enable customers to meet superior levels of product strength, reliability, miniaturization and weight savings, thermal dissipation, electrical conductivity and reflectivity.

Around the world, the Company's engineered materials can be found in end-use products within the telecommunications and computer, automotive electronics, optical media, industrial components, aerospace and defense, and appliance markets.

The Company's subsidiaries are organized into two reportable segments: the Metal Systems Group and the Microelectronics Group.

Metal Systems includes Brush Wellman Inc. (Alloy and Beryllium Products) and Technical Materials, Inc. Brush Wellman is the only fully integrated producer of beryllium, beryllium alloys and beryllia ceramic in the world. Technical Materials, Inc. produces engineered material systems including clad metals, plated metal, and electron beam welded, solder-coated and reflow materials.

Microelectronics includes Williams Advanced Materials Inc. and Electronic Products, which consists of Brush Ceramic Products Inc. (a wholly owned subsidiary of Brush Wellman Inc.) and Zentrix Technologies Inc. Williams Advanced Materials manufactures precious metal and specialty alloy products. Brush Ceramics produces beryllia ceramic materials and Zentrix Technologies manufactures electronic packaging and circuitry.

The Company has operating, service center and major office locations throughout North America, Europe and Asia. The Company has 1,833 employees worldwide. Brush Engineered Materials Inc. common stock (ticker symbol: BW) is listed on the New York Stock Exchange.

Financial Highlights

(Dollars in millions except per share amounts)		2003		2002		2001
		----		----		----
Sales	\$	401.0	\$	372.8	\$	472.6
Loss before income taxes		(12.7)		(25.9)		(17.4)
Net loss		(13.2)		(35.6)		(10.3)
Net loss per share (diluted)		(0.80)		(2.15)		(0.62)
Dividends per share		-		-		0.24
Shareholders' equity per share		9.27		9.61		12.98

[PI CHART]

Revenue By Segment	Revenue By Market	Revenue By Geographic Area
60% Metal Systems Group	35% Telecommunications	69% Domestic
39% Microelectronics Group	and Computer	31% International
1% Other	14% Automotive Electronics	
	13% Optical Media	
	11% Industrial Components	
	9% Aerospace and Defense	
	7% Appliance	
	11% Other	

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To Our Shareholders:

[PHOTO]

I believe that 2003 was a year of significant progress for Brush Engineered Materials, despite a continuing difficult business environment. As in the preceding two challenging years, we remained aggressively focused on those factors within our direct control. Since our sales peak in 2000 and the subsequent collapse of the telecommunications and computer market, which resulted in a nearly \$200 million decline in our revenue, we have improved our variable margins (sales less materials and direct manufacturing costs) to 42% of sales, cut our annual overhead spending by over \$40 million, reduced our breakeven point by approximately \$100 million and reduced debt each year. This is a real credit to the organization. We are working diligently to create a better future and continue to find ways to be more productive, more innovative and more effective. The commitment, hard work and dedication of our employees is making Brush a better company.

In 2003, while sales grew a modest 7.5%, or \$28 million to \$401 million, we were able to reduce our pre-tax loss by more than \$13 million to \$12.7 million. If adjusted for the \$6.0 million charge taken in the fourth quarter related to our debt refinancing, the pre-tax loss for the year was \$6.7 million. Particularly encouraging are the results of the fourth quarter when sales grew by 19% or \$16.6 million and the Company achieved breakeven on the operating profit line, adjusted for the refinancing charge.

Since the mid-2001 downturn in the telecommunications and computer market, we have consistently maintained that there are five keys to our turnaround. During 2003, we again made considerable progress in each:

1. REDUCING DEBT

Our expectation was that we would reduce our debt by strong working capital management and capital spending control. As of the end of 2003, Brush has achieved three consecutive years of debt reduction. Total balance sheet

[BAR CHART]

PERCENT CHANGE IN SALES AND EBIT: 2003 VS. 2002

Sales	8%
EBIT	59%

LEVERAGE FROM THE OPERATING PERFORMANCE IMPROVEMENTS IS SIGNIFICANT.

[BAR CHART]

TOTAL DEBT AND OFF-BALANCE SHEET OBLIGATIONS* (MILLIONS)

2000	\$209
2001	\$189
2002	\$153
2003	\$128

*(INCLUDING KEY OFF-BALANCE SHEET MANUFACTURING EQUIPMENT AND BUILDING LEASES, AND PRECIOUS METAL CONSIGNED INVENTORIES.)

SINCE 2000, TOTAL DEBT AND OFF-BALANCE SHEET OBLIGATIONS HAVE BEEN LOWERED BY 39% OR \$81 MILLION.

debt plus off-balance sheet financing and precious metal consignment obligations have been reduced by more than \$80 million since the end of 2000. For 2003 the reduction was approximately \$25 million, or 16% as inventories declined by an additional \$7 million and our accounts receivables as measured by days sales outstanding dropped to 47 days. Importantly, at the end of 2003, Brush completed a five-year refinancing agreement that lowers costs, improves cash flow, and provides the liquidity needed to support future growth.

2. REDUCING OVERHEAD

We targeted a \$10 million per quarter reduction in overhead costs from early 2001 levels based on lower headcount and spending for services. We exceeded that target in each quarter of 2003, which lowered our breakeven by \$100 million. We remain committed to keeping overhead growth down.

3. IMPROVING MARGINS

I am extremely proud of the progress made by our operations, especially throughout Alloy Products where performance has improved significantly. Using Lean Six Sigma and other continuous improvement techniques, we have steadily improved our operating performance company wide. In 2003 for example, Alloy Products reduced manufacturing cycle times by 18%, improved inventory turns by 48%, raised yields by 11% and shipped 23% more pounds per employee. At Technical Materials, Inc. (TMI), margins improved and earnings increased despite lower sales. At Williams Advanced Materials Inc. (WAM), after considering metal prices, operating margin increased approximately 10%. Margins also improved in all of our other units. These are lasting improvements which will leverage our profits in the years ahead.

[BAR CHART]

INVENTORY (MILLIONS)

2000	\$115.6
2001	\$109.1
2002	\$ 94.3
2003	\$ 87.4

INVENTORY HAS BEEN REDUCED \$28 MILLION OVER THE PAST THREE YEARS.

[ACCOUNTS RECEIVABLE DAYS SALES OUTSTANDING BAR CHART]

2001	5.3 DAYS
2003	47 DAYS

WE ARE COLLECTING RECEIVABLES FASTER.

4. EXPANDING OUR REVENUE BASE

Given the collapse of the telecommunications and computer market, which at its peak accounted for 50% of Brush's revenue, it was imperative to broaden our revenue base. This is a long-term goal focused on new products as well as new end-use and new geographic markets. Here too, we made good progress in 2003 but fell short of our goal of adding \$20 million in sales in the year. Sales of new products were closer to \$12 million as field evaluations and approval times have been longer than expected.

To highlight our progress and to demonstrate our confidence in Brush's growth potential, we have dedicated several pages in this year's report to our most promising growth initiatives. Among these is our \$15 million contract to supply the primary mirror material for NASA's James Webb Space Telescope. Additionally, the Company continues to extend its international reach. For the year, Brush's international revenue grew 19% and represented 31% of our total sales. Demonstrating the strength of our sales and marketing team in Asia, Alloy's revenue from the region grew by 31% in 2003.

While it has taken longer than anticipated, we remain enthusiastic about the prospects for our new products including ToughMet(R), Alloy 390 (TM), selective plating at TMI and thin film products for magnetic and optical data storage at Williams. In the fourth quarter, nearly 20% of Alloy's sales growth was generated from new products and applications.

5. MARKET GROWTH

It is essential that the broader economic environment continue to improve for Brush to fully realize the benefits of its efforts. The 19% increase in fourth quarter revenue and the resulting improvement in our profitability give us reason to be encouraged. With our global reach and expanded product line, I believe we are solidly placed to capture market growth wherever it occurs.

OTHER HIGHLIGHTS

Of all the positive achievements for 2003, I am most proud of our talented employees for their dedication in making our facilities safe places to work. Employees across the Company delivered a consistent year of safety improvement, turning in the best safety results in the Company's history. In May, the Ohio Bureau of Workers' Compensation, in cooperation with the Safety Council of Northwest Ohio, presented Brush with its Achievement Award, recognizing our Elmore, Ohio plant's outstanding efforts to reduce employee workplace accidents.

QUARTERLY OVERHEAD COSTS* (MILLIONS)

[BAR CHART]

2001	\$53.6
2003	\$42.9

*(Including non-variable manufacturing costs plus SG&A, R&D and other. Excluding One-time refinancing charge of \$6.0 million in 2003.)

Overhead savings of more than \$10 million per quarter has driven our breakeven point down by approximately \$100 million. Figures compare first quarter 2001 with 2003 quarterly average.

[BAR CHART]

Gross Margin

2002	12.9%
2003	18.2%

Steadily improving operating performance is driving margins higher.

We also continue to be pleased with our progress throughout the year to find answers to the complicated medical issues associated with occupational exposure to beryllium. Improvements in our industrial hygiene practices, based upon what we have learned in our extensive research efforts, are demonstrating very positive results.

Moreover, we have had substantial further progress in reducing our litigation caseload.

This past year, two significant additions to the Board of Directors were made. Jerry Pryor, the retired President of Van Dorn DeMag Corporation, joined the Board in May and Bill Lawrence, the former Executive Vice President and General Counsel for TRW, Inc., joined us in August. Charles F. Brush, III, a distinguished director for more than 45 years, was appointed to the position of Director Emeritus at the end of the year. We are fortunate to have a strong, independent Board of Directors committed to high standards and excellence in all aspects of corporate governance.

I would also like to acknowledge and thank Jack Paschall, who retired as Williams Advanced Materials' Chairman and CEO at the end of the year, for his outstanding leadership and contributions. During the 12 years under Jack's direction, WAM has grown dramatically in sales and profitability and expanded its global presence. Jack also ensured that there would be a smooth transition in leadership and at the start of the year, Dick Sager, who joined WAM in 1989, assumed full responsibility for Williams as President.

OUTLOOK

Economic indicators at the start of 2004 are favorable. Our key markets appear to be improving and our incoming order rate is the strongest it has been in over two years. I believe we have built a solid foundation and am optimistic that the combination of our continued focus on margin improvement and product and market development will position us well to take advantage of an improving global economy. This in turn should result in stronger revenue growth and a return to profitability in 2004.

As always, I thank you for your support and confidence in Brush Engineered Materials.

/s/ GORDON D. HARNETT

GORDON D. HARNETT
CHAIRMAN, PRESIDENT AND CEO

ALLOY MANUFACTURING CYCLE TIME CUT IN HALF

[BAR CHART]

2001	100%
2002	66%
2003	55%

IN 2003, Alloy manufacturing cycle times were 45% faster than in 2001.

[BAR CHART]

INTERNATIONAL SALES (MILLIONS)

2002	\$104
2003	\$124

INTERNATIONAL SALES GREW 19% IN 2003.

Alloy Products

Market by market and throughout the world, Alloy Products is growing its customer base. We're developing innovative materials and applications to make our customers' products work in new and better ways. And, we're applying our global reach and lean manufacturing capabilities to ensure our place in tomorrow's technologies.

TOUGHMET(R)

Based on its successes in rigorous end uses, our ToughMet(R) copper-nickel-tin alloy is gaining considerable interest from several growth markets, including heavy equipment for surface mining. Manufacturers of giant trucks boasting payloads greater than 300 tons are turning to ToughMet(R) as the standard bearings and bushings material. ToughMet's(R) excellent lubricity and wear resistance provides greater equipment reliability and productivity, benefiting both equipment makers and their customers.

For a global manufacturer of large agricultural equipment, ToughMet(R) presented a winning solution to a costly and longstanding problem with aluminum bronze bushings in the undercarriages of track-type tractors, eliminating claims for the manufacturer and downtime for the user.

ToughMet(R) is also gaining favor in the growing market of oil and gas drilling and well completions. Although high pressures, temperatures and corrosion are punishing to other materials in deep well environments, ToughMet(R) is providing superior performance in several critical components.

ALLOY 390(TM) - MATERIALS FOR THE NEXT GENERATION OF TECHNOLOGY

With Alloy 390(TM), our newest proprietary strip product for electronic applications, Brush Wellman has broken through the performance barrier that has long required materials users to select between strength and conductivity.

With these unrivaled properties, Alloy 390(TM) is gaining the interest of makers of high power electronic devices within the computer and telecommunications markets. Currently, it is being specified in applications ranging from advanced burn-in and test sockets (BiTS) to input/output (I/O) connectors, and is positioned for growth into land grid array contact applications and power connectors - both significant volume markets.

Leveraging Strengths

[PICTURE]

Positioned for growth in the fast-paced electronics market, Alloy 390(TM) is currently designed into advanced burn-in and test sockets (BITS), shown above, and in input-output (I/O) connectors such as those in mobile phones (left).

Brush Wellman expects steady growth in the computer socket applications for 2004, with a significant increase in 2005.

Makers of handheld communications devices are also looking to Alloy 390(TM) for its potential to increase battery life and reduce charging times.

MEETING GLOBAL GROWTH FOR HIGH PERFORMANCE ALLOYS

The Alloy Products business is focused on expanding its foothold in the high growth China and Asia/Pacific markets where consumer, personal computer and wireless applications are key drivers to future development. Alloy's focus in this region reinforces the solid foundations it has already established in Europe. Sales to China increased at an annual rate of nearly 30% in 2003, while sales to Europe were up approximately 25% in the year.

China, which is capturing a significant share of the world's electronic products growth, is now home to Brush Wellman's newest technical marketing office, opened in Shanghai in early 2004. This facility complements our other technical marketing/service centers in Germany, United Kingdom, Japan, Singapore and Hong Kong, which serve local customers with finished product stocks, value added processing and extremely short lead times.

In the past two years, Brush Wellman has also augmented its distribution presence with technical marketing and application engineering centers in Korea, China, Taiwan and Italy, which support an extensive independent distributor network of some 250 sales representatives, operating in 36 locations across 30 countries.

STREAMLINING THE WAY WE DO BUSINESS TO SUPPORT GLOBAL GROWTH

Over the past several years, Alloy Products has dramatically transformed its manufacturing system by implementing Lean Six Sigma, Total Predictive Maintenance and supply chain management methodologies. By reducing manufacturing cycle times by 45% since 2001, we're responding quicker to our customers. And, by increasing our own labor productivity significantly over the same period, we've kept our materials cost competitive.

These capabilities allow us to offer what our customers need, everywhere they need us to be.

ALLOY ASIA SALES GROWTH

[BAR CHART]

GROWTH IN MANUFACTURING OUTPUT BY EMPLOYEE

[BAR CHART]

to Grow the Base

Whether it's in commercial aircraft, high speed race cars, giant mining trucks or deep sub-sea oil and gas wells, Toughmet is proving its reliability in a variety of rugged environments. Used in equipment installed to prevent costly blowouts in deep sea wells, this Toughmet Valve component (below) represents a growing new application for the oil and gas market.

[LINE CHART]

TOUGHMET(R) OUTLASTS CONVENTIONAL BEARING MATERIALS

[PICTURE][LINE GRAPH]

[] HARDENED STEEL [] ALUMINUM BRONZE [] TOUGHMET 3 CX105

USING IDENTICAL BEARING DESIGNS IN THIS CUSTOMER TEST, THE AVERAGE SURFACE WEAR RATE OF HARDENED STEEL IS 90 TIMES GREATER THAN THAT OF TOUGHMET(R) . TOUGHMET ALSO WIDELY OUTPERFORMED ALUMINUM BRONZE WHICH GENERATED SURFACE WEAR RATES SEVEN TIMES GREATER.

Technical Materials, Inc.

TMI is stepping out from its conventional markets and developing growth opportunities to further broaden its competitive edge.

We're leveraging our strong tradition of manufacturing excellence and product innovation to provide new materials solutions across a more diversified customer base.

Once primarily a producer of copper-based materials for electronics applications, TMI now has aluminum, stainless steel, nickel alloys and exotic refractory metals accounting for a larger share of its product offering and one quarter of its product mix. And, increasingly, TMI products are requiring two or more processing technologies to meet escalating performance needs of the marketplace.

TMI'S NEW PLATING TECHNOLOGY

Engineering advances in plating technologies are helping electronic component customers meet another significant performance hurdle: miniaturizing components in step with the continued downsizing of cellular phones and other portable consumer products.

As a result, the coatings for electrical connections must be placed closer together, with ever-tighter tolerances. TMI can now cost effectively position selectively plated stripes as close as 0.010" apart - perfect for the challenges of miniaturization- and 10 to 20 times tighter than conventional gold plating technology. Typical precious metal savings with this technology are in the range of 10-15%.

GROWTH OPPORTUNITIES FOR CERPDP PRODUCTS

TMI's Cerpdp material (an aluminum clad alloy) is a mature product, but has recently been designed into new, potentially high growth applications. TMI has developed new applications for this familiar product in Asia, including use in imaging sensors in high tech applications such as digital cameras and camcorders. This trend will provide an attractive growth opportunity for Cerpdp materials.

Setting the Course for New

[PICTURE]

Stove top igniter assemblies by saint-gobain rely on TMI's micro laminate materials to provide vastly improved performance and safety over traditional spark igniters.

[PICTURE]

GenCell Corporation is working with TMI clad materials to achieve performance breakthroughs in polymer electrolyte (PEM) fuel cell designs. PEM technology has tremendous potential for commercialization in a wide variety of target markets from handheld communications devices to automotive.

[PICTURE]

New plating capabilities enable TMI to provide selectively plated stripes in distance tolerances never before attainable - supporting downsizing of electrical components and yielding significant precious metal savings.

NEW MARKETS - APPLIANCE

TMI has teamed with Saint-Gobain, the world's leading producer of insulating materials, to develop a highly engineered composite material for the premium hot surface appliance market. TMI's micro-laminate technology is used in Saint-Gobain's latest proprietary stove top igniter designs.

Innovative materials solutions help these assemblies offer breakthrough safety and performance improvements over traditional spark igniters - including an exceedingly fast time of less than 2 seconds to temperature - for residential and commercial gas ignition applications.

OPPORTUNITIES IN MEDICAL

TMI's cladding, electroplating and electron beam welding technologies are also gaining ground in the high growth market for medical devices. Our materials are increasingly being designed into pacemakers and defibrillators, hearing aid components and state-of-the-art dosimetry materials used to detect radiation exposure. One of our specialty clad metals is now the active element in optically stimulated luminescence (OSL) badges worn daily by x-ray technicians and other medical professionals.

HIGH PERFORMANCE RETAIL PRODUCT

Our technologies enable customers to achieve breakthroughs in design, and in turn, offer new products that drive end-use demand. Working closely with leading companies in cosmetics and skin care, for example, we're providing a multi-gauge, dual-temper stainless steel strip for this industry's next generation tweezers.

MATERIAL SYSTEMS FOR FUEL CELLS

We're also gearing up for one of the most anticipated technologies in decades: fuel cells. Fuel cells are expected to penetrate everywhere energy is used - ranging from small handheld devices to supporting entire military bases, hospitals and, ultimately, individual homes. For TMI, this developing market offers far-reaching potential.

At GenCell Corporation, our bi-polar plate materials are helping to solve some difficult corrosion and electrical performance issues in polymer electrolyte (PEM) fuel cell designs. Clad metal solutions are expected to play a key role in overcoming some of the remaining challenges to fuel cell commercialization. TMI is now actively developing products for all three leading fuel cell technologies: PEM, solid oxide and molten carbonate systems.

Market Growth in Specialty Strip

[PICTURE]

In Asia, skyrocketing demand for digital cameras and photo-capable cellular phones is driving growth in the imaging sensing technologies served by TMI's Cerdip aluminum clad alloys.

[PICTURE]

Our specialty clad materials shown here are the active detection elements in the latest generation dosimeter badges worn by medical professionals to monitor radiation exposure.

[PICTURE]

Beryllium Products

Beryllium products from Brush Wellman are helping to save lives, defend our homeland and national security, and lead the way to new discoveries in the outer reaches of space.

Our growing share of the aerospace and defense, and medical imaging markets is built on unique products offering unmatched capabilities. Brush materials meet the performance requirements of some of the most demanding end uses imaginable.

Sales continue to increase across our product range and have been especially strong for AlBeMet(R). Designers and specifiers increasingly rely on this proprietary aluminum beryllium metal matrix composite for its cost savings and ease of fabrication over competitive materials. AlBeMet(R) sales climbed to nearly \$11 million in 2003, a 40% increase over 2002 and double the 2001 level.

SNIPER XR

At nearly 20% of Beryllium Products' sales and gaining each year, precision targeting systems for military aircraft are a key demand generator for our metallic beryllium and AlBeMet(R). These highly accurate systems incorporate forward-looking infrared sensing equipment (FLIRs) to provide fighter pilots with pinpoint identification, tracking and target designation.

Lockheed Martin Corporation requires our materials for optical mirror and housing components in its Sniper XR next generation targeting system. To meet Lockheed's ramp-up, Brush Wellman will supply materials for approximately 60 Sniper XR FLIR units in 2004. At full production, approximately 100 of the Sniper XR FLIRs will be produced annually.

PUSHING NEW FRONTIERS IN SPACE

Since the early days of NASA, when beryllium heat shields protected Mercury spacecraft, materials made by Brush Wellman have had a front seat in our nation's extraordinary exploration of space. Beryllium's unique properties -- stiffness, strength, lightweight, temperature resistance and reflectivity - are mission-critical to NASA programs. For Beryllium Products, 2003 was a banner year for our support of the space program.

Soaring to New Heights

[PICTURE]

The impressive feat of landing and deploying two golf cart-sized robotic rovers on the martian surface can be credited in part to the high performance of our AlBeMet(R) materials. The rovers' exploration tools, which also contain AlBeMet(R) materials, have already provided evidence that life on the red planet was once possible.

[PICTURE]

Metallic beryllium and AlBeMet materials, such as those shown here after machining by L.A. Gauge Company, are used in the optical targeting systems of military fighter jets.

Northrop Grumman Space Technology selected beryllium as the optical system technology for NASA's \$825 million James Webb Space Telescope. The selection means approximately \$17 million in sales of Brush Wellman's optical grade beryllium over 2004 and 2005, involving \$15 million in materials for the Webb Telescope's primary mirror and the remainder for related structures. It also allows us to contribute to one of the most significant peacetime applications of the material.

The Webb Telescope will help scientists answer fundamental questions about the birth and evolution of galaxies, and the size and shape of the universe. Webb production is now underway at Brush Wellman's Elmore, Ohio facility.

While the Webb is still years from launch, beryllium materials from Brush Wellman are already sending back breathtaking images from the Spitzer Space Telescope, launched by NASA in August. Most of the telescope is constructed of Brush Wellman beryllium.

BRINGING MARS DOWN TO EARTH

If the solar system suddenly seems a little smaller following NASA's latest landings on Mars, part of the credit goes to AlBeMet(R). More than 350 structural fittings made of AlBeMet(R) helped to protect NASA's Spirit and Opportunity rovers on their landings, and then served again to unfold the rovers' drive-off ramps. AlBeMet(R) parts are also used in rock exploration tools on both rovers.

ELECTROFUSION - LIFESAVING MEDICAL APPLICATIONS

The use of beryllium transmission windows in diagnostic medical x-ray equipment continues to drive growth in our Electrofusion Products group. With a sales growth of 11% in 2003 - its best year ever, Electrofusion further strengthened its position as the materials leader for this lifesaving medical imaging application. Beryllium's high transparency to x-rays and its unique combination of good mechanical properties and high thermal conductivity make it a critical component in a number of diagnostic medical technologies.

[BAR CHART]

2001	\$ 5.4
2002	\$ 7.7
2003	\$10.8

with Beryllium Products

High purity beryllium transmission windows from Electrofusion Products play an enabling role in the effectiveness and efficiency of medical imaging components, including this X-ray tube produced by Varian Medical Systems. Varian components are contained within major scanners and x-ray machines throughout the medical field.

[PICUTRE]

COURTESY OF VARIAN MEDICAL SYSTEMS

[PICUTRE]

The 6.5-meter primary mirror assembly of NASA's James Webb Space Telescope will consist of 18 individual hexagonal mirror segments made from Brush Wellman optical grade beryllium. The Webb Telescope will allow scientists to see 10 to 11 billion light years away.

Williams Advanced Materials

WAM is strategically positioned to capitalize on consumers' seemingly endless appetites for smaller, smarter and more reliable information storage devices, cellular phones, personal digital assistants (PDAs), portable computers and digital versatile disc (DVD) technology.

Responding to these rapidly advancing - and increasingly global - high tech innovations, our metal and metal alloy materials are satisfying the most rigorous production requirements of today's major electronic products manufacturers.

SEMICONDUCTORS

The need for high performing semiconductors is growing at an astounding rate. Some 23 billion integrated circuits were produced in the final quarter of 2003, more than any quarter since 2000. And virtually every high tech device manufactured today needs smaller, more reliable and faster components. To help fill that need, semiconductor manufacturers depend on Williams' solid foundation of experience in electronic packaging and wafer production materials.

Our semiconductor packaging products allow electronic components to seamlessly function with other critical parts of a device. We are gearing up for additional growth at the "front end" of the semiconductor industry - the silicon semiconductor wafer market - with an offering of sputtering targets, refining and related services. Industry wide, materials sales to this sector were estimated at \$750 million in 2003.

We're now serving 200 millimeter semiconductor wafer fabrication facilities on a global basis and expanding into the growing 300 millimeter copper-interconnect market.

DATA STORAGE

The proliferation of cellular phones, home digital video, electronic games and the ability to store a lifetime collection of music on a tiny device that fits in a pocket is driving unprecedented expansion in data storage. In fact, industry associations predict 40%-plus growth in the production of hard disk drives (HDD) for use outside of traditional computer platforms.

Meeting the Rising Tide

[PICTURE]

Global semiconductor makers are increasingly turning to Williams for high purity sputtering targets that provide the metallic coatings on semiconductor wafers. WAM is expanding its capabilities in this "front end" of the semiconductor business with sputtering materials to serve the evolving 300 millimeter wafer market.

Our expertise and technologies allow manufacturers of optical media, HDD components and semiconductor memory devices to meet the materials challenges of this increasingly powerful - but rapidly downsizing technology.

WAM's innovative PureCON(TM) and ME Grade(TM) line of sputtering materials provide customers with unmatched opportunities to develop new and higher performing target products at lower costs.

Williams' Sil-X(TM) line grew out of R&D efforts with leading producers of one of today's hottest consumer level technologies, DVD. Disc replicators around the world are lowering costs, improving performance and positioning themselves for the next generation of storage solutions.

WIRELESS AND PHOTONICS

Williams' wireless and photonics technology materials are supporting the resurging global telecommunications growth. The design technology of wireless communication handsets, cell phones and solid-state lighting devices continues at a relentless pace. WAM's pioneering EvaPRO(TM) thin film vacuum evaporation materials provide the device manufacturers uniformity, reliability and stability to perform under the toughest of environments. Time after time, EVAPro(TM) outperforms other compound semiconductor metallization materials.

WAM's photonic technology provides a broad array of production materials for optical components, lasers, fiber optics and electro-optics devices of today and those eyed for the future. Microlid(TM) provides device manufacturers a lower-cost alternative for sealing Surface Acoustical Wave (SAW) devices in cellular phones and PDAs. Next generation optical components will incorporate the innovative new Visi-Lid(TM) technology which provides a hermetically sealed component and allows an optical pathway for the device to communicate with other components.

EXTENDING OUR REACH

In early 2004, through acquisition of our minority partner's interest, we became the sole owner of Williams Advanced Materials Taiwan Co., Ltd., enabling us to more fully serve the key Taiwanese markets and provide a platform for entry into mainland China. Elsewhere in this important region, WAM operates finishing operations in Singapore and Subic Bay, Philippines.

of Technology Growth

[PICTURE]

Williams' thin film and microelectronic packaging products are specified by high technology manufacturing customers worldwide. A large number of the cellular handsets produced today include materials supplied by wam.

[PICTURE]

Williams' VisiLid(TM) optical window assembly technology, as represented in this illustration, hermetically seals microelectronic packages while creating an optical pathway between the device and other electronics in the end product.

Management's Discussion and Analysis

OVERVIEW

The Company is 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, the Company's 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, the Company implemented various programs to sustain and improve cash flow and to position the Company to return to profitability by broadening its 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 the Company's efforts to broaden its revenue base by developing new products and expanding its 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. Buffer inventories have been deployed to allow for faster customer response times and inventory turns have increased over this time period as well. 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 the Company to reduce its 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, the Company refinanced its 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

(Millions, except for share data)	2003	2002	2001
	-----	-----	-----
Net sales	\$ 401.0	\$ 372.8	\$ 472.6
Operating loss.....	(9.3)	(22.8)	(14.1)
E.P.S.....	(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 the Company 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 (MEG) - 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 the Company has made improvements in its manufacturing processes and inventory positions to more quickly respond to customers' needs.

The gross margin of \$73.0 million was 18% of sales in 2003 compared to a gross margin of \$47.9 million and 13% of sales in 2002 and \$68.0 million and 14% of sales in 2001. Approximately 89% of the sales increase in 2003 flowed through to gross margin. In addition to the increased margin contribution 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 (SG&A) were \$68.8 million (17% of sales) in 2003, \$61.3 million in 2002 (16% of sales) and \$75.3 million (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. The Company negotiated legal settlements on various cases involving chronic beryllium disease (CBD) while other cases were dismissed in 2003 and 2002. In addition, the Company has also received several favorable court rulings on its litigation during the last two years. As a result of a court ruling in 2002, the Company increased the recovery portion on insured legal claims that previously were subject to apportionment. 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 the Refinancing section). 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 (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 MEG.

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 in the Refinancing section. In 2002, the Company 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 Consolidated Financial Statements. 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 the Company, is based upon the number of shares outstanding and the current stock price; in 2003, the Company recorded an expense of \$0.9 million due to the increase in the share price of the Company's stock while in 2002 the Company recorded income of \$1.1 million due to the decline in the share price that year. Metal financing fees were \$0.6 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, 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 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

Management's Discussion and Analysis

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, the Company determined that the majority of its 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 Consolidated Financial Statements.

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.

SEGMENT DISCLOSURES

The Company aggregates its businesses into two reportable segments - the Metal Systems Group and the Microelectronics Group. The 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 Consolidated Financial Statements. BEM Services charges a management fee for the services it provides, primarily corporate, administrative and financial oversight, to the other businesses within the 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

(Millions)	2003	2002	2001
	-----	-----	-----
Net sales.....	\$ 239.4	\$ 227.9	\$ 295.7
Operating loss.....	(16.6)	(37.7)	(20.1)

The Metal Systems Group is the larger of the Company's reportable segments, accounting for approximately 60% of total sales and almost 70% of total assets. The group consists of Alloy Products, Technical Materials, Inc. (TMI), a wholly owned subsidiary of the Company, 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, Beryllium and TMI. Customers typically use the Company's materials 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:

(Millions)	2003	2002	2001
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 the 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 the Company's facilities in Ohio and Pennsylvania and are distributed worldwide through a network of Company-owned 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 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(R) 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 semiconductors.

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 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.

Management's Discussion and Analysis

Production capacity within the markets served by TMI continued to be transferred from the U.S. 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, the Company secured a material supply contract for NASA's James Webb Space Telescope program that 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 (16% of sales) in 2003 compared to \$18.0 million (8% of sales) in 2002. The increased sales volume improved the margin contribution 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 unfavorable currency and copper impact, reduced margins by an additional \$6.3 million. Mitigating the impact of these negative factors on margins was a reduction in manufacturing overhead expense and inventory valuation adjustments of \$15.9 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.

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. The Company 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, 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

(Millions)	2003	2002	2001
	-----	-----	-----
Net sales.....	\$ 157.3	\$ 139.2	\$ 169.6
Operating profit.....	12.6	3.8	4.6

The Microelectronics Group (MEG) includes Williams Advanced Materials Inc. (WAM), a wholly owned subsidiary, 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 MEG during the 2001 to 2003 time frame were as follows:

(Millions)	2003	2002	2001
	-----	-----	-----
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, semiconductor, 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.

Management's Discussion and Analysis

MEG GROSS MARGIN AND EXPENSES

The gross margin on MEG sales was \$32.8 million, or 21% of sales, in 2003, compared to \$26.4 million, or 19% of sales, in 2002 and \$25.6 million, or 15% of sales, in 2001. The margin contribution in 2003 improved by \$3.3 million 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 contribution from 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 Consolidated Financial Statements. Expenses in 2002 also included severance costs of \$0.6 million as the Company 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 \$1.6 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 MEG operating profit was \$12.6 million, or 8% of sales, in 2003 compared to \$3.8 million, or 3% of sales, in 2002. Improved margins and lower expenses combined to generate the profit improvement. Operating profit for the MEG was \$4.6 million, or 3% of sales, in 2001.

INTERNATIONAL SALES AND OPERATIONS

(Millions)	2003	2002	2001
	-----	-----	-----
From international operations.....	\$ 89.0	\$ 71.8	\$ 86.8
Exports from U.S. operations.....	35.4	32.5	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 MEG 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 U.S. 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 fall off.

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 the Company. WAM has finishing operations in Singapore and the Philippines and a small joint venture that was established in Taiwan in 2003. The Company also has 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 the Company's 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. The Company's 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 the Company.

Sales from the international operations are typically denominated in the local currency, particularly in Europe and Japan. Exports from the U.S. and sales from the Singapore operations are predominately denominated in U.S. dollars. Movements in the foreign currency exchange rates will affect the reported translated value of foreign currency-denominated sales while local competition limits the Company's 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 stronger in 2002 than in 2001, resulting in an unfavorable translation impact on sales of \$1.1 million in 2002. The Company has a hedge program with the objective of minimizing the impact of fluctuating currency values on its reported results.

LEGAL PROCEEDINGS

One of the Company's subsidiaries, Brush Wellman Inc., is a defendant in 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, if any, 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.

	2003	December 31, 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 scheduled to be made in early 2004. Additional beryllium claims may arise. Management believes that the Company has 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 the Company. 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 the Company's insurance carriers as recoveries for insured claims.

Although it is not possible to predict the outcome of the litigation pending against the Company and its subsidiaries, the Company provides 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 the Company's reserves. An unfavorable outcome or settlement of a pending beryllium case or additional adverse media coverage could encourage the commencement of additional similar litigation. The Company is unable to estimate its potential exposure to unasserted claims.

While the Company is unable to predict the outcome of the current or future beryllium proceedings, based upon currently known facts and assuming collectibility of insurance, the Company does not believe that resolution of these proceedings will have a material adverse effect on the financial condition or the cash flow of the Company. However, the Company's results of operations could be materially affected by unfavorable results in one or more of these cases. As of December 31, 2003, two purported class actions were pending.

Standards for exposure to beryllium are under review by the United States Occupational Safety and Health Administration, and by private standard-setting organizations. One result of these reviews might be more stringent worker safety standards. More stringent standards may affect buying decisions by the users of beryllium-containing products. If the standards are made more stringent or the Company's customers decide to reduce their use of beryllium-containing products, the Company's 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.

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 (DSO), a measure of how quickly receivables are collected, improved one day. 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.

Management's Discussion and Analysis

Inventories declined \$6.9 million in 2003 to \$87.4 million after declining \$14.8 million in 2002 as the Company continued to improve its manufacturing efficiencies and inventory utilization in order to improve customer response time and lower its 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 (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 MEG 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 MEG 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. The Company paid \$1.2 million in 2003 for legal settlements, primarily for CBD cases, and received \$1.6 million from its insurance carriers as partial reimbursement for the insured portions of claims paid in the current and prior years. In 2002, the Company paid \$4.9 million in settlements and recovered \$2.3 million from its 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 MEG 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 the Company had sufficient production capacity to meet the level of demand in 2003. The MEG 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, the Company 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 the Company's pension assets in its 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. The Company, therefore, reduced its 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. The Company 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

The Company refinanced its 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 the Company's 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 the Company's 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 the Company's growth and provides stability through extension of maturity dates. See Note E to the Consolidated Financial Statements.

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, the Company's total obligations, as defined by debt plus off-balance sheet obligations, were unchanged.

The refinancing increases the Company's liquidity and available credit lines and the Company anticipates 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, the Company 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. The Company has 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 the Consolidated Balance Sheet was charged against the other-net expense on the Consolidated Income Statements. The Company 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 Consolidated Financial Statements. 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 shares of Company common stock 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 \$15.8 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, the Company 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. The Company was in compliance with all of its debt covenants as of December 31, 2003.

Management's Discussion and Analysis

In addition to the \$99.1 million of balance sheet debt, the Company has an off-balance sheet operating lease with a notional value of \$14.4 million that finances a building at the Elmore facility. Annual payments under this lease are \$2.3 million. See Note F to the Consolidated Financial Statements for further leasing details.

The Company maintains a portion of its precious metal inventories on a consignment basis in order to reduce its price exposure. See "Market Risk Disclosures". The notional value of this inventory was \$11.5 million at December 31, 2003 and \$15.6 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 the Company's balance sheet. The Company maintained an off-balance sheet financing arrangement with a bank for a portion of its copper-based inventories until it was terminated in the fourth quarter 2002. The Company purchased the copper inventory for \$6.0 million from the bank and added it into its balance sheet inventory as the Company determined it was more cost effective to finance these inventories with traditional balance sheet debt.

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

(Millions)	Payments Due In						There- after
	Total	2004	2005	2006	2007	2008	
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	12.0	11.8	11.9	12.0	-	-
Total.....	\$ 164.0	\$ 18.5	\$ 19.5	\$ 19.0	\$ 18.8	\$ 68.9	\$ 19.3

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 the Company's long-term debt in each of the next five years. See Note E to the Consolidated Financial Statements 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 Consolidated Financial Statements. 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 the Company has the opportunity to negotiate an extension for one of the agreements. See Note L to the Consolidated Financial Statements.

OTHER

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. The refinanced debt structure provides improved stability in terms of maturity dates and improved flexibility in terms of available credit and covenant structures. The Company's cost control and working capital management efforts have allowed cash flow from operations to remain positive despite the operating losses the last three years, while the capital expenditure limitations and the elimination of the regular dividend in the third quarter 2001 have further helped to reduce cash outlays. The Company's 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 and other established lines. However, availability under existing unused lines of credit totaled \$36.9 million as of December 31, 2003.

The Company attempts 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

The Company has an active program of environmental compliance. The Company estimates the probable cost of identified environmental remediation projects and establishes 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 Consolidated Financial Statements.

ORE RESERVES

The Company's reserves of beryllium-bearing 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 the open pit method. 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. The Company augments its proven reserves of bertrandite ore through the purchase of imported beryl ore (approximately 4% beryllium), which is also processed at the Utah extraction facility.

The Company uses 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. As of 2001, the Company owns, as opposed to leases, approximately 95% of the proven reserves. 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 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 the Company that rely upon management's judgment.

ACCRUED LIABILITIES. The Company has various accruals on its balance sheet that are based in part upon management's judgment, including accruals for litigation, environmental remediation and workers' compensation costs. The Company establishes 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 the Company's 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 Consolidated Financial Statements.

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 the Company is 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.

PENSIONS. The Company has a defined benefit pension plan that covers a large portion of its current and former domestic employees. The Company accounts 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. The Company periodically reviews 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 makes adjustments accordingly. These adjustments may then lead to a higher or lower expense in a future period.

Management's Discussion and Analysis

The Company maintained its 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 the Company's pension assets earned well in excess of 9.0% in 2003, the plan under performed this level for several years prior to 2003. However, the Company's long-term experience indicates that a 9.0% return is reasonable. The Company's 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. The Company establishes 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, the Company elected to use a discount rate of 6.375% compared to a rate of 6.75% as of December 31, 2002. The Company estimates 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 its 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, the Company anticipates 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 Consolidated Financial Statements for additional details on the Company's pension plan.

LIFO INVENTORY. The prices of certain major raw materials, including copper, nickel, gold, silver and other precious metals purchased by the Company, 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 the Company's ability to offset wage, benefit and other cost increases. Therefore, the Company uses the last-in, first-out (LIFO) method for costing the majority of its 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 the Company reduced its 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.

DEFERRED TAX ASSETS. The Company records 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. The Company reviews 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 Consolidated Financial Statements for additional deferred tax details.

In addition to reviewing the deferred tax assets against their expiration dates, the Company evaluated its 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 the Company 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 the Company establishes 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 the Company 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. The Company 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.

DERIVATIVES. The Company may use derivative financial instruments to hedge its foreign currency, commodity price and interest rate exposures. The Company applies 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. The Company secures derivatives with the intention of hedging existing or forecasted transactions only and does not engage in speculative trading or holding derivatives for investment purposes. The Company's 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 Note G to the Consolidated Financial Statements and the "Market Risk Disclosures" section in this Management's Discussion and Analysis for more information on the Company's derivatives.

MARKET RISK DISCLOSURES

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

The Company uses gold and other precious metals in manufacturing various MEG and Metal Systems products. To reduce the exposure to market price changes, 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. The Company's 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. The Company maintains a certain amount of gold in its 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.

The Company is 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 the Company 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 the Company increase by 15% from the prices on December 31, 2003, the additional pre-tax cost to the Company 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.

The Company also uses base metals, primarily copper, in its 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 the Company cannot pass through the price of copper, margins can be reduced by increases in the market price of copper. To hedge this exposure, the Company 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 the Company's purchase price and selling price of copper will be a known, fixed value for the quantities covered by the swaps. The Company 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.

Management's Discussion and Analysis

The Company is exposed to changes in interest rates on its 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. The Company also uses interest rate swaps to fix the interest rate on variable debt obligations, as it deems appropriate. Excess cash, if any, is typically invested in high quality instruments that mature in seven days or less. The Company 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.

The Company's international operations sell products priced in foreign currencies, mainly the euro, yen and sterling, while the majority of these products' costs are incurred in U.S. dollars. The Company is exposed to currency movements in that if the U.S. dollar strengthens, the translated value of the foreign currency sale and the resulting margin on that sale will be reduced. The Company typically cannot increase the price of its products for short-term exchange rate movements because of its local competition. To minimize this exposure, the Company 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.

The Company records the fair values of derivatives on its 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.

OUTLOOK

Shipment and sales order trends entering 2004 were positive. Key markets for the Company's 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, TMI and WAM offer realistic opportunities for further growth in 2004. The Company also plans on increasing its international presence in 2004 in efforts to continue to position itself to capture applications in the rapidly changing and growing international markets.

The Company remains 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 Lean 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 the Company's capital structure and provides the borrowing capacity to support the Company's growth.

The Company made additional progress on its CBD litigation in 2003, reducing the number of outstanding claims without a material impact on cash flows or financial position. The Company is encouraged by this progress but cautions 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 the Company's health and safety measures and its investment in worker protection, education and medical research.

Reports of Independent Auditors and Management

REPORT OF INDEPENDENT AUDITORS

Board of Directors and Shareholders Brush Engineered Materials Inc.

We have audited the accompanying Consolidated Balance Sheets of Brush Engineered Materials Inc. and subsidiaries as of December 31, 2003 and 2002, and the related Consolidated Statements of Income, Shareholders' Equity, and Cash Flows for each of the three years in the period ended December 31, 2003. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Brush Engineered Materials Inc. and subsidiaries at December 31, 2003 and 2002, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States.

/s/ Ernst & Young LLP

Cleveland, Ohio
January 28, 2004

REPORT OF MANAGEMENT

The management of Brush Engineered Materials Inc. is responsible for the contents of the financial statements, which are prepared in conformity with generally accepted accounting principles. The financial statements necessarily include amounts based on judgments and estimates. Financial information elsewhere in the annual report is consistent with that in the financial statements.

The Company maintains a comprehensive accounting system, which includes controls designed to provide reasonable assurance as to the integrity and reliability of the financial records and the protection of assets. However, there are inherent limitations in the effectiveness of any system of internal controls and, therefore, it provides only reasonable assurance with respect to financial statement preparation. An internal audit staff is employed to regularly test and evaluate both internal accounting controls and operating procedures, including compliance with the Company's Statement of Policy regarding ethical and lawful conduct. The role of the independent auditors is to provide an objective review of the financial statements and the underlying transactions in accordance with generally accepted auditing standards.

The Audit Committee of the Board of Directors, comprised solely of Directors who are not members of management, meets regularly with management, the independent auditors, and the internal auditors to ensure that their respective responsibilities are properly discharged. The independent auditors and the internal audit staff have full and free access to the Audit Committee.

/s/John D. Grampa

John D. Grampa
Vice President Finance and Chief Financial Officer

FORWARD-LOOKING STATEMENTS

Portions of the narrative set forth in this document that are not statements of historical or current facts are forward-looking statements. The Company's actual future performance may materially differ from that contemplated by the forward-looking statements as a result of a variety of factors. These factors include, in addition to those mentioned elsewhere herein:

- The global economy;
- The condition of the markets the Company serves, whether defined geographically or by segment, with the major market segments being telecommunications and computer, automotive electronics, optical media, industrial components, aerospace and defense, and appliance;
- Changes in product mix and the financial condition of customers;
- The Company's success in implementing its strategic plans and the timely and successful completion of any capital projects;
- The availability of adequate lines of credit and the associated interest rates;

- Other financial factors, including cost and availability of materials, tax rates, exchange rates, pension costs, energy costs and the cost and availability of insurance;
- The uncertainties related to the impact of war and terrorist activities;
- Changes in government regulatory requirements and the enactment of new legislation that impacts the Company's obligations; and,
- The conclusion of pending litigation matters in accordance with the Company's expectation that there will be no material adverse effects.

Consolidated Statements of Income

Brush Engineered Materials Inc. and Subsidiaries, Years ended December 31, 2003, 2002 and 2001
(Dollars in thousands except per share amounts)

	2003	2002	2001
	-----	-----	-----
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.

Consolidated Statements of Cash Flows

Brush Engineered Materials Inc. and Subsidiaries, Years ended December 31, 2003, 2002 and 2001
(Dollars in thousands)

	2003	2002	2001
	-----	-----	-----
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.

Consolidated Balance Sheets

Brush Engineered Materials Inc. and Subsidiaries, Years ended December 31, 2003 and 2002
(Dollars in thousands)

	2003	2002
	-----	-----
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.....	26,761	25,629
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)
	-----	-----
Mineral resources.....	186,736	147,341
Mine development.....	5,029	5,029
Allowances for amortization and depletion.....	14,328	14,171
	(15,247)	(13,997)
	-----	-----
	4,110	5,203
	-----	-----
PROPERTY, PLANT, AND EQUIPMENT-NET	190,846	152,544
	-----	-----
	\$ 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.

Consolidated Statements of Shareholders' Equity

Brush Engineered Materials Inc. and Subsidiaries, Years ended December 31, 2003, 2002 and 2001
(Dollars in thousands except per share amounts)

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

Net loss	-	(13,226)
Foreign currency translation adjustment	-	475
Derivative and hedging activity	-	4,623
Minimum pension liability	-	967

Comprehensive loss		(7,161)
Proceeds from sale of 1,900 shares under option plans ..	-	21
Income tax benefit from employees' stock options	-	4
Issuance of 115,000 warrants	-	1,616
Other equity transactions	359	130
Forfeiture of restricted stock	28	(131)
	-----	-----
BALANCES AT DECEMBER 31, 2003	\$ (108)	\$ 153,573
	=====	=====

See Notes to Consolidated Financial Statements.

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

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

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 and mining costs associated with waste rock removal are recorded at cost and are depleted or amortized by the units-of-production method based on recoverable proven beryllium reserves. Exploration and pre-production mine development expenses are charged to operations in the period in which 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, 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: The Company recognizes revenue when the title to the goods passes to the customer.

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.

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.

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

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
	=====	=====	=====

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,

(Dollars in thousands)	2003	2002
	-----	-----
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		
	Total	Outstanding	Available
	-----	-----	-----
(Dollars in thousands)			
Domestic	\$34,634	\$ 2,049	\$32,585
Foreign	4,439	142	4,297
Precious metal	9,732	9,732	-
	-----	-----	-----
Total	\$48,805	\$11,923	\$36,882
	=====	=====	=====

	December 31, 2002		
	Total	Outstanding	Available
	-----	-----	-----
(Dollars in thousands)			
Domestic	\$16,669	\$13,239	\$ 3,430
Foreign	14,713	5,707	9,006
Precious metal	8,257	8,257	-
	-----	-----	-----
Total	\$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.

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%.

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

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) (Dollars in thousands)	DECEMBER 31, 2003		December 31, 2002	
	Notional Amount	Carrying Amount	Notional Amount	Carrying Amount
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 (Dollars in thousands)	December 31,	
	2003	2002
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)
	=====	=====

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:

(Dollars in thousands)	2003	2002
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

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

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.

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.

Stock option, performance restricted share award, performance share award, and restricted share award activities are summarized in the following table:

	2003		2002		2001	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
STOCK OPTIONS						
Outstanding at beginning of year	1,394,688	\$ 17.82	1,346,568	\$ 18.83	1,214,488	\$ 17.75
Granted	262,800	5.62	256,750	12.17	277,650	22.31
Exercised	(1,900)	12.89	-	-	(95,230)	15.11
Cancelled	(180,645)	16.76	(208,630)	17.42	(50,340)	17.35
Outstanding at end of year	1,474,943	15.78	1,394,688	17.82	1,346,568	18.83
	=====	=====	=====	=====	=====	=====
Exercisable at end of year	1,231,103	16.78	1,166,908	18.18	1,108,763	18.63
	=====	=====	=====	=====	=====	=====
PERFORMANCE AWARDS						
Allocated at beginning of year	-	-	-	-	78,000	-
Forfeited	-	-	-	-	(78,000)	-
Allocated at end of year	-	-	-	-	-	-
	=====	=====	=====	=====	=====	=====
RESTRICTED AWARDS						
Awarded and restricted at beginning of year ..	77,845	-	60,745	-	88,183	-
Awarded during the year	-	-	33,100	-	20,000	-
Vested	(26,845)	-	(15,700)	-	(37,160)	-
Forfeited	(4,050)	-	(300)	-	(10,278)	-
Awarded and restricted at end of year	46,950	-	77,845	-	60,745	-
	=====	=====	=====	=====	=====	=====

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

The market value of the performance restricted shares and the performance shares adjusted for management's expectation of reaching the management objectives as outlined in the Plan agreement, and the related dividends on the performance restricted shares have been recorded as deferred compensation-restricted stock and are a component of other equity transactions of shareholders' equity. Deferred compensation is amortized over the vesting period. Amounts recorded against selling, general and administrative expense on the Consolidated Statements of Income totaled \$0.3 million in 2003, \$0.4 million in 2002 and \$0.4 million in 2001.

The following table provides additional information about stock options outstanding as of December 31, 2003:

Range of Option Prices	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted- average Remaining Contract Life	Weighted- average Exercise Price	Number Exercisable	Weighted- average Exercise Price
\$ 5.55 - \$ 8.10	257,300	9.15	\$ 5.62	131,000	\$ 5.59
\$12.15 - \$15.06	361,150	6.96	13.15	301,120	13.34
\$15.75 - \$18.63	484,868	3.59	16.83	467,058	16.87
\$20.64 - \$23.78	231,050	6.97	22.33	191,350	22.31
\$26.44 - \$26.72	140,575	4.35	26.71	140,575	26.71
	1,474,943	5.99	\$ 15.78	1,231,103	\$ 16.78
	=====	=====	=====	=====	=====

The weighted-average remaining contractual life of options outstanding at December 31, 2002 and 2001 is 6.04 years and 6.22 years, respectively. The number of shares available for future grants as of December 31, 2003, 2002 and 2001 is 472,331 shares, 550,986 shares and 631,906 shares, respectively.

NOTE I - INCOME TAXES

Income (loss) before income taxes and income taxes (benefit) are comprised of the following components, respectively:

(Dollars in thousands)	2003	2002	2001
	-----	-----	-----
Income (loss) before income taxes:			
Domestic	\$ (14,721)	\$ (24,996)	\$ (18,035)
Foreign	2,071	(859)	639
	-----	-----	-----
Total before income taxes	\$ (12,650)	\$ (25,855)	\$ (17,396)
	=====	=====	=====
Income taxes (benefit):			
Current income taxes:			
Domestic	\$ 158	\$ (8,311)	\$ (1,588)
Foreign	697	293	833
	-----	-----	-----
Total current	855	(8,018)	(755)
Deferred income taxes:			
Domestic	\$ (5,291)	\$ (1,068)	\$ (5,785)
Foreign	(279)	(1,095)	(582)
Valuation allowance	5,291	19,930	-
	-----	-----	-----
Total deferred	(279)	17,767	(6,367)
Total income taxes (benefit)	\$ 576	\$ 9,749	\$ (7,122)
	=====	=====	=====

The reconciliation of the federal statutory and effective income tax rates follows:

	2003	2002	2001
	-----	-----	-----
Federal statutory rate	(34.0)%	(34.0)%	(34.0)%
State and local income taxes, net of federal tax effect	0.9	0.5	1.0
Effect of excess of percentage depletion over cost depletion	(7.6)	(2.2)	(3.4)
Company-owned life insurance	3.6	(0.6)	(0.4)

Taxes on foreign source income	(3.7)	(4.1)	(5.6)
Valuation allowance	41.8	77.1	-
Other items	3.5	1.0	1.5
	-----	-----	-----
Effective tax rate	4.5%	37.7%	(40.9)%
	=====	=====	=====

In accordance with the provisions of SFAS No. 109, "Accounting for Income Taxes," the Company recorded a valuation allowance of \$5.3 million in 2003 and \$19.9 million in 2002 as part of tax expense. In addition, the Company recorded a \$1.9 million valuation allowance reduction to OCI in 2003 and \$7.3 million in 2002 for deferred tax assets associated with the changes to OCI for the minimum pension liability and derivative and hedging activities. No valuation allowance was required on \$1.0 million of net deferred tax assets associated with certain foreign subsidiaries.

The Company intends to maintain a valuation allowance on the net deferred tax assets until a realization event occurs to support reversal of all or a portion of the reserve.

Included in current domestic income taxes, as shown in the Consolidated Statements of Income, are \$0.2 million, \$0.2 million and \$0.3 million of state and local income taxes in 2003, 2002 and 2001, respectively.

The Company had domestic and foreign income tax payments (refunds), of \$(3.3) million, \$(1.1) million and \$0.6 million in 2003, 2002 and 2001, respectively.

Deferred tax assets and liabilities are determined based on temporary differences between the financial reporting bases and the tax bases of assets and liabilities. Deferred tax assets and (liabilities) recorded in the Consolidated Balance Sheets consist of the following at December 31, 2003 and 2002:

	2003	2002
(Dollars in thousands)	-----	-----
Post-retirement benefits other than pensions	\$ 12,072	\$ 10,549
Alternative minimum tax credit	10,629	10,629
Other reserves	2,518	3,018
Environmental reserves	2,311	2,604
Pensions	2,416	1,958
Derivative instruments and hedging activities ...	2,051	2,592
Inventory	495	1,741
Tax credit carryforward	1,851	1,851
Net operating loss carryforward	32,232	27,892
Capitalized interest expense	419	-
Miscellaneous	64	339
	-----	-----
	67,058	63,173
Valuation allowance	(30,793)	(27,207)
	-----	-----
Total deferred tax assets	36,265	35,966
	-----	-----
Depreciation	(33,060)	(31,545)
Mine development	(2,210)	(2,566)
Capitalized interest expense	-	(1,139)
	-----	-----
Total deferred tax liabilities	(35,270)	(35,250)
	-----	-----
Net deferred tax asset	\$ 995	\$ 716
	=====	=====

At December 31, 2003, for income tax purposes, the Company had domestic net operating loss carryforwards of \$88.1 million, which are scheduled to expire in calendar years 2019 through 2023. The Company also had foreign net operating loss carryforwards for income tax purposes totaling \$5.3 million, comprised of \$4.7 million that do not expire, and \$0.6 million which are scheduled to expire in calendar year 2007.

At December 31, 2003, the Company had research and experimentation tax credit carryforwards of \$1.9 million that are scheduled to expire in calendar years 2008 through 2020.

A provision has not been made with respect to \$8.5 million of unremitted earnings at December 31, 2003 that have been invested by foreign subsidiaries. It is not practical to estimate the amount of unrecognized deferred tax liability for undistributed foreign earnings.

NOTE J - EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted loss per share (E.P.S.):

	2003	2002	2001
(Dollars in thousands, except for share data)	-----	-----	-----
Numerator for basic and diluted E.P.S.:			
Net loss	\$ (13,226)	\$ (35,604)	\$ (10,274)
Denominator for basic and diluted E.P.S.:			
Weighted-average shares outstanding	16,562,864	16,557,388	16,518,691
	-----	-----	-----
Basic and diluted E.P.S.	\$ (0.80)	\$ (2.15)	\$ (0.62)
	=====	=====	=====

Under SFAS No. 128, "Earnings per Share," no potential common shares are included in the computation of diluted per-share amounts when a

loss from continuing operations exists. Accordingly, dilutive securities have been excluded from the diluted E.P.S. calculation of 109,052 for 2003, 51,337 for 2002 and 131,896 for 2001.

Options to purchase common stock with exercise prices in excess of the average share price totaling 1,217,643 at December 31, 2003; 1,394,688 at December 31, 2002; and 749,488 at December 31, 2001 were excluded from the diluted E.P.S. calculations as their effect would have been anti-dilutive.

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

NOTE K - PENSIONS AND OTHER POST-RETIREMENT BENEFITS

The obligation and funded status of the Company's domestic defined benefit pension plan, unfunded supplemental retirement plan and retiree medical and life insurance plan are as follows:

	Pension Benefits		Other Benefits	
	2003	2002	2003	2002
(Dollars in thousands)				
CHANGE IN BENEFIT OBLIGATION				
Benefit obligation at beginning of year	\$ 100,821	\$ 92,878	\$ 43,453	\$ 40,220
Service cost	4,116	4,217	274	298
Interest cost	6,668	6,425	2,818	2,757
Amendments	-	347	-	-
Actuarial loss	4,312	3,920	2,336	3,447
Benefit payments	(5,413)	(6,174)	(3,433)	(3,269)
Settlements	(35)	(792)	-	-
Benefit obligation at end of year	110,469	100,821	45,449	43,453
CHANGE IN PLAN ASSETS				
Fair value of plan assets at beginning of year	78,086	94,713	-	-
Actual return on plan assets.....	13,058	(10,517)	-	-
Employer contributions	72	64	3,433	3,269
Benefit payments	(5,413)	(6,174)	(3,433)	(3,269)
Fair value of plan assets at end of year	85,803	78,086	-	-
Funded status	(24,666)	(22,735)	(45,449)	(43,453)
Unrecognized net actuarial loss	26,831	26,179	10,826	8,821
Unrecognized prior service cost (benefit)	5,519	6,166	(909)	(1,020)
Unrecognized initial net (asset) obligation	(1)	(362)	-	-
Net amount recognized	\$ 7,683	\$ 9,248	\$ (35,532)	\$ (35,652)
AMOUNTS RECOGNIZED IN THE CONSOLIDATED BALANCE SHEETS CONSIST OF:				
Accrued benefit liability	\$ (10,395)	\$ (10,416)	\$ (35,532)	\$ (35,652)
Intangible asset	5,482	6,101	-	-
Accumulated other comprehensive income	12,596	13,563	-	-
Net amount recognized	\$ 7,683	\$ 9,248	\$ (35,532)	\$ (35,652)
ADDITIONAL INFORMATION				
Increase in minimum liability included in other comprehensive income..	\$ (967)	\$ 13,563	N/A	N/A
Accumulated benefit obligation for all pension plans	96,023	88,280	N/A	N/A

	Pension Benefits			Other Benefits		
	2003	2002	2001	2003	2002	2001
(Dollars in thousands)						
COMPONENTS OF NET PERIODIC BENEFIT COST						
Service cost	\$ 4,116	\$ 4,217	\$ 3,622	\$ 274	\$ 298	\$ 303
Interest cost	6,668	6,425	6,244	2,818	2,757	2,596
Expected return on plan assets	(9,359)	(10,597)	(10,455)	-	-	-
Amortization of prior service cost (benefit)	647	626	672	(112)	(112)	(112)
Amortization of initial net (asset) obligation...	(361)	(412)	(412)	-	-	-
Recognized net actuarial (gain) loss	(26)	(113)	(958)	332	105	-
Settlement (gain)	(48)	(993)	-	-	-	-
Curtailment loss	-	-	570	-	-	-
	-----	-----	-----	-----	-----	-----
Net periodic (benefit) cost	\$ 1,637	\$ (847)	\$ (717)	\$ 3,313	\$ 3,048	\$ 2,787
	=====	=====	=====	=====	=====	=====

The Company recorded a plan curtailment in the fourth quarter 2001 in accordance with SFAS No. 88, "Employers' Accounting for Settlement and Curtailment of Defined Benefit Pension Plans and for Termination Benefits". The curtailment was required because of the significant reduction in the number of plan participants. The curtailment increased the pension expense in 2001 by \$0.6 million and reduced the benefit obligation by \$2.4 million at December 31, 2001.

	Pension Benefits			Other Benefits		
	2003	2002	2001	2003	2002	2001
ASSUMPTIONS						
WEIGHTED-AVERAGE ASSUMPTIONS USED TO DETERMINE BENEFIT OBLIGATIONS AT FISCAL YEAR END						
Discount rate	6.375%	6.750%		6.375%	6.750%	
Rate of compensation increase	2.750%	2.000%		2.750%	2.000%	
WEIGHTED-AVERAGE ASSUMPTIONS USED TO DETERMINE NET COST FOR THE FISCAL YEAR						
Discount rate	6.750%	7.125%	8.000%	6.750%	7.125%	8.00%
Expected long-term return on plan assets	9.000%	10.000%	10.000%	N/A	N/A	N/A
Rate of compensation increase	2.000%	5.000%	5.000%	2.000%	5.000%	5.00%

The Company uses a December 31 measurement date for the above plans.

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

In 2003, the Company revised the expected long-term rate of return assumption used in calculating the annual expense for its domestic pension plan in accordance with SFAS No. 87, "Employers' Accounting for Pensions". The assumed expected rate of return was decreased to 9.0% from 10.0% with the impact being accounted for as a change in estimate.

Management establishes the expected long-term rate of return assumption by reviewing its historical trends and analyzing the current and projected market conditions in relation to the plan's asset allocation and risk management objectives. Management consults with outside investment advisors and actuaries when establishing the rate and reviews their assumptions with the Retirement Plan Review Committee of the Board of Directors. The actual return on plan assets was 19.7% in 2003 and the 10-year average return as of year-end 2003 was 7.9%. While the current 10-year average is below the 9.0% assumption, primarily due to the poor performance of the U.S. equity markets in the 2000 to 2002 time frame, the 10-year rolling average return was over 10.0% in seven of the last 10 years. Management believes that the 9.0% expected long-term rate of return assumption is achievable and reasonable given current market conditions and forecasts.

The rate of compensation increase assumption was changed to use a graded assumption beginning at 2% for the 2003 fiscal year and increasing 0.75% per year until it reaches 5% for the 2007 fiscal year and later.

	2003	2002
	-----	-----
ASSUMED HEALTH CARE TREND RATES AT FISCAL YEAR END		
Health care trend rate assumed for next year	8.000%	9.000%
Rate that the trend rate gradually declines to (ultimate trend rate)	6.000%	6.000%
Year that the rate reaches the ultimate trend rate	2008	2008

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	1-Percentage-Point Increase		1-Percentage-Point Decrease	
	2003	2002	2003	2002
	-----	-----	-----	-----
(Dollars in thousands)				
Effect on total of service and interest cost components ...	\$ 155	\$ 149	\$ (137)	\$ (131)
Effect on post-retirement benefit obligation	2,439	2,297	(2,147)	(2,029)

On December 8, 2003, the Medicare Prescription Drug, Improvement and Modernization Act of 2003 ("the Act") was signed into law. The Act expanded Medicare to include, for the first time, coverage for prescription drugs. The Company sponsors retiree medical programs for certain of its locations and expects that this legislation may eventually reduce the Company's costs for some of these programs. At present, no analysis of the potential reduction in the Company's costs or obligations has been performed as the Company awaits guidance from various governmental and regulatory agencies concerning the requirements that must be met to obtain these cost reductions, as well as the manner in which such savings should be measured. Because of various uncertainties related to the Company's response to this legislation and the appropriate accounting methodology for this event, the Company has elected to defer financial recognition of this legislation until the Financial Accounting Standards Board issues final accounting guidance. When issued, that final guidance could require the Company to change previously reported information. This deferral election is permitted under FSP No. FAS 106-1.

PLAN ASSETS

The Company's domestic defined benefit pension plan weighted-average asset allocation at fiscal year-end 2003 and 2002 and target allocation are as follows:

ASSET CATEGORY	Target Allocation Range	Percentage of Pension Plan Assets at Fiscal Year End	
		2003	2002
	-----	-----	-----
Equity securities	35-75%	73%	75%
Debt securities	10-25%	20%	24%
Real estate	0-5%	6%	0%

Other	0-10%	1%	1%
		-----	-----
Total		100%	100%

The Company's pension plan investment strategy, as approved by the Retirement Plan Review Committee, is to employ an allocation of investments that will generate returns equal to or better than the projected long-term growth of pension liabilities so that the plan will be self-funding. The return objective is to earn a real return (i.e., the actual return less inflation) of 6.0% as measured on a 10-year moving-average basis. The allocation of investments is designed to maximize the advantages of diversification while mitigating the risk to achieve the return objective. Risk is defined as the annual variability in value and is measured in terms of the standard deviation of investment return. Under the Company's investment policies, allowable investments include domestic equities, international

equities, fixed income securities, alternative securities (which include real estate and private venture capital investments) and tactical allocation (a mix of equities and bonds). Ranges, in terms of a percentage of the total assets, are established for each allowable class of security. The Company may vary the actual asset mix based on the ratio of the plan assets and liabilities. The investment policy prohibits the use of derivative financial instruments that create or add leverage to an existing security position. Derivatives may be used to hedge an existing security or as a risk reduction strategy. Management reviews the asset allocation on an annual or more frequent basis and makes revisions as deemed necessary.

None of the plan assets noted above are invested in the Company's common stock.

CASH FLOWS - EMPLOYER CONTRIBUTIONS

The Company expects to contribute \$1.7 million to its pension benefit plans and \$3.6 million to its other benefit plans in 2004.

OTHER BENEFIT PLANS

The Company also has accrued unfunded retirement arrangements for certain directors. The projected benefit obligation was \$0.1 million at December 31, 2003 and \$0.2 million at December 31, 2002. A corresponding accumulated benefit obligation of \$0.1 million at December 31, 2003 and \$0.2 million at December 31, 2002 has been recognized as a liability and is included in retirement and post-employment benefits. Certain foreign subsidiaries have funded and accrued unfunded pension and other post-employment arrangements. The liability for these plans was \$4.7 million at December 31, 2003 and \$3.6 million at December 31, 2002 and was included in retirement and post-employment benefits on the Consolidated Balance Sheet.

The Company also sponsors a defined contribution plan available to substantially all U.S. employees. Company contributions to the plan are based on matching a percentage of employee savings up to a specified savings level. The Company's contributions were \$1.0 million in 2003, \$1.0 million in 2002 and \$2.5 million in 2001. The Company reduced its matching percentage in half effective with the beginning of the fourth quarter 2001.

NOTE L - CONTINGENCIES AND COMMITMENTS

CBD CLAIMS

The Company is a defendant in proceedings in various state and federal courts by plaintiffs alleging that they have contracted chronic beryllium disease (CBD) or related ailments as a result of exposure to beryllium. Plaintiffs in CBD 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, if any, claim loss of consortium. Additional CBD claims may arise.

Management believes the Company has 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 the Company. Third-party plaintiffs (typically employees of customers) face a lower burden of proof than do the Company's employees, but these cases are generally covered by varying levels of insurance.

Although it is not possible to predict the outcome of the litigation pending against the Company and its subsidiaries, the Company provides 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 the actions could be decided unfavorably in amounts exceeding the Company's reserves. An unfavorable outcome or settlement of a pending CBD case or additional adverse media coverage could encourage the commencement of additional similar litigation. The Company is unable to estimate its potential exposure to unasserted claims. The Company recorded a reserve for CBD litigation of \$2.9 million at December 31, 2003 and \$4.2 million at December 31, 2002. The reserve was reduced in both 2003 and 2002 for settlement payments as well as for changes in estimates for the outstanding claims as a result of favorable rulings and agreements. An asset of \$3.2 million was recorded at December 31, 2003 and \$4.9 million at December 31, 2002 for recoveries from insurance carriers for outstanding claims that are insured and for prior settlements initially paid directly by the Company to the plaintiff on insured claims. The reserve is included in other long-term liabilities and the recovery is included in other assets on the Consolidated Balance Sheets.

While the Company is unable to predict the outcome of the current or future CBD proceedings based upon currently known facts and assuming collectibility of insurance, the Company does not believe that resolution of these proceedings will have a material adverse effect on the financial condition or cash flow of the Company. However, the Company's results of operations could be materially affected by unfavorable results in one or more of these cases.

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

ENVIRONMENTAL PROCEEDINGS

The Company has an active program for environmental compliance that includes the identification of environmental projects and estimating their impact on the Company's financial performance and available resources. Environmental expenditures that relate to current operations, such as wastewater treatment and control of airborne emissions, are either expensed or capitalized as appropriate. The Company records reserves for the probable costs for environmental remediation projects. The Company's environmental engineers perform routine ongoing analyses of the remediation sites. Accruals are based upon their analyses and are established at either the best estimate or, absent a best estimate, at the low end of the estimated range of costs. The accruals are revised for the results of ongoing studies and for differences between actual and projected costs. The accruals are also affected by rulings and negotiations with regulatory agencies. The timing of payments often lags the accrual, as environmental projects typically require a number of years to complete. The Company established undiscounted reserves for environmental remediation projects of \$6.9 million at December 31, 2003 and \$7.7 million at December 31, 2002. The current portion of the reserve totaled \$0.7 million at December 31, 2003 and was included in other liabilities and accrued items while the remaining \$6.2 million of the reserve at December 31, 2003 is considered long-term and is included in other long-term liabilities on the Consolidated Balance Sheet. These reserves cover existing or currently foreseen projects. It is possible that additional environmental losses may occur beyond the current reserve, the extent of which cannot be estimated.

The environmental reserve was reduced by \$0.6 million in 2003 as a result of revised estimates of the required remediation work and related costs, primarily for RCRA projects, SWMU closure and other projects at the Company's Elmore, Ohio site. Payments against the reserve totaled \$0.2 million in 2003. The environmental expense was \$0.6 million in 2002. The environmental reserve was reduced by \$1.0 million during 2001 as result of a revised cost estimate for an established Voluntary Action Plan and the completion of another project for less than the previously estimated cost. The reserve was increased by \$0.7 million in 2001 for various projects at the Elmore site. These items combined for a net credit of \$0.3 million to income in 2001.

LONG-TERM OBLIGATION

The Company has a long-term supply arrangement with Ulba/Kazatomprom of the Republic of Kazakhstan and their marketing representative, Nukem, Inc. of Connecticut. The agreement was signed in 2000 and amended in 2001 and 2003. Under the amended 2003 agreement, the purchase commitments for copper beryllium master alloy have been significantly reduced from the previous levels. The 2003 amended agreement also added purchase commitments for beryllium vacuum cast billets and extended the contract period to 2012. All materials under the arrangement are sourced from Ulba/Kazatomprom. The annual base purchase commitments total between \$5.3 and \$5.6 million for 2004 through 2007. The price per pound escalates each year through 2007. A new price will be renegotiated for the years 2008 through 2012. If a new price cannot be agreed to by December 31, 2007, then the material purchases will terminate with the 2008 delivery volumes. The contract allows for the Company to purchase additional quantities of copper beryllium master alloy up to an annual maximum of 150,000 pounds of beryllium contained in the master alloy. The purchase of beryllium vacuum cast billets can be plus or minus 10% of the annual base quantity. Purchases of beryllium-containing materials from Nukem were \$3.3 million in 2001 and immaterial in both 2003 and 2002.

The Company has agreements to purchase stated quantities of beryl ore, beryllium metal and copper beryllium master alloy from the Defense Logistics Agency of the U.S. Government. The agreements expire in 2007. Annual purchase commitments total approximately \$6.4 million in 2004 through 2007. The beryllium component of the contract price is adjusted quarterly from these stated totals based upon fluctuations in the non-seasonally adjusted consumer price index. The Company may elect to take delivery of the materials in advance of the commitment dates. Purchases under these agreements totaled approximately \$5.7 million in 2003, \$3.9 million in 2002 and \$6.4 million in 2001. The purchased material will serve as raw material input for operations within Brush Wellman Inc. and Brush Resources Inc.

OTHER

The Company has outstanding letters of credit totaling \$7.1 million related to workers' compensation, consigned precious metal guarantees and environmental remediation issues that expire in 2004.

The Company is subject to various other legal or other proceedings that relate to the ordinary course of its business. The Company believes that the resolution of these other legal or other proceedings, individually or in the aggregate, will not have a material adverse impact upon the Company's Consolidated Financial Statements.

NOTE M - SEGMENT REPORTING AND GEOGRAPHIC INFORMATION

Selected financial data by business segment as proscribed by SFAS No.131, "Disclosures about Segments of an Enterprise and Related Information," for 2003, 2002 and 2001 are as follows:

(Dollars in thousands)	Metal Systems	Micro- electronics	Total Segments	All Other	Total
	-----	-----	-----	-----	-----
2003					
Revenues from external customers	\$ 239,404	\$ 157,323	\$ 396,727	\$ 4,319	\$ 401,046
Intersegment revenues	2,414	1,119	3,533	17,994	21,527
Depreciation, depletion and amortization	11,250	4,020	15,270	5,461	20,731
Profit (loss) before interest and taxes	(16,590)	12,618	(3,972)	(5,368)	(9,340)
Assets	258,958	74,137	333,095	38,521	371,616
Expenditures for long-lived assets	2,830	2,930	5,760	559	6,319
2002					
Revenues from external customers	\$ 227,884	\$ 139,180	\$ 367,064	\$ 5,765	\$ 372,829
Intersegment revenues	3,118	1,566	4,684	12,171	16,855
Depreciation, depletion and amortization	12,060	3,930	15,990	4,650	20,640
Profit (loss) before interest and taxes	(37,657)	3,845	(33,812)	10,967	(22,845)
Assets	223,986	71,832	295,818	39,061	334,879
Expenditures for long-lived assets	1,930	2,370	4,300	1,114	5,414
2001					
Revenues from external customers	\$ 295,690	\$ 169,598	\$ 465,288	\$ 7,281	\$ 472,569
Intersegment revenues	2,596	2,066	4,662	12,036	16,698
Depreciation, depletion and amortization	12,560	3,780	16,340	5,269	21,609
Profit (loss) before interest and taxes	(20,117)	4,568	(15,549)	1,480	(14,069)
Assets	265,371	68,401	333,772	69,881	403,653
Expenditures for long-lived assets	13,031	6,841	19,872	3,412	23,284

Notes to Consolidated Financial Statements

Brush Engineered Materials Inc. and Subsidiaries, December 31, 2003

Segments are evaluated using earnings before interest and taxes. The "All Other" column includes the operating results of BEM Services, Inc. and Brush Resources Inc., two wholly owned subsidiaries of the Company, as well as the parent company's and other corporate expenses. BEM Services charges a management fee for the services provided to the other businesses within the Company on a cost-plus basis. Brush Resources sells beryllium hydroxide, produced from its mine and extraction mill in Utah, to external customers and to businesses within the Metal Systems Group. Assets shown in All Other include cash, computer hardware and software, deferred taxes, capitalized interest and the operating assets for Brush Resources Inc. Inventories for Metal Systems and Microelectronics are shown at their FIFO values with the LIFO reserve included under the All Other column. Intersegment revenues are eliminated in consolidation. The revenues from external customer totals are presented net of the intersegment revenues. Assets for the Metals Systems Group include the \$51.8 million of equipment purchased in 2003 that was previously held under an operating lease.

The Company's sales from U.S. operations to external customers, including exports, were \$311.5 million in 2003, \$301.1 million in 2002, and \$385.8 million in 2001. Revenues attributed to countries based upon the location of customers and long-lived assets deployed by the Company by country are as follows:

(Dollars in thousands)	2003	2002	2001
-----	-----	-----	-----
REVENUES			
United States	\$ 276,668	\$ 268,548	\$ 338,233
All other	124,378	104,281	134,336
	-----	-----	-----
Total	\$ 401,046	\$ 372,829	\$ 472,569
	=====	=====	=====
LONG-LIVED ASSETS			
United States	\$ 185,168	\$ 147,263	\$ 166,126
All other	5,678	5,281	5,170
	-----	-----	-----
Total	\$ 190,846	\$ 152,544	\$ 171,296
	=====	=====	=====

No individual country, other than the United States, or customer accounted for 10% or more of the Company's revenues for the years presented. Revenues from outside the U.S. are primarily from Europe and Asia.

NOTE N - RELATED PARTY TRANSACTIONS

The Company has outstanding loans of \$0.4 million with six employees, including two executive officers, as of December 31, 2003. The loan balance was \$0.4 million as of December 31, 2002 as well. The loans were made in the first quarter 2002 pursuant to life insurance agreements between the Company and the employees. The portion of the premium paid by the Company is treated as a loan from the Company to the employee and the loans are secured by the insurance policies, which are owned by the employees. The agreements require the employee to maintain the insurance policy's cash surrender value in an amount at least equal to the outstanding loan balance. The loan is payable from the insurance proceeds upon the employee's death or at an earlier date due to the occurrence of specified events. The loans bear an interest rate equal to the applicable federal rate.

NOTE O - OTHER COMPREHENSIVE INCOME

The following table summarizes the net gain/(loss) by component within other comprehensive income as of December 31, 2003, 2002 and 2001.

	2003	December 31, 2002	2001
-----	-----	-----	-----
(Dollars in thousands)			
Foreign currency translation adjustment	\$ (982)	\$ (1,457)	\$ (2,289)
Change in the fair value of derivative financial instruments ...	(3,216)	(7,839)	(2,061)
Minimum pension liability	(12,596)	(13,563)	-
	-----	-----	-----
Total	\$ (16,794)	\$ (22,859)	\$ (4,350)
	=====	=====	=====

NOTE P - QUARTERLY DATA (UNAUDITED)**Years ended December 31, 2003 and 2002.**

	2003				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
(Dollars in thousands except per share data)					
Net sales	\$ 99,518	\$ 101,805	\$ 94,156	\$ 105,567	\$ 401,046
Gross profit	17,113	18,864	14,370	22,691	73,038
Percent of sales	17.2%	18.5%	15.3%	21.5%	18.2%
Net income (loss)	(3,016)	37	(3,060)	(7,187)	(13,226)
Net income (loss) per share of common stock	(0.18)	-	(0.18)	(0.43)	(0.80)
Stock price range					
High	6.15	8.92	10.45	15.60	
Low	4.80	5.06	7.70	10.20	
	2002				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
(Dollars in thousands except per share data)					
Net sales	\$ 89,582	\$ 100,749	\$ 93,481	\$ 89,017	\$ 372,829
Gross profit	10,254	15,070	12,015	10,558	47,897
Percent of sales	11.4%	15.0%	12.9%	11.9%	12.8%
Net loss	(3,834)	(2,049)	(2,906)	(26,815)	(35,604)
Net loss per share of common stock	(0.23)	(0.12)	(0.18)	(1.62)	(2.15)
Stock price range					
High	14.00	13.24	12.20	8.00	
Low	10.25	11.15	6.98	4.50	

Fourth quarter 2003 results include a \$6.0 million pre-tax charge to write off deferred costs and recognize derivative ineffectiveness as a result of the debt refinancing.

Selected Financial Data

Brush Engineered Materials Inc. and Subsidiaries

(Dollars in thousands except for share data)

	2003	2002	2001	2000	1999
	-----	-----	-----	-----	-----
FOR THE YEAR					
Net sales	\$ 401,046	\$ 372,829	\$ 472,569	\$ 563,690	\$ 455,707
Cost of sales	328,008	324,932	404,574	444,951	363,773
Gross profit	73,038	47,897	67,995	118,739	91,934
Operating profit (loss)	(9,340)	(22,845)	(14,069)	22,986	10,558
Interest expense	3,355	3,010	3,327	4,652	4,173
Income (loss) from continuing operations					
Before income taxes	(12,695)	(25,855)	(17,396)	18,334	6,385
Income taxes (benefit)	576	9,749	(7,122)	4,169	(54)
Net income (loss)	(13,226)	(35,604)	(10,274)	14,165	6,439
Earnings per share of common stock:					
Basic net income (loss)	(0.80)	(2.15)	(0.62)	0.87	0.40
Diluted net income (loss)	(0.80)	(2.15)	(0.62)	0.86	0.40
Dividends per share of common stock	--	--	0.24	0.48	0.48
Depreciation and amortization	20,731	20,640	21,609	22,664	27,037
Capital expenditures	6,162	5,248	23,130	21,306	16,758
Mine development expenditures	157	166	154	332	288
YEAR-END POSITION					
Working capital	85,141	82,645	110,894	143,387	124,831
Ratio of current assets to current liabilities	2.2 to 1	2.1 to 1	2.4 to 1	2.3 to 1	2.3 to 1
Property and equipment:					
At cost	535,421	476,283	469,663	449,697	440,234
Cost less depreciation and impairment	190,846	152,544	171,296	170,460	170,939
Total assets	371,616	334,879	403,653	452,506	428,406
Other long-term liabilities	64,097	65,977	62,473	55,454	53,837
Long-term debt	85,756	36,219	47,251	43,305	42,305
Shareholders' equity	153,573	159,094	214,350	229,907	220,638
Book value per share:					
Basic	9.27	9.61	12.98	14.11	13.62
Diluted	9.21	9.58	12.87	13.98	13.55
Weighted number of shares of stock outstanding:					
Basic	16,562,864	16,557,388	16,518,691	16,292,431	16,198,885
Diluted	16,671,916	16,608,725	16,650,587	16,448,667	16,279,591
Shareholders of record	1,791	1,864	1,981	2,101	2,330
Number of employees	1,833	1,862	1,946	2,500	2,257

Minority interest of \$45,000 decreased the net loss for 2003.

In addition to the capital expenditures shown above, with the proceeds from the debt refinancing in 2003, the Company purchased \$51.8 million of assets previously held under an operating lease that have been used by the Company since 1998.

A deferred tax valuation allowance increased income tax expense by \$5.3 million and \$19.9 million in 2003 and 2002, respectively.

A special charge reduced net income by \$16.5 million in 1998.

See Notes to Consolidated Financial Statements.

1998	1997	1996	1995	1994	1993
-----	-----	-----	-----	-----	-----
\$ 409,892	\$ 433,801	\$ 376,279	\$ 369,618	\$ 345,878	\$ 295,478
325,173	324,463	271,149	268,732	253,938	227,686
84,719	109,338	105,130	100,886	91,940	67,792
(10,313)	36,024	34,305	29,086	25,098	10,658
1,249	553	1,128	1,653	2,071	2,952
(11,562)	35,471	33,177	27,433	23,027	7,706
(4,430)	9,874	8,686	6,744	4,477	1,248
(7,132)	25,597	24,491	20,689	18,550	6,458
(0.44)	1.58	1.55	1.28	1.15	0.40
(0.44)	1.56	1.53	1.27	1.15	0.40
0.48	0.46	0.42	0.36	0.26	0.20
24,589	19,329	22,954	20,911	19,619	21,720
36,732	53,155	26,825	24,244	17,214	11,901
433	9,526	3,663	787	543	814
100,992	100,599	128,172	125,156	116,708	105,272
2.1 to 1	2.3 to 1	2.9 to 1	2.9 to 1	2.8 to 1	3.1 to 1
421,467	463,689	404,127	374,367	350,811	337,342
164,469	173,622	130,220	121,194	116,763	118,926
403,690	383,852	355,779	331,853	317,133	293,372
49,955	48,025	47,271	45,445	43,354	40,663
32,105	17,905	18,860	16,996	18,527	24,000
221,811	236,813	219,257	200,302	186,940	172,075
13.63	14.60	13.84	12.40	11.61	10.70
13.50	14.41	13.72	12.30	11.57	10.69
16,267,804	16,214,718	15,846,358	16,159,508	16,102,350	16,087,250
16,424,747	16,429,468	15,980,481	16,289,795	16,156,159	16,093,696
2,313	2,329	2,407	2,351	2,521	2,566
2,167	2,160	1,926	1,856	1,833	1,803

Brush Engineered Materials Inc. Directors, Officers, Facilities and Subsidiaries

BOARD OF DIRECTORS AND COMMITTEES OF THE BOARD

ALBERT C. BERTICKER (2), (3), (4)

Non-Executive Chairman
Oglebay Norton Company
Retired Chairman and CEO
Ferro Corporation

GORDON D. HARNETT (2)

Chairman, President and CEO
Brush Engineered Materials Inc.

DAVID H. HOAG (2), (3), (4), (5)

Retired Chairman and CEO
The LTV Corporation

JOSEPH P. KEITHLEY (2), (3), (4), (5)

Chairman, President and CEO
Keithley Instruments, Inc.

WILLIAM B. LAWRENCE (1), (4)

Former Executive Vice President,
General Counsel & Secretary
TRW, Inc.

WILLIAM P. MADAR (2), (3), (4)

Chairman and Former CEO
Nordson Corporation

WILLIAM G. PRYOR (4), (5)

Retired President
Van Dorn Demag Corporation

Former President and CEO

Van Dorn Corporation

N. MOHAN REDDY (1), (4)

Professor
The Weatherhead School of Management
Case Western Reserve University

WILLIAM R. ROBERTSON (1), (4), (5)

Managing Partner
Kirtland Capital Partners

JOHN SHERWIN, JR. (1), (2), (4), (5)

President
Mid-Continent Ventures, Inc.
1 Audit Committee
2 Executive Committee
3 Governance Committee
4 Organization and Compensation
Committee
5 Retirement Plan Review Committee

CHARLES F. BRUSH, III

Director Emeritus

CORPORATE AND EXECUTIVE OFFICERS

GORDON D. HARNETT (1), (2)
Chairman, President and CEO

JOHN D. GRAMPA (1), (2)
Vice President Finance
and Chief Financial Officer

DANIEL A. SKOCH (1), (2)
Senior Vice President
Administration

MICHAEL C. HASYCHAK (1)
Vice President, Treasurer and Secretary

JAMES P. MARROTTE (1)
Vice President, Controller

JOHN J. PALLAM (1)
Vice President, General Counsel

GARY W. SCHIAVONI (1)
Assistant Treasurer and Assistant Secretary 1 Corporate Officers
2 Executive Officers

OPERATING GROUPS

Alloy Products
RICHARD J. HIPPLE, PRESIDENT

Beryllium Products
MICHAEL D. ANDERSON, PRESIDENT

Brush International, Inc.
STEPHEN FREEMAN, PRESIDENT

Brush Resources Inc.
ALEX C. BOULTON, PRESIDENT

Technical Materials, Inc.
ALFONSO T. LUBRANO, PRESIDENT

Williams Advanced Materials Inc.
RICHARD W. SAGER, PRESIDENT

Zentrix Technologies Inc.
RICHARD W. SAGER, PRESIDENT

OFFICES AND FACILITIES

MANUFACTURING FACILITIES

Brewster, New York
Buffalo, New York
Delta, Utah
Elmore, Ohio
Fremont, California
Lincoln, Rhode Island
Lorain, Ohio
Newburyport, Massachusetts
Oceanside, California
Reading, Pennsylvania
Santa Clara, California
Singapore
Subic Bay, Philippines

Taipei, Taiwan
Tucson, Arizona
Wheatfield, New York

CORPORATE OFFICES

Cleveland, Ohio

SERVICE CENTERS

Elmhurst, Illinois
Fairfield, New Jersey
Singapore
Stuttgart, Germany
Theale, England
Tokyo/Fukaya, Japan
Warren, Michigan

SUBSIDIARIES

BEM Services, Inc.
Cleveland, Ohio

Brush Wellman Inc.
Cleveland, Ohio

Brush Ceramic Products Inc.
Tucson, Arizona

Brush International, Inc.
Cleveland, Ohio

Brush Resources Inc.
Delta, Utah

Brush Wellman GmbH
Stuttgart, Germany

Brush Wellman (Japan), Ltd.
Tokyo, Japan

Brush Wellman Limited
Theale, England

Brush Wellman (Singapore) Pte Ltd
Singapore

Circuits Processing Technology, Inc.
Oceanside, California

Technical Materials, Inc.
Lincoln, Rhode Island

Williams Advanced Materials Inc.
Buffalo, New York

Williams Advanced Materials
Far East Pte Ltd.
Singapore

Zentrix Technologies Inc.
Tucson, Arizona

Corporate Data

ANNUAL MEETING

The Annual Meeting of Shareholders will be held on May 4, 2004 at 11:00 a.m. at The Forum, One Cleveland Center, 1375 East Ninth Street, Cleveland, Ohio.

INVESTOR INFORMATION

Brush Engineered Materials Inc. maintains an active program of communication with shareholders, securities analysts and other members of the investment community. Management makes regular presentations in major financial centers around the world. To obtain:

- additional copies of the annual report

- SEC Form 10K/10Q

Please contact:

Michael C. Hasychak

Vice President, Treasurer and Secretary

WEB SITE

Brush Engineered Materials Inc.'s web site on the Internet offers financial and investor information, news and facts about the Company, its businesses, markets and products. The Company has adopted Corporate Governance Guidelines and a Code of Business Conduct and Ethics in compliance with applicable New York Stock Exchange and Securities and Exchange Commission requirements. These materials, along with the charters of the Audit, Governance, Organization and Compensation, and Retirement Plan Review Committees of the Company's Board of Directors, which also comply with applicable requirements, are available on the Company's web site.

Visit the site at: [HTTP://WWW.BEMINC.COM](http://WWW.BEMINC.COM)

AUDITORS

Ernst & Young LLP

925 Euclid Avenue, Suite 1300, Cleveland, Ohio 44115

TRANSFER AGENT AND REGISTRAR

National City Bank Corporate Trust Operations P.O. Box 92301, Cleveland, OH 44193-0900 For shareholder inquiries, call: (800) 622-6757

STOCK LISTING

New York Stock Exchange/Symbol: BW

CORPORATE HEADQUARTERS

Brush Engineered Materials Inc.

17876 St. Clair Ave., Cleveland, Ohio 44110

(216) 486-4200 - Facsimile: (216) 383-4091

[BRUSH ENGINEERED MATERIALS LOGO]

17876 St. Clair Avenue - Cleveland, Ohio 44110 - 216.486.4200

EXHIBIT 21

Subsidiaries of Registrant

The Company has the following subsidiaries, all of which are wholly owned and included in the consolidated financial statements.

Name of Subsidiary -----	State or Country of Incorporation -----
BEM Services, Inc.	Ohio
Brush Wellman Inc.	Ohio
Brush International, Inc.	Ohio
Brush Resources Inc.	Utah
Brush Wellman GmbH	Germany
Brush Wellman (Japan), Ltd.	Japan
Brush Wellman Limited	England
Brush Wellman (Singapore) Pte Ltd.	Singapore
Technical Materials, Inc.	Ohio
Williams Advanced Materials Inc.	New York
Williams Advanced Materials Pte Ltd.	Singapore
Zentrix Technologies Inc.	Arizona

Exhibit 23

Consent of Independent Auditors

We consent to the incorporation by reference in this Annual Report (Form 10-K) of Brush Engineered Materials Inc. of our report dated January 28, 2004, included in the 2003 Annual Report to the Shareholders of Brush Engineered Materials Inc.

Our audits also included the financial statement schedule of Brush Engineered Materials Inc. listed in Item 15(a). This schedule is the responsibility of the Company's management. Our responsibility is to express an opinion based on our audits. In our opinion, the financial statement schedule referred to above, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects, the information set forth therein.

We also consent to the incorporation by reference in the following Registration Statements and Post-Effective Amendments of our report dated January 28, 2004, with respect to the consolidated financial statements incorporated herein by reference, and our report included in the preceding paragraph with respect to the financial statement schedule included in this Annual Report (Form 10-K) of Brush Engineered Materials Inc. for the year ended December 31, 2003:

Registration Statement Number 333-88994 on Form S-8 dated May 24, 2002;

Post-Effective Amendment Number 1 to Registration Statement Number 333-74296 on Form S-8 dated November 30, 2001;

Post-Effective Amendment Number 5 to Registration Statement Number 2-64080 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 333-63355 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 33-28605 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 333-63353 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 333-63357 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 333-52141 on Form S-8 dated May 17, 2000;

Post-Effective Amendment Number 1 to Registration Statement Number 2-90724 on Form S-8 dated May 17, 2000;

Registration Statement Number 333-63353 on Form S-8 dated September 14, 1998;

Registration Statement Number 333-63355 on Form S-8 dated September 14, 1998;

Registration Statement Number 333-63357 on Form S-8 dated September 14, 1998;

Registration Statement Number 333-52141 on Form S-8 dated May 5, 1998;

Registration Statement Number 33-28605 on Form S-8 dated May 5, 1989;

Registration Statement Number 2-90724 on Form S-8 dated April 27, 1984;

Post-Effective Amendment Number 3 to Registration Statement Number 2-64080 on Form S-8 dated April 22, 1983.

Cleveland, Ohio
March 9, 2004

EXHIBIT 24

SIGNATURES

Pursuant to the requirements of Section 13 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

March 15, 2004

BRUSH ENGINEERED MATERIALS INC.

/s/ GORDON D. HARNETT

By: /s/ JOHN D. GRAMPA

Gordon D. Harnett
Chairman of the Board, President
and Chief Executive Officer

John D. Grampa
Vice President Finance
and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ GORDON D. HARNETT*

Chairman of the Board, President,
Chief Executive Officer and Director
(Principal Executive Officer)

March 15, 2004

Gordon D. Harnett*

/s/ JOHN D. GRAMPA

Vice President Finance and Chief Financial
Officer (Principal Financial and Accounting
Officer)

March 15, 2004

John D. Grampa

/s/ ALBERT C. BERSTICKER*

Director

March 15, 2004

Albert C. Bersticker

/s/ DAVID H. HOAG*

Director

March 15, 2004

David H. Hoag*

/s/ JOSEPH P. KEITHLEY*

Director

March 15, 2004

Joseph P. Keithley*

/s/ WILLIAM B. LAWRENCE*

Director

March 15, 2004

William B. Lawrence*

/s/ WILLIAM P. MADAR*

Director

March 15, 2004

William P. Madar*

/s/ WILLIAM G. PRYOR*

Director

March 15, 2004

William G. Pryor*

/s/ N. MOHAN REDDY*

Director

March 15, 2004

N. Mohan Reddy*

/s/ WILLIAM R. ROBERTSON*

Director

March 15, 2004

William R. Robertson*

/s/ JOHN SHERWIN, JR.*

Director

March 15, 2004

John Sherwin, Jr.*

EXHIBIT 31.1

CERTIFICATIONS

I, Gordon D. Harnett, certify that:

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

Dated: March 15, 2004

/s/ GORDON D. HARNETT

Gordon D. Harnett
Chairman, President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATIONS

I, John D. Grampa, certify that:

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

Dated: March 15, 2004

/s/ JOHN D. GRAMPA

John D. Grampa
Vice President Finance and CFO

EXHIBIT 32.1

Certification Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to

Section 906 of the Sarbanes-Oxley Act of 2002

I, Gordon D. Harnett, President, Chairman of the Board and Chief Executive Officer of Brush Engineered Materials Inc. (the "Company"), do hereby certify in accordance with 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge,

1. The Annual Report on Form 10-K of the Company for the period ending December 31, 2003 (the "Periodic Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)), and
2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 15, 2004

/s/ GORDON D. HARNETT

Gordon D. Harnett
President, Chairman of the Board and Chief
Executive Officer

EXHIBIT 32.2

Certification Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to

Section 906 of the Sarbanes-Oxley Act of 2002

I, John D. Grampa, Vice President Finance and Chief Financial Officer of Brush Engineered Materials Inc. (the "Company"), do hereby certify in accordance with 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge,

1. The Annual Report on Form 10-K of the Company for the period ending December 31, 2003 (the "Periodic Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)), and
2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 15, 2004

/s/ JOHN D. GRAMPA

John D. Grampa
Vice President Finance and Chief Financial Officer