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SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 1998 Commission File No. 0-2504

MINE SAFETY APPLIANCES COMPANY

(Exact name of registrant as specified in its charter)

Pennsylvania	25-0668780
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)

121 Gamma Drive RIDC Industrial Park O'Hara Township Pittsburgh, Pennsylvania	15238
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: 412/967-3000

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

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

Preferred Stock Purchase Rights

(Title of Class)

Common Stock, no par value

(Title of Class)

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 and (2) has been subject to such filing requirements for the past 90 days.

Yes X 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 the definitive proxy statement incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [X]

As of February 26, 1999, there were outstanding 4,926,832 shares of common stock, no par value, including 571,690 shares held by the Mine Safety Appliances Company Stock Compensation Trust. Total market value of outstanding voting stock as of February 26, 1999 was $319,012,372. The aggregate market value of voting stock held by non-affiliates as of February 26, 1999 was $165,719,013.

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DOCUMENTS INCORPORATED BY REFERENCE

The following documents have been incorporated by reference:

DOCUMENT	FORM 10-K PART NUMBER
(1) Annual Report to Shareholders for the year ended December 31, 1998	I, II, IV
(2) Proxy Statement filed pursuant to Regulation 14A in connection with the registrant's Annual Meeting of Shareholders to be held on May 11, 1999	III

PART I

Item 1. Business

Operating Segments:

The company is organized into three geographic operating segments - United States, Europe and Other non-U.S. Further information with respect to the registrant's operating segments is reported at Note 7 of Notes to Consolidated Financial Statements contained in the registrant's Annual Report to Shareholders for the year ended December 31, 1998, incorporated herein by reference.

Products and Markets:

The primary business of the registrant and its affiliated companies is the manufacture and sale of products designed to protect the safety and health of workers throughout the world.

Principal products include respiratory protective equipment that is air-purifying, air-supplied and self-contained in design. The registrant also produces instruments that monitor and analyze workplace environments and control industrial processes. Personal protective products include head, eye and face, body and hearing protectors. Many of these products are sold under the registered trademark "MSA", and have wide application for workers in industries that include manufacturing, fire service, power generation, telecommunications, mining, chemicals, petroleum, construction, pulp and paper processing, transportation, government, automotive, aerospace, asbestos abatement, and hazardous materials clean-up.

Other products manufactured and sold, which do not fall within the category of safety and health equipment, include boron-based and other specialty chemicals. Additional information concerning the registrant's products is reported at Note 7 of Notes to Consolidated Financial Statements contained in the registrant's Annual Report to Shareholders for the year ended December 31, 1998, incorporated herein by reference.

The registrant and its affiliated companies are in competition with many large and small enterprises. In the opinion of management, the registrant is a leader in the manufacture of safety and health equipment.

Orders, except under contracts with U.S. government agencies are generally filled promptly after receipt and the production period for special items is usually less than one year. The backlog at year end of orders under contracts with U.S. government agencies at year end was $18,265,000 in 1998, $19,600,000 in 1997 and $14,400,000 in 1996. Approximately $2,780,000 under contracts with U.S. government agencies is expected to be shipped after December 31, 1999.

Sales of products to U.S. government agencies increased in 1998; however, incoming orders were slightly lower than shipments in 1998, but higher than 1997 incoming orders. The company's business is not dependent upon a single customer or group of related customers, the loss of which would have a material adverse effect on the registrant's results.

Research:

The registrant and its affiliated companies engage in applied research with a view to developing new products and new applications for existing products. Most of their products are designed and manufactured to meet currently applicable performance and test standards published by groups such as ANSI (American National Standards Institute), MSHA (Mine Safety & Health Administration), NIOSH (National Institute for Occupational Safety and Health), UL (Underwriters' Laboratories), SEI (Safety Equipment Institute), FM (Factory Mutual), CEN (European Committee for Standardization) and CSA (Canadian Standards Association). The registrant also from time to time engages in research projects for others such as the Bureau of Mines and the Department of Defense or its prime contractors. Registrant-sponsored research and development costs were $17,415,000 in 1998, $16,668,000 in 1997, and $19,122,000 in 1996.

In the aggregate, patents have represented an important element in building up the business of the registrant and its affiliates, but in the opinion of management no one patent or group of patents is of material significance to the business as presently conducted.

General:

The company was founded in 1914 and is headquartered in Pittsburgh, Pennsylvania. As of December 31, 1998, the registrant and its affiliated companies had approximately 4,100 employees, of which 2,100 were employed by international affiliates. None of the U.S. employees are subject to the provisions of a collective bargaining agreement.

In the United States and in those countries in which the registrant has affiliates, its products are sold by its own salespersons, independent distributors and/or manufacturers' representatives. In international countries where the registrant has no affiliate, products are sold primarily through independent distributors located in those countries.

The registrant is cognizant of environmental responsibilities and has taken affirmative action regarding this responsibility. There are no current or expected legal proceedings or expenditures with respect to environmental matters which would materially affect the operations of the registrant and its affiliates.

Generally speaking, the operations of the registrant and its affiliates are such that it is possible to maintain sufficient inventories of raw materials and component parts on the manufacturing premises.

Equipment and machinery for processing chemicals and rubber, plastic injection molding equipment, molds, metal cutting, stamping and working equipment, assembly fixtures and similar items are regularly acquired, repaired or replaced in the ordinary course of business at prevailing market prices as necessary.

Further information about the registrant's business is included in Management's Discussion and Analysis at pages 12 to 15 of the Annual Report to Shareholders, incorporated herein by reference.

Executive Officers:

Name	Age	All Positions and Offices Presently Held
J. T. Ryan III	55	Chairman and Chief Executive Officer
T. B. Hotopp	57	President
J. H. Baillie	52	Vice President
J. M. Barendt	39	Vice President
J. A. Bigler	49	Vice President
D. H. Cuozzo	65	Vice President and Secretary
B. V. DeMaria	51	Vice President
J. E. Herald	57	Vice President - Finance (Chief Financial Officer)
W. M. Lambert	40	Vice President
G. R. McGee	58	Vice President
G. W. Steggles	64	Senior Vice President
D. L. Zeitler	50	Vice President and Treasurer

All the executive officers have been employed by the registrant since prior to January 1, 1994 and have held their present positions since prior to that date except as follows:

(a) Mr. Hotopp was elected President on December 18, 1996. Prior to that time, he was Senior Vice President and General Manager, Safety Products.

(b) Mr. Baillie was employed by the registrant on January 21, 1999 and was elected Vice President. From prior to January 1, 1994 until October 8, 1996, he was Vice President, Europe of Teledyne Industries International. Until November 1, 1997, he was Executive Vice President of Sylvania Lighting International.

(c) Mr. Barendt was elected Vice President on January 9, 1998. From prior to January 1, 1994 until April 1996, he was Manager, Research and Development at the Company's Callery Chemical Division. From April 1996 until December 1996, he was Acting General Manager of Callery Chemical Division. From December 1996, he was General Manager of the Callery Chemical Division.

(d) Mr. Bigler was elected Vice President on January 9, 1998. From prior to January 1, 1994 until April 1995, he was National Sales Manager. From April 1995 he was Director of Sales.

(e) Mr. Cuozzo was elected Vice President on April 27, 1995. Prior to that time, he was Secretary.

(f) Mr. DeMaria was elected Vice President on January 9, 1998. From prior to January 1, 1994 until September 1994, he was Manager, Employee Benefits. From September 1994 he was Director, Human Resources.

(g) Mr. Lambert was elected Vice President on January 9, 1998. From prior to January 1, 1994 until March 1995, he was a Senior Product Line Manager. From March 1995 until August 1996, he was Marketing Manager. From August 1996 until December 1996, he was Director of Marketing. From December 1996 he was General Manager of the Safety Products Division.

(h) Mr. McGee was employed by the registrant on January 2, 1997 and was elected Vice President and General Manager, Instrument Division. From prior to January 1, 1994 until July 1996, Mr. McGee was President and Chief Executive Officer of Balzer High Vacuum Products. From July 1996 until he joined the registrant, he was President and Chief Executive Officer of Pfeiffer Vacuum Technology, Inc., which is a spinoff of Balzer High Vacuum Products.

(i) Mr. Steggles was elected Senior Vice President on January 1,1999. Prior to that time he was Vice President.

(j) Mr. Zeitler was elected Vice President on January 9, 1998. Prior to that time, he was Treasurer.

The executive officers of the registrant serve at the pleasure of the Board of Directors and are not elected to any specified term of office.

The primary responsibilities of these officers follow:

Individual	Responsibilities
Mr. Hotopp	U. S. operations
Mr. Baillie	European operations
Mr. Barendt	Research, product development, manufacturing and marketing of specialty chemical products
Mr. Bigler	U.S. sales and distribution
Mr. Cuozzo	General Counsel and corporate taxes
Mr. DeMaria	Human resources and corporate communications
Mr. Lambert	Research, product development, manufacturing and marketing of safety products in the U.S.
Mr. McGee	Research, product development, manufacturing and marketing of instrument and battery products in the U.S.
Mr. Steggles	International operations outside the U.S. and Europe
Mr. Zeitler	Treasury and risk insurance management

Item 2. Properties

World Headquarters:

The registrant's executive offices are located at 121 Gamma Drive, RIDC Industrial Park, O'Hara Township, Pittsburgh, Pennsylvania 15238. This facility contains approximately 138,000 sq. ft.

Production and Research Facilities:

The registrant's principal U.S. manufacturing and research facilities are located in the Greater Pittsburgh area in buildings containing approximately 968,000 square feet. Other U.S. manufacturing and research facilities of the registrant are located in Jacksonville, North Carolina (107,000 sq. ft.), Sparks, Maryland (43,000 sq. ft.), Lawrence, Massachusetts (51,000 sq. ft.), and Englewood, Colorado (41,000 sq. ft.).

Manufacturing facilities of the European operating segment of the registrant are located in France, Germany, Italy, Scotland, Spain, and Sweden. The most significant are located in Germany (approximately 431,000 sq. ft., excluding 127,000 sq. ft. leased to others),and in Glasgow, Scotland (approximately 131,000 sq. ft., excluding 10,000 sq. ft. leased to others); research activities are also conducted at these facilities. Manufacturing facilities for the Other non-U.S. operating segment are located in Australia, Brazil, Canada, China, Japan, Mexico and Peru.

Virtually all of these buildings are owned by the registrant and its affiliates and are constructed of granite, brick, concrete block, steel or other fire-resistant materials. The German facility is owned subject to encumbrances securing indebtedness in the aggregate amount of $1,241,000 as of December 31, 1998.

Sales Offices and Warehouses:

Sales offices and distribution warehouses are owned or leased in or near principal cities in the United States and 27 other countries in which the registrant's affiliates are located.

Item 3. Legal Proceedings

Not Applicable.

Item 4. Submission of Matters to a Vote of Security Holders

No matters were submitted to a vote of security holders during fourth quarter 1998.

PART II

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

Item 6. Selected Financial Data

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

Item 8. Financial Statements and Supplementary Data

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Incorporated by reference herein pursuant to Rule 12b - 23 are

Item 5 - "Common Stock" appearing at page 15

Item 6 - "Five-Year Summary of Selected Financial Data" appearing at page 27

Item 7 - "Management's Discussion and Analysis" appearing at pages 12 to 15

Item 8 - "Financial Statements and Notes to Consolidated Financial Statements" appearing at pages 16 to 26

of the Annual Report to Shareholders for the year ended December 31, 1998. Said pages of the Annual Report are submitted with this report and pursuant to Item 601(b)(13) of Regulation S-K shall be deemed filed with the Commission only to the extent that material contained therein is expressly incorporated by reference in Items 1, 5, 6, 7, 8 and 14 (a) hereof.

Item 7a. Quantitative and qualitative disclosures about market risk
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Incorporated by reference to "Financial Instrument Market Risk" appearing on page 14 of the Annual Report to the Shareholders for the year ended December 31, 1998.

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

Not applicable.

PART III

Item 10. Directors and Executive Officers of the Registrant
Item 11. Executive Compensation
Item 12. Security Ownership of Certain Beneficial Owners and Management
Item 13. Certain Relationships and Related Transactions

Incorporated by reference herein pursuant to Rule 12b - 23 are (1) "Election of Directors" appearing at pages 1 to 3, (2) "Other Information Concerning Directors and Officers" appearing at pages 4 to 9 (except as excluded below), and (3) "Stock Ownership" appearing at pages 11 to 13 of the Proxy Statement filed pursuant to Regulation 14A in connection with the registrant's Annual Meeting of Shareholders to be held on May 11, 1999. The information appearing in such Proxy Statement under the caption "Compensation Committee Report on Executive Compensation," and the other information appearing in such Proxy Statement and not specifically incorporated by reference herein, including without limitation the information under the caption "Comparison of Five-Year Cumulative Total Return" is not incorporated herein.

PART IV

Item 14. Exhibits, Financial Statement Schedules, and Reports on Form 8-K

(a) 1 and 2. Financial Statements

The following information appearing on pages 16 to 26 inclusive in the Annual Report to Shareholders of the registrant for the year ended December 31, 1998, is incorporated herein by reference pursuant to Rule 12b-23.

Report of Independent Accountants

Consolidated Balance Sheet - December 31, 1998 and 1997

Consolidated Statement of Income - three years ended December 31, 1998

Consolidated Statement of Changes in Retained Earnings and Accumulated

Other Comprehensive Income - three years ended December 31, 1998

Consolidated Statement of Cash Flows - three years ended December 31, 1998

Notes to Consolidated Financial Statements

Said pages of the Annual Report are submitted with this report and, pursuant to Item 601(b)(13) of Regulation S-K shall be deemed to be filed with the Commission only to the extent that material contained therein is expressly incorporated by reference in Items 1, 5, 6, 7, 8 and 14 (a)(1) and (2) hereof.

The following additional financial information for the three years ended December 31, 1998 is filed with the report and should be read in conjunction with the above financial statements:

Report of Independent Accountants on Financial Statement Schedule

Schedule II - Valuation and Qualifying Accounts

All other schedules are omitted because they are not applicable, not material or the required information is shown in the financial statements and notes to the financial statements listed above.

(a) 3. Exhibits

(3)(i) Restated Articles of Incorporation as amended to April 27, 1989, filed as Exhibit 3 to Form 10-Q on August 5, 1994, are incorporated herein by reference.

(3)(ii) By-laws of the registrant, as amended to August 29, 1990, filed as Exhibit 3 to Form 10-Q on November 13, 1995, are incorporated herein by reference.

(4) Rights Agreement dated as of February 10, 1997 between the registrant and Norwest Bank Minnesota, N.A., as Rights Agent, filed as Exhibit 1 to the registrant's Form 8-A on February 25, 1997, is incorporated herein by reference.

(10)(a) * 1987 Management Share Incentive Plan.

(10)(b) * 1998 Management Share Incentive Plan, incorporated herein by reference to Annex A to the registrant's Definitive Proxy Statement filed March 24, 1998 for its 1998 Annual Meeting.

(10)(c) * Retirement Plan for Directors, as amended and restated effective as of May 5, 1998, filed as Exhibit 10(f) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(d) * Supplemental Pension Plan as of May 5, 1998, filed as Exhibit 10(g) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(e) * 1990 Non-Employee Directors' Stock Option Plan as amended to May 5, 1998, filed as Exhibit 10(h) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(f) * Form of First Amendment dated June 2, 1998 to the Restricted Stock Agreements dated as of March 15, 1996, under the 1987 Management Share Incentive Plan, filed as Exhibit (10(i) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(g) * Executive Insurance Program as Amended and Restated as of May 5, 1998, filed as Exhibit 10(j) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(h) * Annual Incentive Bonus Plan as of May 5, 1998, filed as Exhibit 10(k) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(i) * Form of Severance Agreement as of May 20, 1998 between the registrant and George R. McGee, filed as Exhibit 10(l) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(j) * Form of Severance Agreement as of May 20, 1998 between the registrant and John T. Ryan III, filed as Exhibit 10(m) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(k) * Form of Severance Agreement as of May 20, 1998 between the registrant and the other executive officers except Mr. Baillie, filed as Exhibit 10(n) to Form 10-Q on August 14, 1998, is incorporated herein by reference.

(10)(l) * First Amendment to the 1998 Management Share Incentive Plan as of March 10, 1999.

(10)(m) Trust Agreement as of June 1, 1996 between the registrant and PNC Bank, N.A. re the Mine Safety Appliances Company Stock Compensation Trust, filed as Exhibit 10(f) to Form 10-K on March 26, 1997, is incorporated herein by reference.

* The exhibits marked by an asterisk are management contracts or compensatory plans or arrangements.

(13) Annual Report to Shareholders for year ended December 31, 1998

(21) Affiliates of the registrant

(23) Consent of PricewaterhouseCoopers LLP, independent accountants

(27) Financial Data Schedule (filed in electronic format only)

The registrant agrees to furnish to the Commission upon request copies of all instruments with respect to long-term debt referred to in Note 6 of the Notes to Consolidated Financial Statements filed as part of Exhibit 13 to this annual report which have not been previously filed or are not filed herewith.

(b) Reports on Form 8-K

No reports on Form 8-K were filed during the last quarter of the year ended December 31, 1998.

REPORT OF INDEPENDENT ACCOUNTANTS ON FINANCIAL STATEMENT SCHEDULE

February 19, 1999

To the Board of Directors of
Mine Safety Appliances Company

Our audits of the consolidated financial statements referred to in our report dated February 19, 1999, appearing on page 16 of the 1998 Annual Report to Shareholders of Mine Safety Appliances Company (which report and consolidated financial statements are incorporated by reference in this Annual Report on Form 10-K), also included an audit of the Financial Statement Schedule listed in Item 14(a) of this Form 10-K. In our opinion, this Financial Statement Schedule presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements.

PRICEWATERHOUSECOOPERS LLP

SCHEDULE II

MINE SAFETY APPLIANCES COMPANY AND AFFILIATES
VALUATION AND QUALIFYING ACCOUNTS
THREE YEARS ENDED DECEMBER 31, 1998
(IN THOUSANDS)

	1998	1997	1996
Allowance for doubtful accounts:			
Balance at beginning of year	$3,704	$2,993	$2,640
Additions -			
Charged to costs and expenses	588	1,229	812
Balance from acquisitions	45	288	
Deductions -			
Deductions from reserves (1)	1,135	806	459
Reduction from divestitures	198		
Balance at end of year	$3,004	$3,704	$2,993

(1) Bad debts written off, net of recoveries.

SIGNATURES

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

MINE SAFETY APPLIANCES COMPANY

March 26, 1999	By S/John T. Ryan III
(Date)	John T. Ryan III Chairman of the Board and Chief Executive Officer

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

Signature	Title	Date
/S/John T. Ryan III John T. Ryan III	Director; Chairman of the Board and Chief Executive Officer	March 26, 1999
/S/James E. Herald James E. Herald	Vice President - Finance; Principal Financial and Accounting Officer	March 26, 1999
/S/Joseph L. Calihan Joseph L. Calihan	Director	March 26, 1999
/S/Calvin A. Campbell, Jr. Calvin A. Campbell, Jr.	Director	March 26, 1999
/S/G. Donald Gerlach G. Donald Gerlach	Director	March 26, 1999
/S/Helen Lee Henderson Helen Lee Henderson	Director	March 26, 1999
/S/Thomas B. Hotopp Thomas B. Hotopp	Director	March 26, 1999
/S/L. Edward Shaw, Jr. L. Edward Shaw, Jr.	Director	March 26, 1999
/S/Thomas H. Witmer Thomas H. Witmer	Director	March 26, 1999

EXHIBIT (10)(a)

MINE SAFETY APPLIANCES COMPANY

1987 MANAGEMENT SHARE INCENTIVE PLAN

The purposes of the 1987 Management Share Incentive Plan (the "Plan") are to encourage eligible employees of Mine Safety Appliances Company (the "Company") and its Subsidiaries, including Directors and officers of the Company and each Subsidiary who are employees, to increase their efforts to make the Company and each Subsidiary more successful, to provide an additional inducement for such employees to remain with the Company or a Subsidiary, to reward such employees by providing an opportunity to acquire shares of the Common Stock, without par value, of the Company (the "Common Stock") on favorable terms and to provide a means through which the Company may attract able persons to enter the employ of the Company or one of its Subsidiaries. For the purposes of the Plan, the term "Subsidiary" means any corporation in an unbroken chain of corporations beginning with the Company if each of the corporations other than the last corporation in the unbroken chain owns stock possessing at least fifty percent (50%) or more of the total combined voting power of all classes of stock in one of the other corporations in the chain.

SECTION 1

ADMINISTRATION

The Plan shall be administered by a Committee (the "Committee") appointed by the Board of Directors of the Company (the "Board") and consisting of not less than three members of the Board, none of whom is eligible or was within one year prior to becoming a member of the Committee eligible for selection as a person to whom stock may be allocated or to whom stock options, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights or limited cash payment rights may be granted or restricted stock may be awarded pursuant to the Plan or any other plan of the Company or any of its affiliates (as "affiliates" is defined in regulations of the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended (the "1934 Act")) entitling the participants therein to acquire stock, stock options, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights, limited cash payment rights or restricted stock of the Company or any of its affiliates.

The Committee shall interpret the Plan and prescribe such rules, regulations and procedures in connection with the operations of the Plan as it shall deem to be necessary and advisable for the administration of the Plan consistent with the purposes of the Plan.

The Committee shall keep records of action taken at its meetings. A majority of the Committee shall constitute a quorum at any meeting and the acts of a majority of the members present at any meeting at which a quorum is present, or acts approved in writing by a majority of the Committee, shall be the acts of the Committee.

SECTION 2

ELIGIBILITY

Those employees of the Company or any Subsidiary who share responsibility for the management, growth or protection of the business of the Company or any Subsidiary shall be eligible to be granted stock options (with or without alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights) and receive restricted stock awards as described herein.

Subject to the provisions of the Plan, the Committee shall have full and final authority, in its discretion, to grant stock options (with or without alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights) and to award restricted stock as described herein and to determine the employees to whom stock options (with or without alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights) shall be granted and restricted stock shall be awarded and the number of shares to be covered by each stock option or restricted stock award. In determining the eligibility of any employee, as well as in determining the number of shares covered by each stock option or restricted stock award, and whether alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights shall be granted in conjunction with a stock option, the Committee shall consider the position and the responsibilities of the employee being considered, the nature and value to the Company or a Subsidiary of his or her services, his or her present and/or potential contribution to the success of the Company or a Subsidiary and such other factors as the Committee may deem relevant.

SECTION 3

SHARES AVAILABLE UNDER THE PLAN

The aggregate number of shares of the Common Stock which may be issued or delivered and as to which grants of stock options and restricted stock awards may be made under the Plan is 400,000 shares, subject to adjustment and substitution as set forth in Section 7. If any stock option granted under the Plan is cancelled by mutual consent or terminates or expires for any reason without having been exercised in full, the number of shares subject to such stock option shall again be available for purposes of the Plan; however, solely for the purpose of determining the number of shares of the Common Stock as to which stock options may be granted under the Plan, to the extent that stock appreciation rights, limited stock appreciation rights or limited cash payment rights granted in conjunction with a stock option are exercised and the stock option surrendered unexercised, such stock option shall be deemed to have been exercised instead and the shares of the Common Stock which otherwise would have been issued or delivered upon the exercise of such stock option shall not again be available for the grant of any other stock option or the award of any restricted stock under the Plan. If any shares of the Common Stock are forfeited to the Company pursuant to the restrictions applicable to restricted stock awarded under the Plan, the number of shares so forfeited shall again be available for purposes of the Plan. The shares which may be issued or delivered under the Plan may be either authorized but unissued shares or treasury shares or partly each, as shall be determined from time to time by the Board.

SECTION 4

GRANT OF STOCK OPTIONS, ALTERNATIVE STOCK APPRECIATION RIGHTS, CASH PAYMENT RIGHTS, LIMITED STOCK APPRECIATION RIGHTS, AND LIMITED CASH PAYMENT RIGHTS AND AWARDS OF RESTRICTED STOCK

The Committee shall have authority, in its discretion, (a) to grant "incentive stock options" pursuant to Section 422A of the Internal Revenue Code of 1986 (the "Code"), to grant "nonstatutory stock options" (i.e., stock options which do not qualify under such Section 422A of the Code) or to grant both types of stock options (but not in tandem) and (b) to award restricted stock. The Committee also shall have the authority, in its discretion, to grant alternative stock appreciation rights in conjunction with incentive stock options or nonstatutory stock options with the effect provided in Section 5(D), to grant cash payment rights in conjunction with nonstatutory stock options with the effect provided in Section 5(E), to grant limited stock appreciation rights in conjunction with incentive stock options or nonstatutory stock options with the effect provided in Section 8(D) and to grant limited cash payment rights in conjunction with nonstatutory stock options with effect provided in Section 8(E). Alternative stock appreciation rights and limited stock appreciation rights granted in conjunction with an incentive stock option may only be granted at the time the incentive stock option is granted. Cash payment rights and limited cash payment rights may not be granted in conjunction with incentive stock options. Alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights granted in conjunction with a nonstatutory stock option may be granted either at the time the stock option is granted or at any time thereafter during the term of the stock option.

No employee shall be granted a stock option or stock options or awarded restricted stock under the Plan (disregarding cancelled, terminated or expired stock options of forfeited restricted stock) for an aggregate number of shares in excess of ten percent (10%) of the total number of shares which may be issued or delivered under the Plan. For the purposes of this limitation, any adjustment or substitution made pursuant to Section 7 with respect to shares which have not been issued or delivered under the Plan shall also be made with respect to shares already issued or delivered under the Plan, upon the exercise of stock options or an award of restricted stock and with respect to shares which would have been issued or delivered under the Plan but for the exercise of alternative stock appreciation rights, limited stock appreciation rights or limited cash payment rights in lieu of the exercise of stock options prior to such adjustment or substitution.

Notwithstanding any other provision contained in the Plan or in any stock option agreement, but subject to the possible exercise of the Committee's discretion contemplated in the last sentence of this Section 4, for incentive stock options granted after December 31, 1986, as required by Section 422A(b)(7) of the Code as enacted by the Tax Reform Act of 1986, the aggregate fair market value, determined as provided in Section 5(I) on the date of grant of such incentive stock options, of the shares with respect to which such incentive stock options are exercisable for the first time by an employee during any calendar year under all plans of the corporation employing such employee, any parent or subsidiary corporation of such corporation and any predecessor corporation of any such corporation shall not exceed $100,000. If the date on which one or more of such incentive stock options could first be exercised would be accelerated pursuant to any provision of the Plan or any stock option agreement or an amendment thereto, and the acceleration of such exercise date would result in a violation of the restriction required by Section 422A(b)(7) of the Code set forth in the preceding sentence, then, notwithstanding any such provision, but subject to the provisions of the next succeeding sentence, the exercise date of such incentive stock options shall be accelerated only to the extent, if any, that does not result in a violation of such restriction and, in such event, the exercise date of the incentive stock options with the lowest option price shall be accelerated first. If legislation is enacted modifying or removing the $100,000 restriction required by Section 422A(b)(7) of the Code as enacted by the Tax Reform Act of 1986, as of the effective date of such legislation the Committee may in its discretion modify or waive the $100,000 restriction set forth above for incentive stock options granted (and to be granted) after December 31, 1986 and authorize the acceleration, if any, of the exercise date of incentive stock options up to the maximum extent permitted by such legislation (even if such incentive stock options are converted in part to nonstatutory stock options).

SECTION 5

TERMS AND CONDITIONS OF STOCK OPTIONS, ALTERNATIVE STOCK APPRECIATION RIGHTS AND CASH PAYMENT RIGHTS

Stock options, alternative stock appreciation rights and cash payment rights granted under the Plan shall be subject to the following terms and conditions:

(A) The purchase price at which each stock option may be exercised (the "option price") shall be such price as the Committee, in its discretion, shall determine but shall not be less than one hundred percent (100%) of the fair market value per share of the Common Stock covered by the stock option on the date of grant, except that in the case of an incentive stock option granted to an employee who, immediately prior to such grant, owns stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Subsidiary (a "Ten Percent Employee"), the option price shall not be less than one hundred ten percent (110%) of such fair market value on the date of grant. For purposes of this Section 5(A), the fair market value of the Common Stock shall be determined as provided in Section 5(I). For purposes of this Section 5(A), an individual (i) shall be considered as owning not only shares of stock owned individually but also all shares of stock that are at the time owned, directly or indirectly, by or for the spouse, ancestors, lineal descendants and brothers and sisters (whether by the whole or half blood) of such individual and (ii) shall be considered as owning proportionately any shares owned, directly or indirectly, by or for any corporation, partnership, estate or trust in which such individual is a shareholder, partner or beneficiary.

(B) The option price for each stock option shall be paid in full upon exercise and shall be payable in cash in United States dollars (including check, bank draft or money order); provided, however, that in lieu of such cash the person exercising the stock option may (if authorized by the

Committee at the time of grant in the case of an incentive stock option, or at any time in the case of a nonstatutory stock option) pay the option price in whole or in part by delivering to the Company shares of the Common Stock having a fair market value on the date of exercise of the stock option, determined as provided in Section 5(I), equal to the option price for the shares being purchased; except that (i) any portion of the option price representing a fraction of a share shall in any event be paid in cash and (ii) no shares of the Common Stock which have been held for less than one year may be delivered in payment of the option price of a stock option. The date of exercise of a stock option shall be determined under procedures established by the Committee, and as of the date of exercise the person exercising the stock option shall be considered for all purposes to be the owner of the shares with respect to which the stock option has been exercised. Payment of the option price with shares shall not increase the number of shares of the Common Stock which may be issued or delivered under the Plan as provided in Section 3.

(C) No stock option shall be exercisable by an optionee during employment during the first six months of its term, except that this limitation on exercise shall not apply if Section 8(B) becomes applicable. No incentive stock option shall be exercisable after the expiration of ten years (five years in the case of a Ten Percent Employee) from the date of grant. No nonstatutory stock option shall be exercisable after the expiration of ten years and six months from the date of grant. A stock option to the extent exercisable at any time may be exercised in whole or in part.

(D) Except as provided in the last sentence of the next to last paragraph of Section 8(D), alternative stock appreciation rights granted in conjunction with a stock option may only be exercised when and to the extent the stock option may be exercised and only by the same person who is entitled to exercise the stock option except that alternative stock appreciation rights granted in conjunction with an incentive stock option shall not be exercisable unless the fair market value of the Common Stock on the date of exercise exceeds the option price of the shares subject to the incentive stock option. Alternative stock appreciation rights entitle such person to exercise the alternative stock appreciation rights by surrendering the stock option, or any portion thereof, unexercised and to receive from the Company in exchange therefor that number of shares of the Common Stock having an aggregate fair market value on the date of exercise of the alternative stock appreciation rights equal to the excess of the fair market value of one share of the Common Stock on such date of exercise over the option price per share times the number of shares covered by the stock option, or portion thereof, which is surrendered, except that cash shall be paid by the Company in lieu of a fraction of a share. To the extent that alternative stock appreciation rights are exercised, the stock option, or portion thereof, which is surrendered unexercised and any limited stock appreciation rights or limited cash payment rights granted in conjunction with such stock option, or portion thereof, shall automatically terminate. The Committee shall have the authority, in its discretion, to determine whether the obligation of the Company shall be paid in cash or partly in cash and partly in shares, except that the Company shall not pay to any person who is subject to the provisions of Section 16(b) of the 1934 Act at the time of exercise of alternative stock appreciation rights any portion of the obligation of the Company in cash (except cash in lieu of a fraction of a share) unless and until at least six months have elapsed from the date of grant of the alternative stock appreciation rights and unless such alternative stock appreciation rights are exercised during the period beginning on the third and ending on the twelfth business day following the date of release for publication of the quarterly or annual summary statements of sales and earnings of the Company. The date of exercise of alternative stock appreciation rights shall be determined under procedures established by the Committee, and payment under this Section 5(D) shall be made by the Company as soon as practicable after the date of exercise. As of the date of exercise, the person exercising the alternative stock appreciation rights shall be considered for all purposes to be the owner of any shares which are to be issued or delivered upon the exercise of the alternative stock appreciation rights. To the extent that the stock option in conjunction with which alternative stock appreciation rights have been granted is exercised, cancelled, terminates or expires, the alternative stock appreciation rights shall be cancelled. For the purposes of this Section 5(D), the fair market value of the Common Stock shall be determined as provided in Section 5(I).

(E) Cash payment rights granted in conjunction with a nonstatutory stock option shall entitle the person who is entitled to exercise the stock option upon exercise of the stock option, or any portion thereof, to receive cash from the Company (in addition to the shares to be received upon exercise of the stock option) equal to such percentage as the Committee, in its discretion, shall determine not greater than one hundred percent (100%) of the excess of the fair market value of a share of the Common Stock on the date of exercise of the stock option (or on the alternative date provided for in the following sentence) over the option price per share of the stock option times the number of shares covered by the stock option, or portion thereof, which is exercised. If any such person is subject to the provisions of Section 16(b) of the 1934 Act at the time of exercise of the stock option, the amount of such cash payment shall be determined as of an alternative date which shall be the day on which the restrictions imposed by Section 16(b) of the 1934 Act no longer apply for purposes of Section 83 of the Code. Payment of the cash provided for in this Section 5(E) shall be made by the Company as soon as practicable after the time the amount payable is determined. For purposes of this Section 5(E), the fair market value of the Common Stock shall be determined as provided in Section 5(I).

(F) No stock option shall be transferable by an optionee otherwise than by Will, or if an optionee dies intestate, by the laws of descent and distribution of the state of domicile of the optionee at the time of death. All stock options shall be exercisable during the lifetime of an optionee only by the optionee.

(G) Subject to the provisions of Section 4 in the case of incentive stock options, unless the Committee, in its discretion, shall otherwise determine:

(i) If the employment of an optionee who is not disabled within the meaning of Section 422A(c)(7) of the Code (a "Disabled Optionee") is voluntarily terminated with the consent of the Company or a Subsidiary or an optionee retires under any retirement plan of the Company or a Subsidiary, any then outstanding incentive stock option held by such an optionee shall be exercisable by the optionee (but only to the extent exercisable by the optionee immediately prior to the termination of employment) at any time prior to the expiration date of such incentive stock option or within three months after the date of termination of employment, whichever is the shorter period;

(ii) If the employment of an optionee who is not a Disabled Optionee is voluntarily terminated with the consent of the Company or a Subsidiary or an optionee retires under any retirement plan of the Company or a Subsidiary, any then outstanding nonstatutory stock option held by such an optionee shall be exercisable by the optionee (but only to the extent exercisable by the optionee immediately prior to the termination of employment) at any time prior to the expiration date of such nonstatutory stock option or within one year after the date of termination of employment, whichever is the shorter period;

(iii) If the employment of an optionee who is a Disabled Optionee is voluntarily terminated with the consent of the Company or a Subsidiary, any then outstanding stock option held by such an optionee shall be exercisable by the optionee in full (whether or not so exercisable by the optionee immediately prior to the termination of employment) by the optionee at any time prior to the expiration date of such stock option or within one year after the date of termination of employment, whichever is the shorter period;

(iv) Following the death of an optionee during employment, any outstanding stock option held by the optionee at the time of death shall be exercisable in full (whether or not so exercisable by the optionee immediately prior to the death of the optionee) by the person entitled to do so under the Will of the optionee, or, if the optionee shall fail to make testamentary disposition of the stock option or shall die intestate, by the legal representative of the optionee at any time prior to the expiration date of such stock option or within one year after the date of death, whichever is the shorter period;

(v) Following the death of an optionee after termination of employment during a period when a stock option is exercisable, any outstanding stock option held by the optionee at the time of death shall be exercisable by such person entitled to do so under the Will of the optionee or by such legal representative (but only to the extent the stock option was exercisable by the optionee immediately prior to the death of the optionee) at any time prior to the expiration date of such stock option or within one year after the date of death, whichever is the shorter period; and

(vi) Unless the exercise period of a stock option following termination of employment has been extended as provided in Section 8(C), if the employment of an optionee terminates for any reason other than voluntary termination with the consent of the Company or a Subsidiary, retirement under any retirement plan of the Company or a Subsidiary or death, all outstanding stock options held by the optionee at the time of such termination of employment shall automatically terminate.

Whether termination of employment is a voluntary termination with the consent of the Company or a Subsidiary and whether an optionee is a Disabled Optionee shall be determined in each case, in its discretion, by the Committee and any such determination by the Committee shall be final and binding.

If an optionee engages in the operation or management of a business (whether as owner, partner, officer, director, employee or otherwise and whether during or after termination of employment) which is in competition with the Company or any of its Subsidiaries, the Committee may immediately terminate all outstanding stock options held by the optionee; provided, however,that this sentence shall not apply if the exercise period of a stock option following termination of employment has been extended as provided in Section 8(C). Whether an optionee has engaged in the operation or management of a business which is in competition with the Company or any of its Subsidiaries shall also be determined, in its discretion, by the Committee, and any such determination by the Committee shall be final and binding.

(H) All stock options, alternative stock appreciation rights and cash payment rights shall be confirmed by a stock option agreement, or an amendment thereto, which shall be executed on behalf of the Company by the Chief Executive Officer (if other than the President), the President or any Vice President and by the optionee.

(I) Fair market value of the Common Stock shall be the mean between the following prices, as applicable, for the date as of which fair market value is to be determined as quoted in The Wall Street Journal (or in such other reliable publication as the Committee, in its discretion, may determine to rely upon): (a) if the Common Stock is listed on the New York Stock Exchange, the highest and lowest sales prices per share of the Common Stock as quoted in the NYSE-Composite Transactions listing for such date, (b) if the Common Stock is not listed on such exchange, the highest and lowest sales prices per share of Common Stock for such date on (or on any composite index including) the principal United States securities exchange registered under the 1934 Act on which the Common Stock is listed, or (c) if the Common Stock is not listed on any such exchange, the highest and lowest sales prices per share of the Common Stock for such date on the National Association of Securities Dealers Automated Quotations System or any successor system then in use ("NASDAQ"). If there are no such sale price quotations for the date as of which fair market value is to be determined but there are sale price quotations within a reasonable period both before and after such date, then fair market value shall be determined by taking a weighted average of the means between the highest and lowest sales prices per share of the Common Stock as so quoted on the nearest date before and the nearest date after the date as of which fair market value is to be determined. The average should be weighted inversely by the respective numbers of trading days between the selling dates and the date as of which fair market value is to be determined. If there are no sale price quotations on or within a reasonable period both before and after the date as of which fair market value is to be determined, then fair market value of the Common Stock shall be the mean between the bona fide bid and asked prices per share of Common Stock as quoted for such date on NASDAQ, or if none, the weighted average of the means between the bona fide bid and asked prices on the nearest trading date before and the nearest trading date after the date as of which fair market value is to be determined, if both such dates are within a reasonable period. The average is to be determined in the manner described above in this Section 5(I). If the fair market value of the Common Stock cannot be determined on the basis previously set forth in this Section 5(I) on the date as of which fair market value is to be determined, the Committee shall in good faith determine the fair market value of the Common Stock on such date. Fair market value shall be determined without regard to any restriction other than a restriction which, by its terms will never lapse.

(J) The obligation of the Company to issue or deliver shares of the Common Stock under the Plan shall be subject to (i) the effectiveness of a registration statement under the Securities Act of 1933, as amended, with respect to such shares, if deemed necessary or appropriate by counsel for the Company, (ii) the condition that the shares shall have been listed (or authorized for listing upon official notice of issuance) upon each stock exchange, if any, on which such shares may then be listed and (iii) all other applicable laws, regulations, rules and orders which may then be in effect.

Subject to the foregoing provisions of this Section and the other provisions of the Plan, any stock option or alternative stock appreciation rights granted under the Plan may be exercised at such times and in such amounts and be subject to such restrictions and other terms and conditions, if any, as shall be determined, in its discretion, by the Committee and set forth in the stock option agreement referred to in Section 5(H), or an amendment thereto.

SECTION 6

TERMS AND CONDITIONS OF RESTRICTED STOCK AWARDS

Restricted stock awards shall be evidenced by a written restricted stock agreement in the form prescribed by the Committee in its discretion, which shall set forth the number of shares of the Common Stock awarded, the restrictions imposed thereon (including, without limitation, restrictions on the right of the grantee to sell, assign, transfer or encumber such shares while such shares are subject to other restrictions imposed under this Section 6), the duration of such restrictions, events the occurrence of which would cause a forfeiture of the restricted stock and such other terms and conditions as the Committee in its discretion deems appropriate. Restricted stock awards shall be effective only upon execution of the applicable restricted stock agreement on behalf of the Company by the Chief Executive Officer (if other than the President), the President or any Vice President, and by the grantee.

Following a restricted stock award and prior to the lapse or termination of the applicable restrictions, the Committee shall deposit share certificates for such restricted stock in escrow. Upon the lapse or termination of the applicable restrictions (and not before such time), the grantee shall be issued or transferred share certificates for such restricted stock. From the date a restricted stock award is effective, the grantee shall be a shareholder with respect to all the shares represented by such certificates and shall have all the rights of a shareholder with respect to all such shares, including the right to vote such shares and to receive all dividends and other distributions paid with respect to such shares, subject only to the restrictions imposed by the Committee.

SECTION 7

ADJUSTMENT AND SUBSTITUTION OF SHARES

If a dividend or other distribution shall be declared upon the Common Stock payable in shares of the Common Stock, the number of shares of the Common Stock then subject to any outstanding stock option or restricted stock award and the number of shares of the Common Stock which may be issued or delivered under the Plan but are not then subject to an outstanding stock option or restricted stock award shall be adjusted by adding thereto the number of shares of the Common Stock which would have been distributable thereon if such shares had been outstanding on the date fixed for determining the shareholders entitled to receive such stock dividend or distribution.

If the outstanding shares of the Common Stock shall be changed into or exchangeable for a different number or kind of shares of stock or other securities of the Company or another corporation, whether through reorganization, reclassification, recapitalization, stock split-up, combination of shares, merger or consolidation, then there shall be substituted for each share of the Common Stock subject to any then outstanding stock option or restricted stock award, and for each share of the

Common Stock which may be issued or delivered under the Plan but which is not then subject to an outstanding stock option or restricted stock award, the number and kind of shares of stock or other securities into which each outstanding share of the Common Stock shall be so changed or for which each such share shall be exchangeable.

In case of any adjustment or substitution as provided for in this Section 7, the aggregate option price for all shares subject to each then outstanding stock option prior to such adjustment or substitution shall be the aggregate option price for all shares of stock or other securities (including any fraction) to which such shares shall have been adjusted or which shall have been substituted for such shares. Any new option price per share shall be carried to at least three decimal places with the last decimal place rounded upwards to the nearest whole number.

No adjustment or substitution provided for in this Section 7 shall require the Company to issue or sell a fraction of a share or other security. Accordingly, all fractional shares or other securities which result from any such adjustment or substitution shall be eliminated and not carried forward to any subsequent adjustment or substitution. Owners of restricted stock shall be treated in the same manner as the Company treats owners of its Common Stock with respect to fractional shares created by an adjustment or substitution of shares, except that any property or cash paid in lieu of a fractional share shall be subject to restrictions similar to those applicable to the restricted stock exchange therefor.

If any such adjustment or substitution provided for in this Section 7 requires the approval of shareholders in order to enable the Company to grant incentive stock options, then no such adjustment or substitution shall be made without the required shareholder approval. Notwithstanding the foregoing, in the case of incentive stock options, if the effect of any such adjustment or substitution would be to cause the stock option to fail to continue to qualify as an incentive stock option or to cause a modification, extension or renewal of such stock option within the meaning of Section 425 of the Code, the Committee may elect that such adjustment or substitution not be made but rather shall use reasonable efforts to effect such other adjustment of each then outstanding stock option as the Committee, in its discretion, shall deem equitable and which will not result in any disqualification, modification, extension or renewal (within the meaning of Section 425 of the Code) of such incentive stock option.

SECTION 8

ADDITIONAL RIGHTS IN CERTAIN EVENTS

(A) DEFINITIONS

For purposes of this Section 8, the following terms shall have the following meanings:

(1) "Affiliate," "Associate" and "Parent" shall have the respective meanings set forth in Rule 12b-2 under the 1934 Act as in effect on the effective date of the Plan.

(2) The term "Person" shall be used as that term is used in Sections 13(d) and 14(d) of the 1934 Act.

(3) Beneficial Ownership shall be determined as provided in Rule 13d-3 under the 1934 Act as in effect on the effective date of the Plan.

(4) Voting Shares" shall mean all securities of a company entitling the holders thereof to vote in an annual election of Directors (without consideration of the rights of any class of stock other than the Common Stock to elect Directors by a separate class vote); and a specified percentage of "Voting Power" of a company shall mean such number of the Voting Shares as shall enable the holders thereof to cast such percentage of all the votes which could be cast in an annual election of directors (without consideration of the rights of any class of stock other than the Common Stock to elect Directors by a separate class vote).

(5) "Tender Offer" shall mean a tender offer or exchange offer to acquire securities of the Company (other than such an offer made by the Company or any Subsidiary), whether or not such offer is approved or opposed by the Board.

(6) "Section 8 Event" shall mean the date upon which any of the following events occurs:

(a) The Company acquires actual knowledge that any Person [other than the Company, a Subsidiary, any Director of the Company on the effective date of the Plan, any Affiliate or Associate of any such Director, any member of the family of any such Director, any trust (including the Trustees thereof), established by or for the benefit of any such persons, any charitable foundation, whether a trust or a corporation (including the trustees and directors thereof), established by any such persons or any employee benefit plan(s) sponsored by the Company] has acquired the Beneficial Ownership, directly or indirectly, of securities of the Company entitling such Person to 25% or more of the Voting Power of the Company [as used above, a member of the family of a Director shall include such Director's spouse and such Director's and such spouse's ancestors, lineal descendants, brothers and sisters (whether by the whole or half blood or by adoption), the lineal descendants of such brothers and sisters and spouses of any of the foregoing persons];

(b)(i) A Tender Offer is made to acquire securities of the Company entitling the holders thereof to 50% or more of the Voting Power of the Company; or (ii) Voting Shares are first purchased pursuant to any other Tender Offer;

(c) At any time less than 51% of the members of the Board of Directors shall be individuals who were either (i) Directors on the effective date of the Plan or (ii) individuals whose election, or nomination for election, was approved by a vote of at least two-thirds of the Directors then still in office who were Directors on the effective date of the Plan or who were so approved;

(d) The shareholders of the Company shall approve an agreement or plan (a "Reorganization Agreement") providing for the Company to be merged, consolidated or otherwise combined with, or for all or substantially all its assets or stock to be acquired by, another corporation, as a consequence of which the former shareholders of the Company will own, immediately after such merger, consolidation, combination or acquisition, less than a majority of the Voting Power of such surviving or acquiring corporation or the Parent thereof; or

(e) The shareholders of the Company shall approve any liquidation of all or substantially all of the assets of the Company or any distribution to security holders of assets of the Company having a value equal to 30% or more of the total value of all the assets of the Company.

(B) ACCELERATION OF THE EXERCISE DATE OF STOCK OPTIONS AND ALTERNATIVE STOCK APPRECIATION RIGHTS

Subject to the provisions of Section 4 in the case of incentive stock options, unless the stock option agreement referred to in Section 5(H), or an amendment thereto, shall otherwise provide, notwithstanding any other provision contained in the Plan, in case any "Section 8 Event" occurs (i) all outstanding stock options and alternative stock appreciation rights shall become immediately and fully exercisable whether or not otherwise exercisable by their terms, (ii) payment by the Company upon exercise of alternative stock appreciation rights held by a person who is subject to the provisions of Section 16(b) of the 1934 Act (which alternative stock appreciation rights have been held less than six months at the time of exercise following a Section 8 Event) shall be made by the Company in shares of Common Stock (except that cash may be paid in lieu of a fraction of a share) and (iii) payment by the Company upon exercise of alternative stock appreciation rights held by such a person (which alternative stock appreciation rights have been held at least six months on the date of exercise following a Section 8 Event) shall be made in cash if the date of exercise is within sixty (60) days following a Section 8 Event, whether or not the date of exercise is within one of the ten(10) day periods provided for in Section 5 (D).

(C) EXTENSION OF THE EXPIRATION DATE OF STOCK OPTIONS AND ALTERNATIVE STOCK APPRECIATION RIGHTS

Subject to the provisions of Section 4 in the case of incentive stock options, unless the stock option agreement referred to in Section 5(H), or an amendment thereto, shall otherwise provide, notwithstanding any other provision contained in the Plan, all stock options and alternative stock appreciation rights held by an optionee whose employment with the Company or a Subsidiary terminates within one year of any Section 8 Event for any reason other than voluntary termination with the consent of the Company or a Subsidiary, retirement under any retirement plan of the Company or a

Subsidiary or death shall be exercisable for a period of three months from the date of such termination of employment, but in no event after the expiration date of the stock option.

(D) LIMITED STOCK APPRECIATION RIGHTS

Limited stock appreciation rights granted in conjunction with a stock option shall be exercisable for a period of sixty (60) days following any Section 8 Event by the same person who is entitled to exercise the stock option and shall entitle such person to exercise the limited stock appreciation rights by surrendering the stock option, or any portion thereof, unexercised and to receive from the Company in exchange therefor cash in the amount provided for below in this Section8(D). To the extent that limited stock appreciation rights are exercised, the stock option, or portion thereof, which is surrendered unexercised and any alternative stock appreciation rights or limited cash payment rights granted in conjunction with such stock option, or portion thereof, shall automatically terminate.

Notwithstanding the foregoing, limited stock appreciation rights may not be exercised by a person who is subject to the provisions of Section 16(b) of the 1934 Act at the time of exercise of the limited stock appreciation rights unless and until at least six months have elapsed from the date of grant of the limited stock appreciation rights; provided, however, that if limited stock appreciation rights are granted in conjunction with a stock option as to which alternative stock appreciation rights have previously been granted, the limited stock appreciation rights shall be deemed to have been granted at the time of grant of such alternative stock appreciation rights. Limited stock appreciation rights granted in conjunction with an incentive stock option shall also not be exercisable unless the then fair market value of the Common Stock, determined as provided in Section 5(I), exceeds the option price of such incentive stock option and unless such incentive stock option is exercisable. Cash is payable to a person who is subject to the provisions of Section 16(b) of the 1934 Act at the time of exercise of limited stock appreciation rights whether or not the date of exercise is within one of the ten (10) day periods provided for in Section 5(D).

The person exercising limited stock appreciation rights granted in conjunction with a nonstatutory stock option shall receive cash in respect of each share of the Common Stock subject to the stock option, or portion thereof, which is surrendered unexercised in an amount equal to the excess of the fair market value of such share on the date of exercise over the option price of such stock option, and for this purpose fair market value shall mean the highest closing sale price of the Common Stock quoted by such reliable source as the Committee, in its discretion, may rely upon during the period beginning on the 90th day prior to the date on which the limited stock appreciation rights are exercised and ending on such date (or if no such sale price quotation is available, the highest mean between the bona fide bid and asked prices on any date during such period), except that (i) in the event any Person acquires Beneficial Ownership, directly or indirectly, of securities of the Company entitling such Person to 25% or more of the Voting Power of the Company within the meaning of Section 8(A)(6)(a), fair market value shall mean the greater of such closing sale price or the highest price per share paid for the Common Stock shown on the Statement on Schedule 13D, or any amendment thereto, filed by the Person acquiring such beneficial ownership, (ii) in the event of a Tender Offer, fair market value shall mean the greater of such closing sale price or the highest price paid for the Common Stock pursuant to any Tender Offer in effect at any time beginning on the 90th day prior to the date on which the limited stock appreciation rights are exercised and ending on such date and (iii) in the event of approval by the shareholders of the Company of a Reorganization Agreement, fair market value shall mean the greater of such closing sale price or the value of the consideration to be received by holders of the Common Stock pursuant to the Reorganization Agreement. In the event such value cannot be determined on the date of exercise of the limited stock appreciation rights, such value shall be determined by the Committee as promptly as practicable after such exercise and payment by the Company shall be made as promptly as practicable after such determination. Any non-cash consideration received by the holders of any shares of the Common Stock in one of the events referred to in clause (ii) or (iii) above shall be valued at the higher of (i) the valuation placed thereon by the Person making the Tender Offer or by the surviving or acquiring corporation or the Parent thereof and (ii) the valuation placed thereon by the Committee.

The person exercising limited stock appreciation rights granted in conjunction with an incentive stock option shall receive cash in respect of each share of the Common Stock subject to the stock option, or portion thereof, which is surrendered unexercised in an amount equal to the excess of the fair market value of such share on the date of exercise, determined as provided in Section 5(I), over the option price of such stock option.

The date of exercise of limited stock appreciation rights shall be determined under procedures established by the Committee, and payment under this Section 8(D) shall be made by the Company as soon as practicable after the date of exercise. To the extent that the stock option in conjunction with which the limited stock appreciation rights shall have been granted is exercised, cancelled, terminates or expires, the limited stock appreciation rights shall be cancelled. If limited stock appreciation rights are granted in conjunction with a stock option as to which alternative stock appreciation rights also have been granted, the alternative stock appreciation rights may not be exercised during any period during which the limited stock appreciation rights may be exercised.

All limited stock appreciation rights shall be confirmed by a stock option agreement, or an amendment thereto, which shall be executed on behalf of the Company by the Chief Executive Officer (if other than the President), the President or any Vice President and by the optionee. Subject to the foregoing provisions of this Section 8(D) and the other provisions of the Plan, limited stock appreciation rights granted under the Plan shall be subject to such other terms and conditions as shall be determined, in its discretion, by the Committee and set forth in the stock option agreement referred to in Section 5(H), or an amendment thereto.

(E) LIMITED CASH PAYMENT RIGHTS

Limited cash payment rights granted in conjunction with a nonstatutory stock option shall be exercisable for a period of sixty (60) days following any Section 8 Event by the person who is entitled to exercise the nonstatutory stock option and shall entitle such person to surrender the nonstatutory stock option, or any portion thereof, unexercised and to receive from the Company in exchange therefor cash in an amount equal to two (2) times the amount provided for in the third paragraph of Section 8(D) multiplied by such percentage not greater than 100% as the Committee, in its discretion, shall determine. For purposes of the third paragraph of Section 8(D), the words "limited cash payment rights" shall be deemed to be substituted for "limited stock appreciation rights." To the extent that limited cash payment rights are exercised, the nonstatutory stock option, or portion thereof, which is surrendered unexercised and any alternative stock appreciation rights or limited stock appreciation rights granted in conjunction with such stock option, or portion thereof, shall automatically terminate. Notwithstanding the foregoing, limited cash payment rights may not be exercised by a person who is subject to the provisions of Section 16(b) of the 1934 Act at the time of exercise unless and until at least six months have elapsed from the date of grant of the limited cash payment rights.

The date of exercise of limited cash payment rights shall be determined under procedures established by the Committee, and payment of the cash provided for in this Section 8(E) shall be made by the Company as soon as practicable after the date of exercise. To the extent that the nonstatutory stock option in respect of which limited cash payment rights shall have been granted is exercised, cancelled, terminates or expires, the limited cash payment rights shall be cancelled.

All limited cash payment rights shall be confirmed by a stock option agreement, or an amendment thereto, which shall be executed on behalf of the Company by the Chief Executive Officer (if other than the President), the President or any Vice President and by the optionee. Subject to the foregoing provisions of this Section 8(E) and the other provisions of the Plan, limited cash payment rights granted under the Plan shall be subject to such other terms and conditions as shall be determined, in its discretion, by the Committee and set forth in the stock option agreement referred to in Section 5(H), or an amendment thereto.

(F) LAPSE OF RESTRICTIONS ON RESTRICTED STOCK AWARDS

If any "Section 8 Event" occurs prior to the scheduled lapse of all restrictions applicable to restricted stock awards under the Plan, all such restrictions shall lapse upon the occurrence of any such "Section 8 Event" regardless of the scheduled lapse of such restrictions.

SECTION 9

EFFECT OF THE PLAN ON THE RIGHTS OF EMPLOYEES AND EMPLOYER

Neither the adoption of the Plan nor any action of the Board or the Committee pursuant to the Plan shall be deemed to give any employee any right to be granted a stock option (with or without alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights) or to be awarded restricted stock under the Plan and nothing in the Plan, in any stock option, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights or limited cash payment rights granted under the Plan, in any restricted stock award under the Plan or in any stock option agreement or restricted stock agreement shall confer any right to any employee to continue in the employ of the Company or any Subsidiary or interfere in any way with the rights of the Company or any Subsidiary to terminate the employment of any employee at any time.

SECTION 10

AMENDMENT

The right to alter and amend the Plan at any time and from time to time and the right to revoke or terminate the Plan are hereby specifically reserved to the Board; provided always that no such revocation or termination shall terminate any outstanding stock options, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights or limited cash payment rights granted under the Plan or cause a revocation or a forfeiture of any restricted stock award under the Plan; and provided further that no such alteration or amendment of the Plan shall, without shareholder approval (a) increase the total number of shares which may be issued or delivered under the Plan, (b) increase the total number of shares which may be covered by any stock option or stock options granted to any one optionee or any restricted stock awards to any one person, (c) change the minimum option price, (d) make any changes in the class of employees eligible to receive incentive stock options or (e) extend any period set forth in the Plan during which stock options (with or without alternative stock appreciation rights, cash payment rights, limited stock appreciation rights and/or limited cash payment rights) may be granted or restricted stock may be awarded. No alteration, amendment, revocation or termination of the Plan shall, without the written consent of the holder of a stock option, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights, limited cash payment rights or restricted stock theretofore awarded under the Plan, adversely affect the rights of such holder with respect to such stock option, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights, limited cash payment rights or restricted stock.

SECTION 11

EFFECTIVE DATE AND DURATION OF PLAN

The effective date and date of adoption of the Plan shall be December 17, 1987, the date of adoption of the Plan by the Board, provided that such adoption of the Plan by the Board is approved by the affirmative vote of the holders of at least a majority of the outstanding shares of voting stock of the Company at a meeting of such holders duly called, convened and held on or prior to December 16,1988. No stock option, alternative stock appreciation rights, limited stock appreciation rights or limited cash payment rights granted under the Plan may be exercised and no restricted stock may be awarded until after such approval. No stock option, alternative stock appreciation rights, cash payment rights, limited stock appreciation rights or limited cash payment rights may be granted and no restricted stock may be awarded under the Plan subsequent to December 16, 1997.

EXHIBIT (10)(l)

BOARD OF DIRECTORS'
MEETING OF MARCH 10, 1999
PROPOSED RESOLUTION

The Chairman stated that the Compensation Committee at its meeting held on March 9, 1999, recommended that the 1998 Management Share Incentive Plan (the "1998 Plan") be amended to correct the 1998 Plan to conform to actual usage. After discussion, upon motion duly made and seconded, the following resolution was unanimously adopted:

WHEREAS, Section 12 of the 1998 Management Share Incentive Plan (the "1998 Plan") reserves to the Board the power to amend the Plan from time to time;

WHEREAS, the Board desires to amend the definition of Retirement contained in the 1998 Plan to conform to the definition contained in the 1987 Management Share Incentive Plan and to the manner in which the two Plans have been administered;

NOW THEREFORE, BE IT RESOLVED that Section 18(v) of the 1998 Plan is hereby amended to read as follows:

"(v) `Retirement' means retirement under any retirement plan of the Company or a Participating Subsidiary."

Management's Discussion and Analysis
Results of Operations

1998 versus 1997 -- Sales for 1998 were $491.2 million, a decrease of $3.1 million, or 1%, from $494.3 million in 1997. Relatively flat sales levels reflect divestitures and the negative currency translation effects of the strong U.S. dollar, largely offset by modest growth in U.S. sales and local currency sales in international markets.

Sales by U.S. operations were $274.9 million in 1998 compared to $273.5 in 1997. Flat sales levels reflect strong growth in specialty chemicals sales and modest improvements in personal protective equipment sales. These gains were largely offset by the mid-year divestitures of HAZCO Services, Inc. and Baseline Industries, Inc., which were sold on June 30, 1998, as part of ongoing initiatives to rationalize distribution channels and improve operating performance. The divestitures resulted in $16.8 million less sales in 1998 compared to 1997.

Sales by European operations, stated in U.S. dollars were $122.0 million in both 1998 and 1997. Although local currency sales in Europe improved slightly in 1998, negative currency translation effects throughout Europe offset these gains when stated in U.S. dollars.

Sales by MSA's operations outside the U.S. and Europe were $92.0 million in 1998 compared to $97.6 million in 1997, a 6% decrease. Modest overall improvements in local currency sales were more than offset by significant unfavorable currency translation effects. Strong local currency sales growth was reported in Canada and Australia. The inclusion of Wuxi-MSA Safety Equipment Co., Ltd., which became majority-owned during 1998, was also a factor in improved local currency sales.

Gross profit for 1998 was $179.5 million, a decrease of $12.6 million, or 7%, from $192.1 million in 1997. The 1998 ratio of gross profit to sales declined to 36.5% from 38.9%. The lower gross profit percentage in 1998 reflects somewhat lower margins in the U.S., while the margins of international operations were relatively stable. Lower margins at U.S. operations reflect the full transition to an indirect sales strategy and competitive pricing and promotions in personal protective equipment markets, somewhat higher low-margin government sales, and lower specialty chemical margins, primarily related to product mix.

Research and development expenses in 1998 were $17.4 million compared to $16.7 million in 1997, reflecting modest increases in safety and health equipment research activity in the U.S and Germany.

Depreciation, selling and administrative expenses decreased $4.9 million to $152.7 million in 1998, and decreased as a percent of sales to 31.1% from 31.9% in 1997. The decrease reflects the mid-year divestitures of HAZCO Services, Inc. and Baseline Industries, Inc., partially offset by higher expenses in other U.S. operations. Depreciation, selling and administrative expenses at international operations were slightly lower than in 1997, due in part to currency translation effects.

Currency exchange losses charged to income in 1998 were $315,000 compared to $40,000 in 1997. The most significant losses from currency valuation changes in 1998 occurred in Latin America.

Restructuring charges in 1998 were $1.0 million compared to $2.2 million in 1997. The charges in both years relate primarily to severance and phased retirement costs associated with workforce reductions in Germany.

Other income was $6.0 million in 1998 compared to $6.8 million in 1997. The decrease reflects lower interest income and equity earnings, due to the 1998 consolidation of Wuxi-MSA Safety Equipment Co., Ltd. Other income for 1998 includes $2.8 million related to the divestitures of the HAZCO Services, Inc. and Baseline Industries, Inc. affiliates. These divestitures contributed $2.2 million to net income. The operating results of these two affiliates were not material to the consolidated financial statements during the three years ended December 31, 1998.

The effective income tax rate, for which further information is included in note 8, was 35.2% in 1998 and 39.7% in 1997. The lower effective rate in 1998 reflects tax benefits associated with U.S. divestitures and operating losses in various international countries.

Net income in 1998 decreased $3.6 million to $18.3 million from $21.9 million in 1997. Basic earnings per share of common stock declined in 1998 to $4.11 compared to $4.81 in 1997. Earnings per share benefited from share repurchases that reduced average shares outstanding by 2% in 1998.

1997 versus 1996 -- Sales for 1997 were $494.3 million, a decrease of $6.7 million, or 1%, from $501.0 million in 1996. The slight decline in sales reflects the absence of U.S. military gas mask business and the negative currency translation effect of the strong U.S. dollar, particularly in relation to continental European currencies. These decreases were offset by improved sales in U.S. commercial markets and modest growth in local currency sales in international markets.

Sales by U.S. operations decreased 4% in 1997. Sales for 1996 included some military gas mask business on contracts which were expiring and several large special instrument orders. Sales of specialty chemicals continued to grow in 1997, although at a more modest pace than in past years. Personal protective equipment sales in commercial markets improved during 1997 and also benefited from the inclusion of a full year's sales from the fall protection and disposable respirator acquisitions which were made in 1996.

Sales by European operations, stated in U.S. dollars, decreased 12% in 1997. Although local currency sales in Europe improved slightly in 1997, negative currency translation effects, particularly in Germany, resulted in the decrease when stated in U.S. dollars. Sales by MSA's operations outside the U.S. and Europe increased 23% in 1997. The inclusion of MSA Africa, which became wholly owned at the beginning of 1997, was a major factor in this improvement. Latin American and Asian operations reported strong sales growth.

Gross profit for 1997 was $192.1 million, a decrease of $1.8 million, or 1%, from $193.9 million in 1996. The 1997 ratio of gross profit to sales improved slightly to 38.9% from 38.7%. The improved gross profit percentage in 1997 was the result of cost reductions from improved manufacturing processes and the continuing sales mix shift away from lower-margin military sales to higher-margin commercial sales. Gross profit in 1996 also benefited from liquidations of lower-cost LIFO inventories which were not repeated in 1997. Excluding this effect, gross margin percentages improved in 1997 in the U.S., while those in Europe slipped.

Research and development expenses in 1997 were $16.7 million compared to $19.1 million in 1996. The decrease reflects an emphasis on core-product research, more limited external research purchases, and higher reimbursements for research performed under contracts with customers in 1997. Research expenses incurred in Germany were also lower, when stated in U.S. dollars, due to currency translation effects.

Depreciation, selling and administrative expenses increased $962,000 to $157.7 million in 1997, and increased as a percent of sales to 31.9% from 31.3% in 1996. The modest increase reflects expenses incurred in conjunction with the Enterprise Wide System implementations and global new product development initiatives, partially offset by favorable currency translation effects associated with the strong U.S. dollar. Ongoing depreciation, and selling and administrative expenses were generally lower than in 1996.

Currency exchange losses charged to income in 1997 were $40,000 compared to $735,000 in 1996. The most significant losses from currency valuation changes in both years occurred in Brazil.

Restructuring charges in 1997 were $2.2 million compared to $7.8 million in 1996. Charges in 1997 related to workforce reductions at European operations, including $1.7 million in accrued severance and phased retirement pay in Germany. The 1996 restructuring charges related primarily to separation pay and asset impairment write-downs connected with the closing of the Esmond, Rhode Island plant.

The 1996 results included a $2.5 million settlement, related to partial termination of a U.S. government contract, which resulted in the recovery of costs incurred in earlier years.

Other income was $6.8 million in 1997 compared to $7.1 million in 1996, reflecting somewhat lower interest income.

The effective income tax rate, for which further information is included in note 8, was 39.7% in 1997 and 37.1% in 1996. The higher effective rate in 1997 reflects additional tax expenses at international companies.

Net income in 1997 decreased $1.2 million to $21.9 million from $23.1 million in 1996. Basic earnings per share of common stock improved in 1997 to $4.81 compared to $4.74 in 1996. Earnings per share benefited from share repurchases that reduced average shares outstanding by 7% in 1997.

Liquidity and Financial Condition

Cash and cash equivalents increased $4.1 million during 1998 compared to a $5.2 million decrease in 1997. The company's principal source of financing capital expenditures and internal growth is cash flow from operations. Operations provided cash of $21.4 million in 1998 compared to $30.9

million in 1997. The most significant reason for the change was an increase in receivables in 1998, primarily in the U.S., while 1997 cash flow from operations benefited from a significant decrease in receivables. This difference was somewhat offset by more favorable currency exchange effects on working capital balances in 1998. Cash provided by operations in 1997 was $26.3 million lower than in 1996, reflecting increased working capital needs associated with U.S. restructuring activities and the currency translation effects of the strong U.S. dollar on the net current assets of international affiliates.

Capital expenditures totaled $34.3 million in 1998 and $35.3 million in 1997. Both years included expenditures for the Enterprise Wide System and manufacturing facility improvements associated with U.S. restructuring activities. In the past five years, approximately $133 million has been spent on new facilities, equipment, and information systems.

Investing activities benefited from the net proceeds of $22.9 million received on the divestitures of HAZCO Services, Inc. and Baseline Industries, Inc. in 1998.

Dividends paid on the common stock during 1998 (the 81st consecutive year of dividend payment) were $1.33 per share, up from the $1.24 per share in 1997 and $1.10 per share in 1996. Cash dividends are paid at a conservative percentage of income, which is consistent with the company's practice of financing growth internally. During 1998, the company repurchased 105,351 common shares for $7.6 million. As of December 31, 1998, an additional 223,926 shares may be repurchased under current authorizations.

The average amount of short term debt outstanding during 1998 and 1997 was $31.3 million and $21.6 million, respectively. Borrowings during 1998 increased primarily to finance capital expenditures. Credit available at year-end with banks was the U.S. dollar equivalent of $52.8 million, of which $19.9 million was unused.

Long-term debt, including the current portion, decreased $1.3 million to $12.4 million, a conservative 4.9% of total capital. Total capital is defined as long-term debt plus the current portion of long-term debt and shareholders' equity.

Accounts receivable, including the effects of the divestitures, increased $3.5 million to $94.9 million at December 31, 1998. Trade receivables expressed in number of days' sales outstanding was 68 days at December 31, 1998 compared to 65 days in 1997.

Inventories, including the effects of the divestitures, increased $4.4 million to $85.5 million at December 31, 1998. Inventory measured against sales turned 5.7 times in 1998 and 6.1 times in 1997. The working capital ratio was 2.1 to 1 at the end of both 1998 and 1997.

The company's financial position remains strong and should provide adequate capital resources for operations, capital expansion and dividends to shareholders.

Cumulative Translation Adjustments

The year-end position of the U.S. dollar relative to international currencies resulted in translation losses of $3.6 million being charged to the cumulative translation adjustments shareholders' equity account in 1998 compared to a $7.2 million loss in 1997 and a $747,000 loss in 1996. Significant 1998 translation losses occurred in Germany, Canada and Australia. Charges for 1998 also include effects related to the consolidation of Wuxi-MSA Safety Equipment Co., Ltd. Translation losses in 1997 occurred in Europe, particularly Germany, and in Australia.

Financial Instrument Market Risk

Market risk represents the risk of adverse changes in the value of a financial instrument caused by changes in currency exchange rates, interest rates, and equity prices. The company is exposed to market risks related to currency exchange rates and interest rates. The company does not enter into derivatives or other financial instruments for trading or speculative purposes, nor does it engage in currency exchange rate hedges or interest rate swap agreements.

Currency exchange rate sensitivity -- By the very nature of its global operations, the company's cash flow and earnings are subject to fluctuations due to exchange rate changes. However, because the company operates in a number of locations around the world, currency exchange risk is well diversified. Short-term debt of international affiliates is payable in local currencies, which is in keeping with the company's policy of reducing currency exchange exposures by offsetting local currency assets with local currency debt.

Interest rate sensitivity -- The company is exposed to changes in interest rates primarily as a result of borrowing and investing activities used to maintain liquidity and fund business operations. Because of the relatively short maturities of temporary investments and notes payable and the variable rate nature of most long-term debt, substantially all of the company's financial instruments at December 31, 1998 were reported at carrying values which approximate fair value. The earnings and cash flow impact for next year of a hypothetical 10% increase in the company's effective interest rate would not be material.

Year 2000 Readiness

The company is continuing Year 2000 readiness action plans which focus on computerized and automated systems and processes which are critical to operations, key vendors and service providers, and MSA products. Ongoing actions at all operating locations include: assessing the Year 2000 impact, assigning priorities, modifying or replacing mission-critical items that are not Year 2000 compliant, contacting key vendors and service providers, and developing contingency plans.

State of readiness -- In 1996, to provide the information infrastructure for MSA's evolving global management strategy, the company began a project to replace significant information technology (IT) systems world-wide with a fully-integrated Enterprise Wide System (EWS) using SAP R/3. Because SAP R/3 is Year 2000 compliant, implementation of EWS at various MSA companies has been timed to reduce the Year 2000 impact on IT systems. EWS is currently operating at all MSA locations in the U.S. and at international affiliates in Britain and Germany. Implementations at affiliates in Sweden and Mexico are expected to be completed during 1999. By the end of 1999, EWS will be implemented at MSA operations which account for approximately

75% of consolidated sales and over 90% of manufacturing activity. The development costs associated with the EWS project were approximately $30 million through 1998. A significant portion of these costs has been capitalized and is being amortized. IT systems at those operations which will not be on EWS by the end of 1999 are either currently Year 2000 compliant or will be modified or replaced during 1999.

MSA is also addressing Year 2000 compliance in a number of areas, including: non-IT systems and processes (such as physical plant and manufacturing systems), key vendors and service providers, EDI systems, and MSA products.

The following chart provides estimated percentages of completion for the inventory of systems and processes that may be affected by the year 2000, the analysis performed to determine the Year 2000 impact on inventoried systems and processes, and the Year 2000 readiness of the inventoried systems and processes.

	Percent Completed		
As of February 28, 1999	Y2K Inventory	Y2K Impact Assessment	Y2K Readiness
Information technology	100%	100%	85%
Non-information technology	90%	80%	75%

Costs of Year 2000 remediation -- Costs associated with Year 2000 remediation are currently estimated to be less than $5 million. These costs, which are funded from operating cash flow, are being expensed in 1998 and 1999 as incurred.

Risks and contingency plans -- Failure to identify and correct significant Year 2000 issues could result in interruption of normal business operations. The company believes that the efforts described above should reasonably identify and address the impact of the Year 2000 issue and its effect on operations and should reduce the possibility of significant interruptions. However, due to the uncertainties inherent in the Year 2000 problem, including the readiness of third party vendors and service providers and customers, there is a risk of a material adverse effect on future results or financial position. The most reasonably likely worst case Year 2000 scenario would be the inability of critical third party suppliers, such as warehouse and distribution service providers and utilities and telecommunication companies, to continue providing their services. MSA plans to continue to assess these risks and expects to have contingency plans completed by the middle of 1999.

Forward-looking Statements

Certain sections of this report contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, without limitation, statements regarding expectations for new product introductions, delivery improvements, restructuring plans, sales and earnings, liquidity, Year 2000 readiness, and market risk. Actual results may differ from expectations contained in such forward-looking statements and can be affected by any number of factors, many of which are outside management's direct control. Among the factors that could cause such differences are the economic environment, Year 2000 readiness of critical third party suppliers, and interest and currency exchange rates.

Common Stock

At December 31, 1998, there were 4,378,874 shares of common stock outstanding. There were approximately 370 identifiable common stockholders on November 20, 1998, a recent date for dividends. The common stock last-sale price and up-to-the-minute volume information (Symbol: MNES) is included in the National Association of Security Dealers, Inc., (NASDAQ) National Market System. The quarterly high and low price quotations for common shares follow:

	1998		1997	
Quarter	High	Low	High	Low
First	$70-1/2	$57-1/4	$63-3/4	$53-1/2
Second	76-1/2	69	63-3/4	56-1/2
Third	87	64	73	59-3/4
Fourth	81-7/8	64-1/2	73-1/2	65-1/2

Common stock quarterly cash dividend information is as follows:

Quarter	Amount Per Share	Record Date	Payment Date
		1998	
First	$ .31	Feb. 27, 1998	Mar. 10, 1998
Second	.34	May 22, 1998	Jun. 10, 1998
Third	.34	Aug. 14, 1998	Sep. 10, 1998
Fourth	.34	Nov. 20, 1998	Dec. 10, 1998
Total	1.33		
		1997	
First	$ .31	Feb. 21, 1997	Mar. 10, 1997
Second	.31	May 16, 1997	Jun. 10, 1997
Third	.31	Aug. 15, 1997	Sep. 10, 1997
Fourth	.31	Nov. 14, 1997	Dec. 10, 1997
Total	1.24		

The company's stock transfer agent is Northwest Bank Minnesota, N.A., 161 North Concord Exchange, South St. Paul, MN 55075-0738.

Report of Management

Mine Safety Appliances Company's consolidated financial statements and related notes that appear in this Annual Report to Shareholders were prepared by the company in accordance with generally accepted accounting principles. In fulfilling its responsibilities for the integrity and objectivity of the consolidated financial statements, management maintains accounting procedures designed to provide accurate books, records and accounts which reasonably and fairly reflect the transactions of the company in a consistent manner on the accrual basis of accounting.

Company personnel are trained and given responsibilities to ensure adequate internal accounting controls at a cost commensurate with the risks involved. Internal accounting controls, monitored by an internal audit staff, provide reasonable assurances that transactions are executed in accordance with proper authorization and that adequate accountability for the company's assets is maintained.

The Board of Directors, through its Audit Committee, is responsible for assuring that management fulfills its responsibilities in the preparation of the financial statements. The Audit Committee meets at least twice a year with the company's independent accountants to discuss the scope of their examination and any significant findings resulting therefrom.

/s/ James E. Herald

James E. Herald
Vice President--Finance
Chief Financial Officer

Report of Independent Accountants

To the Shareholders and Board of Directors of Mine Safety Appliances Company

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of income, of changes in retained earnings and accumulated other comprehensive income, and of cash flows present fairly, in all material respects, the financial position of Mine Safety Appliances Company and its subsidiaries at December 31, 1998 and 1997, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1998, in conformity with generally accepted accounting principles. 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 of these statements in accordance with generally accepted auditing standards which 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, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 19, 1999

Consolidated Statement of Income
(In thousands, except per share amounts)

Year Ended December 31	1998	1997	1996
Net sales	$491,181	$494,324	$500,985
Other income	6,026	6,802	7,141
	497,207	501,126	508,126
Costs and expenses			
Cost of products sold	311,672	302,225	307,112
Selling, general and administrative	130,335	134,444	133,071
Depreciation and amortization	22,398	23,233	23,644
Interest	3,258	2,781	1,595
Currency exchange losses	315	40	735
Facilities consolidation and restructuring charges	1,021	2,164	7,786
Contract costs recovery			(2,484)
	468,999	464,887	471,459
Income before income taxes	28,208	36,239	36,667
Provision for income taxes	9,933	14,385	13,606
Net income	$ 18,275	$ 21,854	$ 23,061
Basic earnings per common share	$ 4.11	$ 4.81	$ 4.74
Diluted earnings per common share	$ 4.10	$ 4.80	$ 4.74

See notes to consolidated financial statements.

Consolidated Balance Sheet

(In thousands, except per share amounts)

December 31

		1998	1997
Assets			
Current Assets	Cash	$ 10,084	$ 5,264
	Temporary investments, at cost which approximates market	13,936	14,657
	Receivables, less allowance for doubtful accounts $3,004 and $3,704	94,850	91,388
	Inventories	85,491	81,066
	Deferred tax assets-net	14,349	16,827
	Prepaid expenses and other current assets	10,499	10,411
	Total current assets	229,209	219,613
Property	Land	4,999	6,256
	Buildings	102,211	110,405
	Machinery and equipment	255,286	221,812
	Construction in progress	9,191	18,949
	Total	371,687	357,422
	Less accumulated depreciation	(207,126)	(199,465)
	Net property	164,561	157,957
Other Assets	Prepaid pension cost	46,162	31,091
	Other noncurrent assets	16,784	28,492
	Total	$ 456,716	$ 437,153
Liabilities			
Current Liabilities	Notes payable and current portion of long-term debt	$ 33,450	$ 25,181
	Accounts payable	34,966	30,809
	Employees' compensation	11,891	12,088
	Insurance	8,932	8,919
	Taxes on income	991	4,089
	Other current liabilities	19,776	22,154
	Total current liabilities	110,006	103,240
Long-term Debt		11,919	12,270
Other Liabilities	Pensions and other employee benefits	60,550	56,827
	Deferred tax liabilities--net	28,549	22,780
	Other noncurrent liabilities	2,846	929
	Total other liabilities	91,945	80,536
Shareholders' Equity			
	Preferred stock, 4-1/2% cumulative, $50 par value (callable at $52.50)	3,569	3,569
	Common stock, no par value (shares outstanding: 1998--4,378,874; 1997--4,455,915)	12,591	12,297
	Stock compensation trust	(26,869)	(28,200)
	Treasury shares, at cost	(91,116)	(83,469)
	Deferred stock compensation	(951)	(342)
	Accumulated other comprehensive income	(10,240)	(6,282)
	Earnings retained in the business	355,862	343,534
	Total shareholders' equity	242,846	241,107
	Total	$ 456,716	$ 437,153

See notes to consolidated financial statements.

Consolidated Statement of Cash Flows

(In thousands)

Year Ended December 31	1998	1997	1996
Operating Activities			
Net income	$ 18,275	$ 21,854	$ 23,061
Depreciation and amortization	22,398	23,233	23,644
Pensions	(10,344)	(10,881)	132
Gain on divestitures	(2,238)		
Deferred income taxes	7,599	7,445	(2,525)
Receivables	(7,730)	10,352	(10,785)
Inventories	(7,764)	(4,026)	6,581
Accounts payable and accrued liabilities	317	(4,079)	16,157
Other assets and liabilities	(417)	(4,891)	(1,490)
Other--including currency exchange adjustments	1,273	(8,102)	2,451
Cash Flow From Operating Activities	21,369	30,905	57,226
Investing Activities			
Property additions	(34,285)	(35,304)	(21,583)
Property disposals	2,110	3,225	1,889
Net proceeds from divestitures	22,865		
Acquisitions and other investing	(1,838)	(2,411)	(10,276)
Cash Flow From Investing Activities	(11,148)	(34,490)	(29,970)
Financing Activities			
Additions to long-term debt	402	295	146
Reductions of long-term debt	(710)	(1,037)	(1,445)
Changes in notes payable and short-term debt	8,776	17,438	2,247
Cash dividends	(5,947)	(5,655)	(5,438)
Company stock purchases and sales	(6,999)	(9,907)	(28,318)
Cash Flow From Financing Activities	(4,478)	1,134	(32,808)
Effect of exchange rate changes on cash	(1,644)	(2,724)	(1,302)
Increase (decrease) in cash and cash equivalents	4,099	(5,175)	(6,854)
Beginning cash and cash equivalents	19,921	25,096	31,950
Ending cash and cash equivalents	$ 24,020	$ 19,921	$ 25,096
Supplemental cash flow information:			
Interest payments	$ 3,299	$ 2,328	$ 1,419
Income tax payments	8,663	15,762	9,893

See notes to consolidated financial statements.

Consolidated Statement of Changes in
Retained Earnings And Accumulated
Other Comprehensive Income
(In thousands)

	Retained Earnings	Accumulated Other Comprehensive Income	Comprehensive Income
Balances January 1, 1996	$ 309,712	$ 2,177	
Net income	23,061		$ 23,061
Cumulative translation adjustments (a)		(747)	(747)
Comprehensive income			$ 22,314
Common dividends	(6,811)		
Preferred dividends	(64)		
Balances December 31, 1996	325,898	1,430	
Net income	21,854		$ 21,854
Cumulative translation adjustments (a)		(7,174)	(7,174)
Minimum pension liability adjustments (b)		(538)	(538)
Comprehensive income			$ 14,142
Common dividends	(4,181)		
Preferred dividends	(37)		
Balances December 31, 1997	343,534	(6,282)	
Net income	18,275		$ 18,275
Cumulative translation adjustments (a)		(3,625)	(3,625)
Minimum pension liability adjustments (b)		(333)	(333)
Comprehensive income			$ 14,317
Common dividends	(5,898)		
Preferred dividends	(49)		
Balances December 31, 1998	$ 355,862	$ (10,240)	

(a) -- Charges to cumulative translation adjustments in 1998, 1997, and 1996 include tax expense of $30,000, $670,000 and $350,000, respectively.
(b) -- Charges to minimum pension liability adjustments in 1998 and 1997 are net of tax benefit of $221,000 and $360,000, respectively.

Components of accumulated other comprehensive income are as follows:

	(In thousands) 1998	1997	1996
Cumulative translation adjustments	$ (9,369)	$(5,744)	$1,430
Minimum pension liability adjustments	(871)	(538)	
Accumulated other comprehensive income	$(10,240)	$(6,282)	$1,430

See notes to consolidated financial statements.

Notes to Consolidated Financial Statements

Note 1--Basis of Presentation
Certain prior year balances have been reclassified to conform with the current year presentation.

SIGNIFICANT ACCOUNTING POLICIES ARE STATED IN ITALICS AT THE APPLICABLE NOTES TO CONSOLIDATED FINANCIAL STATEMENTS.

THE PREPARATION OF FINANCIAL STATEMENTS IN CONFORMITY WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES REQUIRES MANAGEMENT TO MAKE ESTIMATES AND ASSUMPTIONS THAT AFFECT THE REPORTED AMOUNTS OF ASSETS AND LIABILITIES AND DISCLOSURE OF CONTINGENT ASSETS AND LIABILITIES AT THE DATE OF THE FINANCIAL STATEMENTS AND THE REPORTED AMOUNTS OF REVENUES AND EXPENSES DURING THE REPORTING PERIOD. ACTUAL RESULTS COULD DIFFER FROM THOSE ESTIMATES.

ALL SIGNIFICANT MAJORITY-OWNED COMPANIES ARE INCLUDED IN THE CONSOLIDATED FINANCIAL STATEMENTS. INVESTMENTS IN WHICH THE COMPANY HAS AN EQUITY INTEREST OF 20% TO 50% ARE CARRIED AT EQUITY IN NET ASSETS. INTERCOMPANY TRANSACTIONS ARE ELIMINATED IN CONSOLIDATION.

PROPERTY IS STATED AT COST. DEPRECIATION IS BASED ON ESTIMATED USEFUL LIVES USING ACCELERATED AND STRAIGHT-LINE METHODS. MAINTENANCE AND REPAIRS ARE CHARGED TO EXPENSE. RENEWALS AND BETTERMENTS WHICH SUBSTANTIALLY EXTEND THE USEFUL LIFE OF PROPERTY ARE CAPITALIZED. PROFITS OR LOSSES RESULTING FROM DISPOSITIONS ARE INCLUDED IN INCOME.

INTANGIBLE ASSETS, INCLUDING GOODWILL AND PATENTS, ARE AMORTIZED ON A STRAIGHT LINE OR UNITS OF PRODUCTION BASIS OVER PERIODS NOT EXCEEDING 20 YEARS.

THE FINANCIAL STATEMENTS OF COMPANIES FOR WHICH THE UNITED STATES DOLLAR IS DETERMINED TO BE THE FUNCTIONAL CURRENCY ARE TRANSLATED USING CURRENT AND HISTORIC EXCHANGE RATES; ADJUSTMENTS RELATED THERETO ARE INCLUDED IN INCOME FOR THE CURRENT PERIOD. THE FINANCIAL STATEMENTS OF ALL OTHER COMPANIES ARE TRANSLATED FROM THEIR FUNCTIONAL CURRENCY INTO UNITED STATES DOLLARS USING CURRENT EXCHANGE RATES; THE RESULTANT TRANSLATION ADJUSTMENTS ARE NOT INCLUDED IN INCOME BUT ARE ACCUMULATED IN A SEPARATE EQUITY ACCOUNT. TRANSACTION GAINS AND LOSSES ARE RECOGNIZED IN INCOME FOR THE CURRENT PERIOD.

CASH AND CASH EQUIVALENTS IN THE CONSOLIDATED STATEMENT OF CASH FLOWS INCLUDES TEMPORARY INVESTMENTS THAT ARE READILY MARKETABLE AND HAVE MINIMAL RISK AS TO CHANGE IN VALUE. CERTAIN SECURITIES HAVE MATURITIES IN EXCESS OF NINETY DAYS; BUT, AS PART OF THE COMPANY'S CASH MANAGEMENT PROGRAM, MATURITIES ARE SCHEDULED BASED ON EXPECTED CASH NEEDS FOR THE ENSUING TWELVE MONTHS.

COMPREHENSIVE INCOME, DETERMINED IN ACCORDANCE WITH STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 130, INCLUDES NET INCOME AND CHANGES IN OTHER COMPREHENSIVE INCOME ITEMS WHICH ARE REPORTED IN SHAREHOLDERS' EQUITY. OTHER COMPREHENSIVE INCOME IS REPORTED NET OF RELATED INCOME TAX EXPENSE OR BENEFIT.

Note 2--Restructuring

Restructuring charges of $1,021,000 in 1998 and $2,164,000 in 1997 relate to planned workforce reductions at international locations, primarily in Germany. Charges of $7,786,000 in 1996 were principally for separation pay and asset impairments associated with the closing of the Esmond, Rhode Island safety products manufacturing facility.

Note 3--Research and Development Expense
RESEARCH AND DEVELOPMENT COSTS, CHARGED AGAINST INCOME AS INCURRED, were $17,415,000 in 1998, $16,668,000 in 1997, and $19,122,000 in 1996.

Note 4--Other Income

	(In thousands) 1998	1997	1996
Interest	$1,293	$2,068	$2,628
Rent	1,226	1,108	1,366
Dispositions of assets	807	2,568	1,725
Equity in earnings of affiliates	(6)	516	656
Divestiture of affiliates	2,807		
Other	(101)	542	766
Total	6,026	6,802	7,141

Note 5--Inventories

MOST U.S. INVENTORIES ARE VALUED ON THE LAST-IN, FIRST-OUT (LIFO) COST METHOD. OTHER INVENTORIES ARE VALUED AT THE LOWER OF COST, USING AVERAGE OR CURRENT STANDARD COSTS WHICH APPROXIMATE ACTUAL COSTS ON A FIRST-IN, FIRST-OUT (FIFO) BASIS, OR MARKET, DETERMINED BY REPLACEMENT COST OR NET REALIZABLE VALUE.

Reductions in certain inventory quantities during 1998, 1997, and 1996 resulted in liquidations of LIFO inventory quantities carried at lower costs prevailing in prior years. The effect of these liquidations reduced cost of sales by $320,000 in 1998, $572,000 in 1997, and $10,361,000 in 1996, and increased net income by $195,000 ($.04 per share), $349,000 ($.08 per share), and $6,217,000 ($1.28 per share) respectively.

	(In thousands) 1998	1997
Finished products	$36,956	$36,626
Work in process	12,445	13,772
Raw materials and supplies	36,090	30,668
Total inventories	85,491	81,066
Excess of FIFO costs over LIFO costs	43,732	45,053

Inventories stated on the LIFO basis represent 51%, 45%, and 39% of the total inventories at December 31, 1998, 1997, and 1996, respectively.

Note 6--Long-Term Debt

	(In thousands) 1998	1997
U.S.		
Industrial development debt issues payable through 2022, 5.0%	$10,750	$10,950
Other, 7% to 18.9%	6	76
International		
Various notes payable through 2002, 5.5% to 9.2% ($1,241 secured by pledge of assets located abroad)	1,654	2,636
Total	12,410	13,662
Amounts due within one year	491	1,392
Long-term debt	11,919	12,270

Approximate maturities of these obligations over the next five years are $491,000 in 1999, $353,000 in 2000, $339,000 in 2001, $306,000 in 2002 and none in 2003. International notes payable include $171,000 with no fixed maturity date. Some U.S. loan agreements contain covenants to maintain specified levels of shareholders' equity.

Notes to Consolidated Financial Statements

Note 7--Segment Information

IN 1998, THE COMPANY ADOPTED STATEMENT OF FINANCIAL ACCOUNTING STANDARDS (SFAS) NO. 131, WHICH DESIGNATES THE INTERNAL FINANCIAL INFORMATION THAT IS USED BY MANAGEMENT FOR MAKING OPERATING DECISIONS AND ASSESSING PERFORMANCE AS THE SOURCE FOR IDENTIFYING THE COMPANY'S OPERATING SEGMENTS. Prior years' segment information has been restated to conform with SFAS 131.

The company is organized into three geographic operating segments (U.S., Europe, and other non-U.S.), each of which includes a number of operating companies. The company is engaged in the manufacture and sale of safety and health equipment, including respiratory protective equipment, head protection, eye and face protection, hearing protectors, safety clothing, industrial emergency care products, mining safety equipment, and monitoring instruments. In addition, the company manufactures and sells specialty chemicals, including boron-based chemicals.

Reportable segment information is presented in the following table:

	(In thousands)				
	U.S.	Europe	Other non-U.S.	Reconciling items	Consolidated totals
1998					
Sales to external customers	$274,865	$121,964	$ 92,042	$ 2,310	$491,181
Intercompany sales	33,430	16,922	1,635	(51,987)	
Net income	14,855	214	1,838	1,368	18,275
Total assets	294,637	108,293	62,758	(8,972)	456,716
Interest income	377	503	450	(37)	1,293
Interest expense	2,308	211	1,074	(335)	3,258
Noncash items:					
Depreciation and amortization	15,685	4,893	1,663	157	22,398
Pension income (expense)	13,694	(3,126)	(224)		10,344
Equity in earnings of affiliates			(6)		(6)
Income tax provision (benefit)	8,026	(398)	1,868	437	9,933
Investments in affiliates	358			31	389
Property additions	26,662	4,010	3,610	3	34,285
Fixed assets	130,484	24,793	9,257	27	164,561
1997					
Sales to external customers	273,542	121,949	97,620	1,213	494,324
Intercompany sales	37,160	17,803	1,325	(56,288)	
Net income	16,503	220	4,312	819	21,854
Total assets	287,397	118,133	59,475	(27,852)	437,153
Interest income	661	1,185	469	(247)	2,068
Interest expense	1,850	302	926	(297)	2,781
Noncash items:					
Depreciation and amortization	16,785	4,853	1,413	182	23,233
Pension income (expense)	14,705	(3,318)	(506)		10,881
Equity in earnings of affiliates			516		516
Income tax provision	10,589	841	1,999	956	14,385
Investments in affiliates	2,386			1,009	3,395
Property additions	28,145	3,998	3,143	18	35,304
Fixed assets	124,831	24,983	8,106	37	157,957
1996					
Sales to external customers	283,525	138,636	79,155	(331)	500,985
Intercompany sales	33,738	15,612	632	(49,982)	
Net income	16,049	4,925	2,887	(800)	23,061
Total assets	269,308	133,327	51,225	(31,345)	422,515
Interest income	843	1,440	543	(198)	2,628
Interest expense	961	437	462	(265)	1,595
Noncash items:					
Depreciation and amortization	16,482	5,917	1,073	172	23,644
Pension income (expense)	4,647	(4,291)	(488)		(132)
Equity in earnings of affiliates		224	432		656
Income tax provision (benefit)	10,889	1,217	1,690	(190)	13,606
Investments in affiliates	2,378	340		484	3,202
Property additions	14,659	5,174	1,750		21,583
Fixed assets	113,865	28,152	7,143	43	149,203

Sales by product line:	(In thousands)		
	1998	1997	1996
Safety and health equipment	$452,420	$463,250	$472,731
Specialty chemicals	38,761	31,074	28,254
	491,181	494,324	500,985

Reconciling items consist primarily of intercompany eliminations and items reported at the corporate level.

Sales are attributed to countries based on the location of the selling company. Sales in Germany were $58,239,000 in 1998, $62,343,000 in 1997, and $73,282,000 in 1996.

Notes to Consolidated Financial Statements

Note 8--Income Taxes

INCOME TAXES ARE ACCOUNTED FOR IN ACCORDANCE WITH STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 109. DEFERRED TAX BALANCES ARE STATED AT ENACTED TAX RATES EXPECTED TO BE IN EFFECT WHEN TAXES ARE ACTUALLY PAID OR DEDUCTIONS ARE TAKEN. NO PROVISION IS MADE FOR UNDISTRIBUTED EARNINGS OF INTERNATIONAL AFFILIATES SINCE LITTLE OR NO TAX WOULD RESULT UNDER APPLICABLE EXISTING STATUTES OR BECAUSE MANAGEMENT INTENDS THAT THESE EARNINGS BE PERMANENTLY REINVESTED FOR WORKING CAPITAL AND CAPITAL EXPENDITURE REQUIREMENTS.

The U.S. and non-U.S. components of income before income taxes, and provisions for income taxes are summarized as follows:

	(In thousands)		
	1998	1997	1996
Income Before Income Taxes			
U.S. income	$ 25,811	$ 43,735	$ 31,087
Non-U.S. income	5,083	7,510	12,267
Currency translation (losses)	(487)	(437)	(641)
Eliminations	(2,199)	(14,569)	(6,046)
Income Before Income Taxes	28,208	36,239	36,667
Provisions For Income Taxes			
Current			
Federal	(146)	2,686	9,549
State	(328)	479	1,634
Non-U.S	2,808	3,775	4,948
Total current provision	2,334	6,940	16,131
Deferred			
Federal	7,364	6,595	(900)
State	1,382	1,256	(146)
Non-U.S	(1,147)	(406)	(1,479)
Total deferred provision	7,599	7,445	(2,525)
Provisions for Income Taxes	9,933	14,385	13,606

The following is a reconciliation of income taxes calculated at the U.S. Federal income tax rate of 35% to the provision for income taxes:

Provision for income taxes at statutory rate	9,873	12,684	12,833
State income taxes, net of federal benefit	685	1,128	967
Currency translation	170	153	313
Non-U.S. taxes	(332)	418	(995)
Other--net	(463)	2	488
Provision for income taxes	9,933	14,385	13,606

The components of deferred taxes are as follows:

	(In thousands)	
	1998	1997
Deferred tax assets		
Postretirement benefits	$ 5,979	$ 5,926
Inventory reserves and unrealized profits	4,339	4,379
Vacation allowances	2,032	1,960
Postemployment benefits	526	643
Liability insurance	3,080	3,003
Allowance for doubtful accounts	783	553
Trademarks and license fees	564	520
Warranties	765	2,220
Other	2,195	2,348
Total deferred tax assets	20,263	21,552
Deferred tax liabilities		
Depreciation	(22,119)	(20,728)
Pension	(12,344)	(6,777)

Total deferred tax liabilities	(34,463)	(27,505)
Net deferred taxes	(14,200)	(5,953)

Undistributed earnings of international companies for which U.S. income taxes have not been provided were $71,914,000 at December 31, 1998.

Note 9--Capital Stock

- Common stock, no par value--20,000,000 shares authorized
- Second cumulative preferred voting stock, $10 par value--1,000,000 shares authorized; none issued
- 4-1/2% cumulative preferred stock, $50 par value--100,000 shares authorized; 71,373 shares issued and 49,313 shares ($1,595,000) held in treasury (no activity during the three years ended December 31, 1998)

Common stock activity is summarized as follows:

	Shares Issued	Stock Compensation Trust	Shares In Treasury	Shares Issued (in thousands)	Stock Compensation Trust (in thousands)	Treasury Cost (in thousands)
Balances January 1, 1996	6,719,403		(1,536,646)	$ 8,300		$(68,665)
Management Share Incentive Plan issues	17,050			771		
Management Share Incentive Plan forfeitures	(560)			(25)		
Stock options exercised	13,840			602		
Sale to Stock Compensation Trust		(600,000)	600,000	1,218	$(28,200)	26,982
Purchased for treasury			(601,962)			(28,853)
Balances December 31, 1996	6,749,733	(600,000)	(1,538,608)	10,866	(28,200)	(70,536)
Management Share Incentive Plan forfeitures	(147)			(7)		
Stock options exercised	29,645			1,438		
Purchased for treasury			(184,708)			(11,338)
Balances December 31, 1997	6,779,231	(600,000)	(1,723,316)	12,297	(28,200)	(81,874)
Management Share Incentive Plan issues		16,130		219	758	
Stock options exercised		12,180		75	573	
Purchased for treasury			(105,351)			(7,647)
Balances December 31, 1998	6,779,231	(571,690)	(1,828,667)	12,591	(26,869)	(89,521)

The Mine Safety Appliances Company Stock Compensation Trust was established to fund certain benefit plans, including employee stock options and awards. In 1996, the company sold 600,000 treasury shares, at market value, to the Trust, in exchange for a $28,200,000 promissory note, 8% interest, payable to the company.

The company has a Shareholder Rights Plan under which each outstanding share of common stock is granted one preferred share purchase right. The rights are exercisable for a fraction of a share of preferred stock, only if a person or group acquires or commences a tender offer for 15% or more of the company's common stock. In the event a person or group acquires 15% or more of the outstanding common stock, each right not owned by that person or group will entitle the holder to purchase that number of shares of common stock having a value equal to twice the $225 exercise price. The Board of Directors may redeem the rights for $.01 per right at any time until ten days after the announcement that a 15% position has been acquired. The rights expire on February 21, 2007.

Note 10--Leases

The company leases office space, manufacturing and warehouse facilities, automobiles and other equipment under operating leases expiring at various dates through 2002. Rent expense was $5,846,000 in 1998, $6,751,000 in 1997, and $6,956,000 in 1996. Future minimum rental payments under noncancelable leases are not significant.

Note 11--Earnings per Share

BASIC EARNINGS PER SHARE IS COMPUTED ON THE WEIGHTED AVERAGE NUMBER OF COMMON SHARES OUTSTANDING DURING THE PERIOD. DILUTED EARNINGS PER SHARE INCLUDES THE EFFECT OF THE WEIGHTED AVERAGE STOCK OPTIONS OUTSTANDING DURING THE PERIOD, USING THE TREASURY STOCK METHOD. ANTIDILUTIVE OPTIONS ARE NOT CONSIDERED IN COMPUTING DILUTED EARNINGS PER SHARE.

(In thousands)	1998	1997	1996
Net income	$18,275	$21,854	$23,061
Preferred stock dividends	(49)	(37)	(64)
Income available to common shareholders	18,226	21,817	22,997
Basic shares outstanding	4,430	4,536	4,852
Stock options	17	13	3
Diluted shares outstanding	4,447	4,549	4,855
Antidilutive stock options	3		19

Note 12--Short-Term Debt

Short-term bank lines of credit amounted to $52,834,000 of which $19,877,000 was unused at December 31, 1998. Generally, these short-term lines of credit are renewable annually, and there are no significant commitment fees or compensating balance requirements. Short-term borrowings with banks, which exclude the current portion of long-term debt, were $32,957,000 and $23,762,000 at December 31, 1998 and 1997, respectively. The average month-end balance of total short-term borrowings during 1998 was $31,297,000 while the maximum month-end balance of $38,550,000 occurred at July 31,1998. The average interest rate during 1998 was approximately 8% based upon total short-term interest expense divided by the average month-end balance outstanding, and 7% at year-end.

Note 13--Pensions and Other Postretirement Benefits

THE COMPANY'S NON-CONTRIBUTORY PENSION PLANS ARE ACCOUNTED FOR IN ACCORDANCE WITH STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 87 WHICH REQUIRES USE OF THE PROJECTED UNIT CREDIT COST METHOD TO DETERMINE THE PROJECTED BENEFIT OBLIGATION AND PLAN COST. THE PRINCIPAL U.S. PLAN IS FUNDED IN COMPLIANCE WITH THE EMPLOYEE RETIREMENT INCOME SECURITY ACT (ERISA). IT IS THE GENERAL POLICY TO FUND CURRENT COSTS FOR THE INTERNATIONAL PLANS EXCEPT IN GERMANY AND MEXICO, WHERE IT IS COMMON PRACTICE AND PERMISSIBLE UNDER TAX LAWS TO ACCRUE BOOK RESERVES. A minimum liability is recognized for unfunded defined benefit plans for which the accumulated benefit obligation exceeds accrued pension costs. The amount of the minimum liability in excess of unrecognized prior service cost, net of tax benefit, is recorded as a reduction in shareholders' equity. Non-contributory plan benefits are generally based on years of service and employees' compensation during the last years of employment. Benefits are paid from funds previously provided to trustees or are paid by the company and charged to the book reserves.

The company provides certain health care benefits and limited life insurance for retired employees and their eligible dependents, THE COSTS FOR WHICH ARE ACCOUNTED FOR IN ACCORDANCE WITH STATEMENT OF FINANCIAL ACCOUNTING STANDARDS (SFAS) NO. 106. SFAS NO. 106 REQUIRES RECOGNITION OF RETIREE HEALTH AND LIFE INSURANCE BENEFITS DURING THE EMPLOYEES' SERVICE WITH THE COMPANY.

Information pertaining to defined benefit pension plans and other postretirement benefits plans, PREPARED IN ACCORDANCE WITH STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 132, is provided in the following table.

(In thousands)	Pension Benefits		Other Benefits	
	1998	1997	1998	1997
Change in Benefit Obligations				
Benefit obligations at January 1	$195,314	$193,151	$ 15,283	$ 16,437
Service cost	5,057	4,897	319	303
Interest cost	13,327	13,548	1,089	1,030
Employee contributions	54	136		
Plan amendments			(84)	
Actuarial (gains) losses	10,967	7,206	2,161	(1,393)
Benefits paid	(12,883)	(12,238)	(1,415)	(1,094)
Curtailments		(1,312)		
Settlements	(4,931)	(4,972)		
Currency translation effects	364	(5,102)		
Benefit obligations at December 31	207,269	195,314	17,353	15,283
Change in Plan Assets				
Fair value of plan assets at January 1	296,219	256,722		
Actual return on plan assets	50,725	55,112		
Employer contributions	2,760	2,512	1,415	1,094
Employee contributions	162	235		
Benefits paid	(12,883)	(12,238)	(1,415)	(1,094)
Settlements	(4,931)	(4,972)		
Currency translation effects	(1,162)	(1,152)		
Fair value of plan assets at December 31	330,890	296,219		
Funded Status				
Funded status at December 31	123,621	100,905	(17,353)	(15,283)
Unrecognized transition gains	(4,916)	(5,425)		
Unrecognized prior service cost	2,033	2,449	(76)	
Unrecognized net actuarial (gains) losses	(113,151)	(102,209)	2,215	202
Prepaid (accrued) benefit cost	7,587	(4,280)	(15,214)	(15,081)
Amounts Recognized in the Balance Sheet				
Prepaid benefit cost	46,162	31,091		
Accrued benefit liability	(40,678)	(37,195)	(15,214)	(15,081)
Intangible asset	651	926		
Minimum pension liability adjustments	1,452	898		
Prepaid (accrued) benefit cost	7,587	(4,280)	(15,214)	(15,081)

(In thousands, except percents)	Pension Benefits 1998	Pension Benefits 1997	Other Benefits 1998	Other Benefits 1997
Acturial Assumptions at December 31)				
Discount rate	3.5-9%	3.5-8%	6.75%	7%
Expected return on plan assets	7.5-9%	8-9%		
Rate of compensation increases	1.5-6%	2.5-6%		
Plans with Accumulated Benefit Obligations in Excess of Plan Assets				
Projected benefit obligations	$ 40,825	$ 34,833		
Accumulated benefit obligations	37,214	32,123		
Plan assets	0	0		

Components of Net Periodic Benefit Cost (Credit)	Pension Benefits 1998	Pension Benefits 1997	Pension Benefits 1996	Other Benefits 1998	Other Benefits 1997	Other Benefits 1996
Service cost	$ 5,057	$ 4,897	$ 5,243	$ 319	$ 303	$ 408
Interest cost	13,327	13,548	13,892	1,089	1,030	1,152
Expected return on plan assets	(22,002)	(20,478)	(17,562)			
Amortization of transition obligation/(asset)	(729)	(801)	184			
Amortization of prior service cost	387	405	361	(8)		
Recognized net actuarial (gains) losses	(2,391)	(2,726)	(1,986)	8		
Settlement gain	(3,993)	(4,541)				
Curtailment gain		(1,185)				
Net periodic benefit cost (credit)	(10,344)	(10,881)	132	1,408	1,333	1,560

For measurement purposes, a 5% annual rate of increase in the costs of covered health care benefits was assumed for 1998, decreasing to 4% for the year 1999 and thereafter. A one-percentage-point change in assumed health care cost trend rates would have increased or decreased the other postretirement benefit obligations and current year plan expense by approximately $1 million and $100,000, respectively.

Expense for defined contribution pension plans was $3,113,000 in 1998, $3,185,000 in 1997, and $3,028,000 in 1996.

Note 14--Stock Plans

The Management Share Incentive Plan permits the granting of restricted stock awards and stock options to eligible key employees through March 2008. The 1990 Non-Employee Directors' Stock Option Plan provides for annual grants of stock options to eligible directors. As of December 31, 1998, there were 557,286 shares and 33,300 shares, respectively, reserved for future grants pursuant to these plans.

Stock options are generally granted at market value option prices and expire after ten years (limited instances of option prices in excess of market value and expiration after five years). Restricted stock awards are granted to employees without payment to the company in consideration of services to be performed in ensuing five-year periods. THE COMPANY APPLIES ACCOUNTING PRINCIPLES BOARD OPINION 25 AND RELATED INTERPRETATIONS IN ACCOUNTING FOR THE PLANS. ACCORDINGLY, NO COMPENSATION COST IS RECOGNIZED FOR STOCK OPTION GRANTS. COMPENSATION COST FOR RESTRICTED STOCK AWARDS IS MEASURED BY THE MARKET VALUE OF THE SHARES WHEN AWARDED AND IS AMORTIZED BY CHARGES TO OPERATIONS OVER THE PERIOD THAT THE EMPLOYEE PROVIDES THE SERVICE. Restricted stock awards of 16,130 shares (fair value of $60.56 per share) were granted in 1998. Restricted stock awards expense charged to operations was $368,000 in 1998, $436,000 in 1997, and $350,000 in 1996. The company's net income and earnings per share would not be significantly affected if compensation cost for stock option grants was determined based on fair value at grant dates consistent with the method provided in Statement of Financial Accounting Standards No. 123.

A summary of the two stock option plans follows:

	1998 Shares	1998 Weighted-Average Exercise Price	1997 Shares	1997 Weighted-Average Exercise Price	1996 Shares	1996 Weighted-Average Exercise
Outstanding at beginning of year	55,001	$50.63	58,365	$46.77	46,360	$46.18

Granted	29,084	61.86	27,451	56.80	31,455	46.37
Exercised	(12,180)	53.18	(29,645)	48.51	(13,840)	43.49
Forfeited			(1,170)	56.64	(5,610)	47.50
Outstanding at end of year	71,905	54.74	55,001	50.63	58,365	46.77
Options exercisable at year-end	71,905		55,001		58,365	

Options outstanding at December 31, 1998 have a weighted-average remaining contractual life of approximately 7.9 years and an exercise price range of $40.43 to $60.56, except for 2,500 shares at $71.63.

Summary of Selected Financial Data

SUMMARY OF OPERATIONS	1998	1997	1996	1995	1994
(In thousands, except as noted)					
Net sales	$491,181	$494,324	$500,985	$487,668	$459,607
Other income	6,026	6,802	7,141	5,219	6,136
Cost of products sold	311,672	302,225	307,112	296,845	286,725
Selling, general and administrative	130,335	134,444	133,071	138,187	124,714
Depreciation and amortization	22,398	23,233	23,644	21,030	19,200
Interest expense	3,258	2,781	1,595	1,730	2,224
Currency exchange losses	315	40	735	1,233	3,968
Unusual items	1,021	2,164	5,302	730	3,086
Taxes on income	9,933	14,385	13,606	14,220	10,497
Net income	18,275	21,854	23,061	18,912	15,329
Basic per common share (in dollars)	4.11	4.81	4.74	3.32	2.58
Diluted per common share (in dollars)	4.10	4.80	4.74	3.32	2.58
Dividends paid per common share (in dollars)	1.33	1.24	1.10	1.06	.94
Weighted average number of common shares outstanding--basic	4,430	4,536	4,852	5,681	5,921

YEAR-END POSITION					
Working capital	$119,203	$116,373	$136,593	$156,641	$166,494
Working capital ratio	2.1	2.1	2.5	3.2	3.4
Property, at cost	371,687	357,422	349,577	342,412	323,317
Total assets	456,716	437,153	422,515	416,362	421,575
Long-term debt	11,919	12,270	13,278	14,746	16,564
Common shareholders' equity	241,743	240,004	239,738	252,174	264,378
Equity per common share (in dollars)	55.21	53.86	51.99	48.66	45.45

QUARTERLY FINANCIAL INFORMATION (UNAUDITED)
(In thousands, except earnings per share)

	1998					1997				
	Quarters					Quarters				
	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Net sales..................	$122,145	$124,168	$114,928	$129,940	$491,181	$113,473	$129,245	$120,602	$131,004	$494,324
Gross profit...............	44,918	44,713	42,770	47,108	179,509	43,074	48,883	48,042	52,100	192,099
Net income.................	5,488	4,802	3,073	4,912	18,275	3,604	5,055	5,832	7,363	21,854
Basic earnings per share....	1.23	1.08	.69	1.12	4.11	.78	1.10	1.29	1.65	4.81
Diluted earnings per share..	1.23	1.07	.69	1.11	4.10	.78	1.10	1.29	1.64	4.80

EXHIBIT 21

MINE SAFETY APPLIANCES COMPANY

The registrant's present affiliates include the following:

Name	State or Other Jurisdiction of Incorporation
Compania MSA de Argentina S.A.	Argentina
MSA (Aust.) Pty. Limited	Australia
MSA-Auer Sicherheitstechnik Vertriebs GmbH	Austria
MSA Export Limited	Barbados
MSA Belgium NV	Belgium
MSA do Brasil Ltda.	Brazil
MSA Canada	Canada
MSA de Chile Ltda.	Chile
Wuxi-MSA Safety Equipment Co.	China
Rose Manufacturing Company	Colorado
MSA International, Inc.	Delaware
MSA de France	France
Auergesellschaft GmbH	Germany
MSA-Auer Safety Technology	Hungary
MSA Italiana S.p.A.	Italy
MSA Japan Ltd.	Japan
Better Breathing, Inc.	Massachusetts
MSA de Mexico, S.A. de C.V.	Mexico
MSA Nederland, B.V.	Netherlands
MSA del Peru S.A.	Peru
MSA-Auer Polska Sp. z o.o.	Poland
MSA (Britain) Limited	Scotland
MSA S.E. Asia Pte. Ltd.	Singapore
MSA Africa (Pty.) Ltd.	South Africa
MSA Espanola S.A.	Spain
AB Tegma	Sweden
MSA (Switzerland) Ltd.	Switzerland
Aritron Instrument A.G.	Switzerland
MSA Zimbabwe (Pvt.) Limited	Zimbabwe

The above-mentioned affiliated companies are included in the consolidated financial statements of the registrant filed as part of this annual report. The names of certain other affiliates, which considered in the aggregate as a single affiliate would not constitute a significant affiliate, have been omitted.

EXHIBIT 23

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No 33-22284) of the 1987 Management Share Incentive Plan, the Registration Statement on Form S-8 (No 33-43696) of the 1990 Non-Employee Directors' Stock Option Plan and the Registration Statement on Form S-8 (No. 333-51983) of the 1998 Management Share Incentive Plan of Mine Safety Appliances Company of our report dated February 19, 1999, appearing on page 16 of the 1998 Annual Report to Shareholders of Mine Safety Appliances Company, which is incorporated in this Annual Report on Form 10-K. We also consent to the incorporation by reference of our report on the Financial Statement Schedule, which appears on page F-1 of this Form 10-K.

PRICEWATERHOUSECOOPERS LLP

600 Grant Street
Pittsburgh, PA 15219
March 25, 1999

THIS SCHEDULE CONTAINS SUMMARY FINANCIAL INFORMATION EXTRACTED FROM DECEMBER
1998 FINANCIAL STATEMENTS AND IS QUALIFIED IN ITS ENTIRETY BY REFERENCE TO SUCH
FINANCIAL STATEMENTS

12-MOS
DEC-31-1998
DEC-31-1998
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13,936
97,854
(3,004)
85,491
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(207,126)
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497,207
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28,208
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18,275
4.11
4.10