The whispering nozzle. Workshops where heating torches are used do not have to be noisy. These new FB-A heating nozzles for acetylene are much quieter than conventional heating nozzles. The noise level produced by heating duties carried out with these nozzles is below the 85 dB mark. There is no need, therefore, to wear ear protection.
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The business year 1978, the subject of this annual report, was a good one for Messer Griesheim. For the first time ever, world sales exceeded DM 1,000 million. The company owes its success to the efforts and commitment of all 6,953 employees.

Messer Griesheim products are manufactured in 15 countries. Against the background of the increasingly international character of the company’s activities, the close co-operation between the development departments and works of the German parent company on the one hand and the European and overseas subsidiaries on the other proved most fruitful. New processes and products were put on the market. With economic growth still generally sluggish, increasing importance is attached to research and development.

This report is supplemented by a “day by day” account of the company’s activities and achievements during 1978 in the form of a diary of events.

We should like to thank our business friends and colleagues for their co-operation, which is the very basis on which we hope to make further progress in 1979.

Hans Messer
Chairman of the Board of Executive Directors
Stockholders, Supervisory Board, Board of Executive Directors, Executives

Stockholders

Hoehst Aktiengesellschaft
Messer Industrie GmbH

Thea Messer
Honorary Chairwoman of the company

Supervisory Board

Willi Hoerkens, Chairman
Theo Geuss, Vice-Chairman
Horst Burgard
Jürg G.Engi
Hermann Günkel
Dietrich Hoffmann
Karl-Georg Istan
Karl Lips
Hermann Niedlich
Elisabeth Nitsche
Hans Reintges
Hans Schlachter

Board of Executive Directors

Hans Messer, Chairman
Gerd Grabhorn
Hans H. Kampy
Joseph H. Van Riet

Executives

Klaus Baumgartner
Alexander Decker
Paul-Otto Gehlhoff
Hans Hermann Grube
Hans Joachim Henning
Wolfgang Hromadka
Hubert Ludwig
Hans Scheuffelen

Fields of activity

Welding and Cutting Products
Oxy-fuel plant and equipment
Steelworks equipment
Gas supply equipment
Acetylene plants
Plastics welding equipment
Medical and special-purpose equipment
Flame cutting machines
and guiding machines
for cutting processes
Computer systems for data carriers
Oxy-fuel machinery for steelworks
Continuous welding lines
Stick electrodes, welding rods,
wire, flux-cored
welding wire, metal powder,
soldering sticks, fluxes
Resistance welding machines
Microwave welding equipment
Thyristor weld timers
Measuring and monitoring equipment
Gas-shielded welding sets and
plasma processes
Plasma cutting plants
Welding power sources, fixtures
Submerged arc welding equipment
Planning and supply of production systems
Welding accessories

Industrial Gases

Oxygen, Nitrogen, Hydrogen
in pipelines

Oxygen, nitrogen, gaseous and liquid,
hydrogen, argon
and gas mixtures
rare and high-purity gases
Gases for respiratory
and medical purposes
Gas mixtures
Hydrocarbons
Laboratory gases and accessories
Gas re-purifying systems
Special fittings
Analysis equipment

Cryogenic plant and equipment
for the application of gases
and refrigeration
Superinsulated vessels

Development and consultancy services for gas applications.
Messer Griesheim International

In 1978 Messer Griesheim sales, including those subsidiaries in which the parent company has an interest of 50% or more (excluding reciprocal business) rose by 8.3% to DM 1,055 million. In terms of Deutschmarks, business has increased by 90% in 5 years, whereby the continuing upward valuation of the Deutschmark during this period should also be taken into account.

In virtually every country, the welding and cutting products sector suffered from the weak demand for capital goods. This affected the competition for markets and the employment situation. Against this background, the development of business at Messer Griesheim was stable, thanks in particular to the wide spectrum of customers served by the company. The universal range of machinery, equipment and filler materials for welding and cutting processes coupled with the company's ability to plan and supply complete production systems represents a worthwhile advantage for the user.

In the industrial gases field, too, Messer Griesheim offers a well-balanced range of products and versatile services. We were able to counter the unsatisfactory situation with regard to sales of gases to the steel-producing industry and important branches of the steel-processing industry with the introduction of new technical and scientific applications for gases and cryogenic liquefied gases. As a result, 1978 proved overall to be a year of growth once more.

The Messer Griesheim Group, i.e. Messer Griesheim GmbH*) and its domestic subsidiaries, accounted for 80% of world sales. Group sales increased by 6.6% to DM 839 million. Sales in the home market rose by 8.0% to DM 707 million. At DM 133 million, exports remained on a par with the previous year.

Foreign sales totalled DM 349 million, comprising DM 133 million exports from the German works plus net sales of DM 216 million achieved by the foreign subsidiaries, and therefore accounted for one-third of world sales. Continued efforts were made to promote our overseas activities.

At the end of the year, the company employed 6,983 persons throughout the world, 5,394 in West Germany and 1,599 abroad. The increase in the number of employees was greater abroad than at home.

*) GmbH = Company with limited liability
Messer Griesheim Group Employees

At the end of the year, Messer Griesheim GmbH employed 5,277 persons and the domestic subsidiaries a further 77 persons. Whereas the number of employees has scarcely changed over the past five years, increasing numbers of apprentices have been taken on since 1975. There was a fall in the number of foreign workers employed in the German works. Personnel expenditure — particularly ancillary personnel costs — continued to increase.

The net product gives a useful impression of the benefits to the economy produced by a company. It is calculated from the total operating performance, i.e. from the adjusted net sales — less third-party inputs such as consumption of materials, depreciation and other bought-in goods and services. The chart shows a breakdown of the net product. Of the total figure, personnel expenditure (including compulsory social security contributions and taxes) accounts for 67%. The public sector also receives 17% of the net product in the form of taxes on income and property. The provisions for pensions and allocations to the Belegschaftshilfe were made in accordance with the facilities afforded under current fiscal regulations. After deducting their additional tax liabilities, the stockholders ploughed most of the available net result back into Messer Griesheim GmbH as an increase of capital.

The election of representatives for the Supervisory Board took place for the first time in accordance with the Co-determination Law (Mitbestimmungsgesetz) of 1977. The election procedure was very involved and costly. The poll was of the order of 60%. The turnout was higher for the election of the 1st Works Council representatives in S1 of the company’s works. Here, 80% voted. Those Works Council representatives who had been elected for the first time were invited to attend induction seminars.
Messer Griesheim Group
Financial Statement

The following statement encompasses those domestic subsidiaries in which Messer Griesheim GmbH has an interest of 50% or more (see "Associated Companies", page 15).

Following the increase in capital stock by DM 18.0 million and the allocation of DM 1.0 million to the free reserves from the net income for the year, the stockholders' equity increased to DM 164.2 million, i.e. from 22.9% to 25.7% of the balance sheet total of the Messer Griesheim Group. A further increase in capital stock is planned for 1979. The stockholders' equity and long-term liabilities account for 72% of the balance sheet total and cover 99.2% of the fixed assets and inventories.

Investments totalled DM 82.7 million, of which DM 61.5 million (74%) comprised investments in tangible fixed assets and DM 21.2 million in financial investments (26%). Depreciation and disposals accounted for DM 57.6 million.

The additions in respect of our investments in financial assets were due to the expansion of activities of the foreign subsidiaries and associated companies. (For more detailed comments, please refer to "Associated Companies").

With sales rising by 7%, the increase in inventories by DM 1.1 million was less than proportional; trade accounts receivable remained virtually unchanged from the previous year. The liquid assets were cut back to DM 37.4 million.

Receivables and liquid assets exceeded the short-term liabilities by 24%. The sound liquidity basis permitted a reduction of the long-term liabilities.

The gross cash flow increased to DM 175.2 million.
Balance sheet structure

<table>
<thead>
<tr>
<th>Assets %</th>
<th>1977</th>
<th>1978</th>
<th>1977</th>
<th>Liabilities and stockholders' equity %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receivables and liquid assets</td>
<td>31,0</td>
<td>27,4</td>
<td>5,9</td>
<td>5,0 Retained earnings</td>
</tr>
<tr>
<td>Inventories</td>
<td>20,3</td>
<td>20,3</td>
<td>46,3</td>
<td>49,5 Short-term liabilities</td>
</tr>
<tr>
<td>Fixed assets and investments</td>
<td>48,7</td>
<td>52,3</td>
<td>25,7</td>
<td>22,9 Long-term liabilities</td>
</tr>
<tr>
<td>Stockholders' equity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table of finance

<table>
<thead>
<tr>
<th>Use of funds</th>
<th>DM million</th>
<th>Source of funds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stockholders' equity</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>82,7</td>
<td>Depreciation and disposals of fixed assets and investments</td>
</tr>
<tr>
<td>Reduction of liabilities</td>
<td>20,2</td>
<td>Reduction of current assets</td>
</tr>
<tr>
<td>Increase of retained earnings</td>
<td>5,9</td>
<td></td>
</tr>
</tbody>
</table>
### Structure of expenses

<table>
<thead>
<tr>
<th>%</th>
<th>1978</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income for the year</td>
<td>4.6</td>
<td>4.4</td>
</tr>
<tr>
<td>Taxes on income and property</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Sundry expenses less income</td>
<td>30.9</td>
<td>31.0</td>
</tr>
</tbody>
</table>

**Personnel expenditure**

Personnel expenditure, including the increased provisions for pensions and a grant of DM 2.5 million to the Belegschaftshilfe (staff assistance fund), rose by 2.2% to DM 243.8 million, corresponding to 28.7% of the total operating performance.

Expenditure on technical development accounted for DM 35.9 million, representing 4.2% of the total operating performance. This figure includes expenditure on research, development, design and applications technology. Licensing activities once more produced a positive result.

### Associated companies

**MESSER GRIESHEIM GMBH, Frankfurt (Main)**

<table>
<thead>
<tr>
<th>Domestic</th>
<th>Foreign</th>
</tr>
</thead>
</table>
| **MESSER GRIESHEIM GROUP**
Hüttenauerstoff GmbH, Düsseldorf
C: DM 20,000,000
| Messer Griesheim International AG,
Chur/Switzerland
C: SF 5,000,000

**Siegfried Croytherm GmbH,**
Kirchen-Euteneun/Sieg
C: DM 1,400,000
| Sauerstoffwerk Lenzburg AG,
Lenzburg/Switzerland (**)**
C: SF 1,000,000

**Flaglerich GmbH, Frankfurt/Main**
C: DM 100,000
| Leonarc Ges. m. b. H. (* two **)

**Oxytechnik Gesellschaft für System-technik mbH, Eschborn/Taunus**
C: DM 20,000
| Leonstein/Austria
C: S 600,000

**Sauerstoff Union GmbH, Frankfurt/Main**
C: DM 20,000
| Messer Griesheim Ltd., Seaton Delaval,
Northumberland/UK
C: £ 200,000

**Oxyas-Hüttenauerstoff GmbH, Saarbrücken**
C: DM 2,000,000
| Messer Griesheim Nederland B.V.,
Amsterdam/Netherlands
C: G 1,000,000

**Sauerstoff und Stickstoffrohltungs-gesellschaft mbH, Düsseldorf**
C: DM 1,000,000
| Messer Griesheim Austria Ges. m. b. H.,
Gumpoldskirchen/Austria
C: S 35,000,000

**SIG Sauerstoffwerk Frankfurt GmbH,**
C: DM 600,000
| Messer Griesheim France S.A.,
Eawy/France
C: F 1,500,000

**Cryocet Tief- und Tiefentemperatur-Technik GmbH, Pullach**
C: DM 100,000
| Messer Griesheim Norwak Teknik
Burens A/S,
Oslo/Norway
C: Kr 2,000,000

**Busch Gase GmbH, Bad Hönningen**
C: DM 100,000
| Schweizischtechnik AG, Zürich/Switzerland
C: SF 800,000

**Belegschaftshilfe Messer Griesheim GmbH (**)**, Frankfurt/Main**
C: DM 20,000
| Carborund Messer Griesheim
Gasen Industriales S.A.*),
Barcelona/Spain
C: Peso 420,000,000

| Capital stock: 120,000,000 DM |
|---------------------|---------------------|
| 1976: DM 649.1 million | 1977: DM 803.4 million |

Total operating performance: 1976: DM 649.1 million  
1977: DM 803.4 million

### Industrial gases

- Welding and cutting products

---

**Foreign**

- **Messer Griesheim Industries, Inc.,**  
  Wilmington, Delaware/USA
  C: $ 10,000,000

- **Burdett Oxygen Company, Norristown, Pennsylvania/USA**
  C: $ 8,000,000

- **Naxor, Inc.,**  
  Hopkinsville, Kentucky/USA
  C: $ 300,000

- **C-R-O Inc.,**  
  Menomonie, Wisconsin/USA
  C: $ 2,000,000

- **Nippon Messer Griesheim Ltd.,**  
  Tokyo/Japan
  C: Yen 400,000

- **Likos AG, Zürich/Switzerland**
  C: SF 67,000,000

- **Aigars S.A.R.L., Paris/France**
  C: F 53,241,500

- **L'Oxyhydrique Internationale S.A.,**  
  Brussels/Belgium
  C: BF 114,000,000

- **Fedgas (Pty.) Ltd.,**  
  Aldo, Transvaal/South Africa
  C: Rand 4,900,000

- **Welding Advisory Services**  
  (Pty.) Ltd., Johannesburg/South Africa
  C: Rand 100,000

- **Aigars Nederland B.V.,**  
  Den Haag/Netherlands
  C: G 10,000,000

- **Aigars S.A., Barcelona/Spain**
  C: Pes 20,000,000
The Messer Griesheim subsidiaries and associated companies increased their sales by 16% to DM 296 million. The net sales, i.e. excluding intercompany transactions, of the production and marketing operations totalled DM 15 million in Germany and DM 216 million abroad. The investments of DM 115 million in subsidiaries and associated companies are shown in the balance sheet of Messer Griesheim GmbH.

**Domestic associated companies**

- **Hüttenauerstoff GmbH, Düsseldorf**
  - Capital stock: DM 20 million
  - Holdings: 100%
  - This company has leased its production plants and pipelines for oxygen and nitrogen to Messer Griesheim GmbH. The development of business fulfilled expectations.

- **Siegl Cryotherm GmbH, Kirchen-Eutenweiler/Sieg**
  - Capital stock: DM 1.4 million
  - Holdings: 100%
  - The rest of the shares (70%) were taken over. This company produces special vessels for cryogenic and liquefied gases. The company’s sales and profit were satisfactory.

- **Oxynex GmbH, Bünde**
  - Capital stock: DM 2 million
  - Holdings: 75%
  - This company, in which the Saarbergwerke AG has holdings of 25%, has leased its production plants and gas supply pipelines to Messer Griesheim GmbH on a long-term basis. These facilities are used for supplying the steel-producing and steel-processing industries in Saarland with oxygen and nitrogen.

- **Sauerstoff- und Stickstoffrohrleitungsgesellschaft mbH, Düsseldorf**
  - Capital stock: DM 200,000
  - Holdings: 100%
  - The company has built up an international reputation as a supplier of complete production systems. Results were good.

- **Oxysaar Hüttenauerstoff GmbH, Saarbrücken**
  - Capital stock: DM 2 million
  - Holdings: 75%
  - This company, in which the Saarbergwerke AG has holdings of 25%, has leased its production plants and gas supply pipelines to Messer Griesheim GmbH on a long-term basis. These facilities are used for supplying the steel-producing and steel-processing industries in Saarland with oxygen and nitrogen.

- **Sieg Griesheim GmbH, Bad Honningen**
  - Capital stock: DM 6 million
  - Holdings: 50%
  - The company has been supplying gases in the Rhein/Main area for 25 years. The Lonza Werke GmbH has a 50% interest in the company.

- **Buse Gas GmbH, Bad Honningen**
  - Capital stock: DM 0.1 million
  - Holdings: 50%
  - A holding in this company, which was established by the Kohlen- und Stoffwerke R. Buse, was acquired at the end of 1978, thus providing a wider basis for Messer Griesheim’s business with welding-grade carbon dioxide.

The annual financial statements of Messer Griesheim GmbH and its subsidiaries Hüttensauerstoff GmbH, Oxysaar Hüttensauerstoff GmbH, and, for the first time, Oxynex GmbH, for the year ending 31 December 1978, and the consolidated annual statement of Hoechst AG. Relationships with other companies associated with Hoechst are limited to the provision of goods and services on a normal commercial basis.

Messer Griesheim GmbH has profit and loss transfer agreements with the following companies:

- **Hüttensauerstoff GmbH, Fulldraht GmbH**
- **Oxynex GmbH, für Systemtechnik mbH, Sauerstoff Union GmbH**
- **Oxysaar Hüttensauerstoff GmbH, Sauerstoff- und Stickstoffrohrleitungsgesellschaft mbH**
- **Cryoteck-Tief- und Tiefsttemperatur-Technik GmbH**
Affiliates abroad

Continued efforts were made to expand production and marketing activities. A number of companies increased their capital stock in order to finance investments. Overall, the results achieved were satisfactory.

Messer Griesheim International AG, Chur/Switzerland
Capital: SF 5 million
Holdings: 100%

This organisation has holdings in companies which operate in the fields of industrial gases and the production of welding electrodes.

Messer Griesheim Ltd., Seaton Delaval/UK
Capital: £ 200,000
Holdings: 100%
A satisfactory result was achieved once more although sales of welding and cutting products were adversely affected by the recession among important branches of industry served by the company.

Messer Griesheim Nederland B.V., Amsterdam/Netherlands
Capital: G 1 million
Holdings: 100%
The sales range comprises welding and cutting products as well as specialty gases. Sales of welding and cutting products suffered as a result of the continued decline in demand. The result was not satisfactory.

Messer Griesheim Austria
Ges. m. b. H., Gumpoldskirchen/Austria
Capital: S 35 million
Holdings: 100%
The company operates in both fields of activity of the parent company and is responsible for the export markets of Albania, Bulgaria, Yugoslavia, Roumania, Czechoslovakia and Hungary. The expansion of business proceeded at a rapid pace.

The new air separation plant, due to go on stream in the middle of 1979, will provide a wider basis for the production of oxygen and nitrogen.

Messer Griesheim France S.A., Evry/ France
Capital: F 1.5 million
Holdings: 100%
The sales range comprises the welding and cutting products of the parent company. A new sales branch was opened in Rouen, thus extending the marketing and after-sales service network. Sales exceeded the previous year's result.

Messer Griesheim Norsk Teknisk Bureau A/S, Oslo/Norway
Capital: Kr 2 million
Holdings: 100%

This company, acquired in 1978, markets welding and cutting products.

Schweiztecnik AG, Zürich/Switzerland
Capital: SF 0.8 million
Holdings: 55%
The company operates in the fields of welding and cutting technology and markets specialty gases.

Despite the stagnating economic situation in Switzerland, business was satisfactory.

Carburos Messer Griesheim, Gases Industriales S.A., Barcelona/Spain
Capital: Pts 420 million
Holdings: 33 1/3%

This company, in which the Sociedad Española de Carburos Metalicos S.A. and Hoechst Iberica S.A. have holdings, supplies the chemical industry in the Tarragona area with oxygen and nitrogen by pipeline. Sales failed to fulfil expectations.

Messer Griesheim do Brasil Ltda., São Paulo/Brazil
Capital: NCr $ 25 million
Holdings: 75%
The company manufactures and markets machinery and equipment for welding and cutting as well as weld filler materials. Business fulfilled expectations. Hoechst do Brasil Quimica e Farmaceutica S.A. holds 25% of the capital stock.

Messer Griesheim de Mexico S.A., Mexico D.F./Mexico
Capital: Mex. $ 30 million
Holdings: 75%
The company, in which Quimica y Medicamentos Hoechst de Mexico S.A. has holdings, gained market successes with its range of gas- shielded welding equipment, welding electrodes and resistance welding machines. Sales and profit were increased.

Messer Griesheim de Venezuela S.A., Caracas/Venezuela
Capital: Bs 1.8 million
Holdings: 50%
The excellent business trends of this company, in which Hoechst Remedía S.A. holds a 50% interest, were maintained in 1978. Production capacity was expanded for welding electrodes and after-sales service facilities were extended for welding machinery and equipment.

Messer Griesheim Industries, Inc., Wilmington, Delaware/USA
Capital: $ 10 million
Holdings: 100%
The capital stock was increased by $ 3 million to $ 10 million. The funds were used to increase the capital of the two subsidiaries Burdett Oxygen Company and C-R-O Inc.

Burdett Oxygen Company, Norristown/USA
Capital: $ 8 million
Holdings: 100% MG Industries Inc.
The capital stock was increased by $ 2 million to $ 8 million. The distribution facilities for gases were extended and the regional expansion of the distribution network was continued. The trading result was satisfactory.

C-R-O Inc., Menomonee Falls, Wisconsin/USA
Capital: $ 2 million
Holdings: 100% MG Industries Inc.
The company, which manufactures flame cutting machines and markets welding electrodes, was able to maintain its excellent trading results. Work was started on the construction of an electrode factory.
Day by day, 1978

Nippon Messer Griesheim Ltd.,
Tokyo/Japan
Capital: Yen 400 million
Holdings: 75%
The company was established together with Hoechst Japan Ltd. at the end of 1978. It operates in the field of welding and cutting products, some of which are manufactured in Japan.

L'Oxydrique Internationale S.A.,
Brussels/Belgium
Capital: BF 114 million
Holdings: 94% Likos AG
The company operates in Belgium in the fields of industrial gases and welding and cutting technology.

Fedgas (Pty.) Ltd., Afrode/South Africa
Capital: Rand 4.5 million
Holdings: 80% Likos AG
The company, in which the South African organisation Sasol holds an interest, expanded its production and marketing facilities for industrial gases and for welding and cutting products. Sales and profit remained positive in 1978, too. Fedgas now has a 60% interest in the distributing agency for Messer Griesheim special electrodes, Welding Advisory Services (Pty.) Ltd., Johannesburg.

Airgas S.A.R.L., Paris/France
Capital: F 53.2 million
Holdings: 100% Likos AG
The company produces and distributes gases and cryogenic liquefied gases. Its activities are mainly concentrated in the Paris, Lyons and Marseilles areas. A new industrial gas production plant near Lyons went on stream. The initial demand was increased from F 40 million to F 53.2 million. The trading result did not fulfill expectations.

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Airgas Nederland B.V., Den Haag/Netherlands
Capital: G 25 million
Holdings: 75% Likos AG
Sales of oxygen and nitrogen were sluggish on account of the unsatisfactory situation in the steel industry. Liquefied gases are marketed through W. A. Hoek's Machinen en Zuurstoffabriek, Schiedam. The two companies are linked by reciprocal holding arrangements.

A diary of events:
Every day, the products and services of Messer Griesheim are used all over the world. We present a day-by-day report of the year's activities.

18th January
The first EUROMAG® 16 gas-shielded welding set to be manufactured in Mexico is tested out at VW de Mexico

23rd January
GRINOX® 10 electrode now available in Ecuador, too
Messer Griesheim de Mexico manufactures welding and cutting plants and equipment under licence to the stringent quality specifications of the parent company. Safe, dependable products are the result — and that is why VW de Mexico is a good customer of Messer Griesheim.
Staveleys Ltd. of Atherton, Manchester, can now cut stainless steel free from distortion with the new WIPC 500 underwater plasma cutting plant. The plasma torch is steered by a STATOSEC K 6 photo-electrically controlled guiding machine. The cutting table, which is filled with water, has air chambers which, filled with compressed air, permit speedy adjustment of the water level to suit the thickness of the material to be cut.

Recycling of used tyres: Low temperature shredder plant put into operation

A low temperature shredding plant is put into operation at VEM Erz- und Stahlgesellschaft mit beschränkter Haftung, Essen, for recycling used tyres. The refrigerative properties of liquid nitrogen embrittles the tyre material so that the shredder process that follows requires less energy and reduces wear and tear of the equipment. The resultant granulate is a valuable raw material. It can be used for surfacing sports fields or, alternatively, ground to an even finer rubber powder that can be used as a regenerated material in new rubber compounds.

From today, up-to-date information can be provided at any time for day to day accounting

We wanted to be on the ball. We achieved this aim with the development and introduction of a new visual display system. The accounts are entered through a visual display unit in the conversational mode of the computer. As a result, up-to-date information can be retrieved at any time — and the cost of processing accounts is reduced.

The integrated microfilming system minimizes paper work and record storage space.

Another research breakthrough: Sublimation cutting of aluminium

The new mobile CO₂ gas laser EUROLAS 1000 cuts 1.2 mm thick aluminium sheets at a feed rate of 600 mm per minute. The process involves a so-called sublimation cut, i.e. the material vaporizes and the cutting kerf remains extremely narrow. This means that it is now possible to use the laser for cutting aluminium to shape, for instance in the aircraft industry.

The test run is convincing. The newly delivered V 11 selective scarfing machine meets every requirement. The scarfed slab surfaces are clean, smooth and free from flaws. And there is no trouble from fumes. Gone are the days of dirty, strenuous hand scarfing. Now, the operator is seated in an air-conditioned cabin.

At work on the Itaipu construction site: “Plauí” the arc welder

The machines and vehicles used in the construction of the world’s biggest hydroelectric power station in Brazil are subjected to severe wear and tear. Raimundo Rodrigues de Souza, nicknamed “Plauí”, is one of the repair welders whose job is to renew worn metallic surfaces and weld broken components together again — using Messer Griesheim electrodes.
Keen interest was shown in the CO₂ laser on display. Mounted on a photo-electrically controlled guiding machine, it can cut thin metal sheets as well as plastics, leather, wood, rubber, textiles, ceramics, quartz, porcelain and asbestos.

In common with other African states, Kenya is expanding its industrial activities. Welding and cutting equipment is required in its car works, fabrication shops, boiler and pressure vessel works, and in the craft industries. To serve this growing market, Mackenzie (Kenya) Ltd., Messer Griesheim’s agents in Nairobi—have set up a new technical advisory and after-sales service depot.

At the South African subsidiary, another step has been taken towards integrating the company’s world-wide organisation. Our ultimate objective is to bring all hardware and software used throughout the company into line with each other so that business operations can be conducted with maximum speed and efficiency.

Erhard Albrecht is explaining to Ermanno Faedi and Enrico Rigamonti of the Italian gas company SIAD in Bergamo some of the finer points in the dossier he has prepared on the use of oxygen in fish-farming. The prospect of more efficient fish production through intensive fish-farming methods is attractive not only in the industrialised countries. The countries of the Third World are also showing great interest. With this new technique, they hope to remedy the almost chronic lack of protein in the staple diet of the population.

The fully transistorized welding power source MULTITIG® is used in research tests to TIG-weld the first ripple-free, virtually invisible butt weld. This weld quality is achieved on the workpiece, a copper-nickel tube, with a high-precision drive, correct selection of welding parameters and a welding program which runs fully electronically.
Messer Griesheim do Brasil at the São Paulo Trade Fair

The Annual Report for 1977 is presented to the press

On a stand that covers an area of 320 square meter, Messer Griesheim do Brasil exhibits welding and cutting machinery and equipment manufactured in Brazil. All products on display — like the flame cutting machine shown here — are put through their paces in practical demonstrations. Weld filler materials, for the production of which Messer Griesheim do Brasil will shortly be opening a new works, are another focal point of the stand.

Senator Dr. Hans Messer, Chairman of the Board of Executive Directors, presents his report to the press on the business developments of the preceding year. The company was successful in seeing through its business policies even in the face of growing world-wide economic difficulties. "In 1978, we expect world sales to exceed DM 1,000 million for the first time. The shareholders intend to increase the capital stock again in 1978."

Burdett supplies Western Electric with high-purity nitrogen by pipeline

Burdett Oxygen Co. starts to supply this electronics company with nitrogen by pipeline from the new air separation plant in Reading, Pennsylvania, USA. The plant, which supplies liquid nitrogen, liquid oxygen and argon, has been used to full capacity since August 1978.

Tiptop performance

The new telecommunications tower of the Federal Post Office in Frankfurt is 331 meter high. The tubular steelwork at the top is welded with GRICON® electrodes from Messer Griesheim: GRICON® 41 (OMEPA) for the root weld (first layer) and GRICON® 43 (KRONA) for the intermediate and top layers. The aerials will be erected here later.

Flame cutting machine undergoes acceptance test at C-R-O

This subsidiary company develops and builds flame cutting machines at its works in Menomonee Falls, Wisconsin. The product range extends from small hand cutting machines to large-scale NC systems. The acceptance test convinces the customer of the reliability of his machine.
Following initial difficulties, the last few years have been particularly successful. Fedgas has established a strong market position in both its fields of activity, i.e. industrial gases and welding and cutting products. By setting up a welding school, the company has made a contribution towards the country's training resources for young technical personnel.

The affiliated company AIRGAZ, which operates in the French industrial gases market, advises customers on how to solve specific application problems. At the Eurolastic international fair in Paris, the company demonstrates the advantages of deflashing rubber mouldings using nitrogen. In the CRYO-JET plant, complicated technical mouldings are deflashed perfectly in a short, fully mechanized operation.

Using a mass spectrometer, Bernhard Delith measures the dissociation of the gas molecules in the discharge chamber of a 1000 watt CO₂ laser. On the basis of this measurement, the amount of fresh gas that must be added can be set to the minimum value, thereby increasing the efficiency of the resonator and the laser itself. New fields of application have been opened up in industry and science.

Large volumes of liquid nitrogen have to be made available within a few hours for mine fire fighting duties. To extinguish the fire, the liquid nitrogen must first be converted into its gaseous phase.

This large, mobile regasifier is 13 meter high and holds 45,000 litres of liquid nitrogen. Here, it can be seen being set up ready for vacuum-insulating in our Hanauer Landstrasse works.

The bolts in these heavy plates used in mining have rusted in. But Mr. Krebschull, foreman at Messers, Karl and Lothar Grütter in Castrop-Rauxel, has no problem in removing them — with an oxygen lance. The bearings are undamaged in the process and the plates can be re-used.

The plans drawn up by specialists for the construction of a new gas works were approved today by a review committee. The central helium filling station and a filling plant designed for palletized transportation of steel cylinders for air gases will be erected in two construction phases. Efficient filling systems guarantee economic and dependable deliveries. The new plant means that spare capacities will become available at the neighbouring Krefeld and Duisburg works. These capacities will be utilized to extend the activities of the Applications Research Department and the production of specialty gases.

Fedgas — 10 years in the South African market
AIRGAZ at the Eurolastic international fair
Research efforts focused on tests with the high performance laser

A new "giant" for fighting mine fires
Oxygen succeeds where brute force fails

Messer Griesheim to go ahead with the construction of a new gas works at Krefeld-Gellep
This new wire feed system, designed for use with VARIOMIC gas-shielded welding cots and for which patents have been applied, is making a name for itself. An important requirement in many fields of application, for instance shipbuilding, is that the welding wire can be fed reliably over extended distances. Here, the system is being used for welding a police launch in a Dormagen shipyard.

The development, design, construction and supply of cryogenic equipment, vacuum-insulated vessels, road tankers, vaporizers and regasifiers represent an important field of activity of the Industrial Gases Division. Here, the Lenzburg Oxygen Works takes delivery of a road tanker for liquefied air gases to be used for supplying the Swiss market.

Demag Fördertechnik, at Wetter in the Ruhr district, uses the plasma cutting gas GRIESON® to cut structural steel cable drums. Slag-free cuts are obtained at cutting speeds of up to 2 meter a minute. The cut edges are of such high quality that expensive refinishing operations are a thing of the past.

A chain drive has to be replaced on a large bucket-wheel excavator used in an open-cast lignite mine. Manfred Biederbick provides an elegant solution to the problem with his liquid nitrogen service. The new fixing bolts are cooled in liquid nitrogen to minus 196 °C. This causes them to shrink by a few tenths of a millimeter so that they can be fitted without difficulty in the bore-holes provided.

For the first time in the Federal Republic of Germany, a calf was born which had been deep-frozen as an embryo for four weeks in liquid nitrogen (−196 °C). After thawing, the embryo was then transplanted into the uterus of another animal. This successful experiment was performed by surgeons of the Veterinary College in Hannover in co-operation with the artificial insemination centre at Neustadt/ Aisch using a BFR 201/200 R freezing unit from Messer Griesheim.
New torch testing method

A plant for testing torch handles is put into operation in the works of the Oxy-fuel Equipment Division. Every handle is tested for oxygen/fuel gas leaks and for air tightness. Safe handles are given the green light.

New demonstration room at Messer Griesheim Ltd.

Here in Seeton Delaval, Gary Dobson shows UK customers the latest developments in the welding and cutting fields. At the same time, the plants and equipment, which are set up ready for operation, can be used for working on difficult problems and finding the best answers.

Seminar on the new appraisal interview scheme for employees

The “appraisal interview” scheme, which involves all senior members of the company’s staff, i.e. those employees with negotiated contracts of employment, was introduced under the terms of Works Agreement 39. Here, senior executives familiarize themselves with the new scheme in a series of seminars. The employees forum continues the trend towards the closer involvement of employees in the company’s activities. It will serve to improve the mutual exchange of information and provide a clear insight into the reasons behind policy decisions.

Concrete floor of cinema demolished noiselessly

The concrete floor of a cinema in Lünen proved to be a hard nut to crack. But, although it directly adjoined the wall of a department store, it presented no problem at all to Messer Griesheim’s concrete cutting service. With a temperature of 4000 °C, the flame of the powder cutting torch eats its way through the reinforced concrete swiftly and without vibration. In contrast to conventional demolition methods, e.g. pneumatic drills, the thermal cutting of concrete avoids damage to neighbouring property and does not inconvenience residents nearby.

Completion of new assembly shop for flame cutting machines

The first construction phase of the Hanauer Landstrasse works modernisation programme is complete. Here, the company manufactures cutting machinery and pressure vessels. The new 2000 square meter large assembly shop is ready to start production of flame cutting machines on an assembly-line basis using a conveyor track system. Particular attention was paid to considerations of industrial physiology in the design and arrangement of the new production system. As a result, job satisfaction will be as high as the quality of the products.
15th September

Pipelines for oxygen and nitrogen checked from the air

20th September

Supervisory Board visits new training centre

At 3.45 p.m. aircraft pilot Büschert and his observer, Thieme, take off from Herongen. During the low level flight, Thieme looks out for damage or unreported construction work along the route of the twin oxygen/nitrogen pipeline between Hürth and Dormagen which supplies important consumers in the chemical industry. The reconnaissance flight reveals that a marker post has fallen over at kilometre 10 and that a new construction site has appeared at kilometre 29. Otherwise nothing new to report.

21st September

Coal gasification: Research project to secure future energy supplies

At the second meeting of the newly elected Supervisory Board, the priorities of the capital investment plan for 1979 are outlined and recommended for approval by the shareholders. A visit is paid to the training and further education centre, set up at a cost of DM 2.5 million. Here, in the training workshop, the members of the Supervisory Board are, from left to right: Theo Gaus, Georg Ietas, Thea Mesar, Honorary Chairwoman of the company, Dietrich Hoffmann, Hans Schlösser and Hermann Niedlich together with Bernhard Metzke, Training Manager.

21st to 23rd September

Welding and cutting exhibition in Nürnberg

Today, the Rheinische Braunkohle AG starts up a pilot plant operating with oxygen from Mesar Griesheim. In the coal gasification process, coal is made to react with water vapour under pressure at temperatures above 750 °C. As this is an endothermic process, additional heat has to be supplied. This is provided by combusting coal with oxygen. The end-product is high-grade town gas or methane.

3rd to 7th October

Nucléx '78

The exhibition put on by the Nürnberg branch attracted a surprisingly large number of visitors. Under the motto "Higher productivity through advanced welding and cutting techniques", the 480 square meter marquee housed a range of exhibits of interest to local industries.

Mesar Griesheim's stand at this international nuclear science exhibition in Basel features the automatic high-precision welding set MULTITIG® for TIG welding with DC. In conjunction with the high-precision welding head, EXACTA, the integrated electronics circuit ensures consistently reproducible high performance welds. This is most important in the construction of nuclear reactors.
Info-Bus, the exhibition on wheels, arouses great interest on its journey through southern Europe. The main themes on this trip are oxy-fuel equipment and new developments in gas-shielded welding. A programme of films and lectures helps to put visitors fully in the picture.

Info-Bus in Rome

10th October

Introduction of visual display units for production control purposes

11th October

Liquid helium vessel passes breaking test

12th October

Pipe processing plant shipped to Astrakhan

13th October

Welding course in Novara

14th October

The German cutter "Amelie" lands 2 tons of prawns in Husum harbour

15th October

Within the space of just four weeks, Oxytechnik — Messer Griesheim’s subsidiary in the engineering services and custom-built systems field — supplied two modern large-scale pipe processing plants for use in the shipbuilding industry. These production lines will turn out pipe sections with such precision that they will be ready for fit-up. Only four operators are required to control the largely automated process.

In conjunction with the Associazione Industriale, the staff of Messer Griesheim in Italy organize an introductory course on gas-shielded welding techniques, as part of a free service for customers.

The fishery consortium in Husum freezes the freshly landed shrimps within two hours. The refrigerant used is liquid nitrogen. Efficient to use and convenient to store, liquid nitrogen is immediately at hand and helps the product to retain its succulence more effectively than conventional freezing techniques. Even the experienced gourmet will detect no difference between shrimps frozen in liquid nitrogen and the sea-fresh product.

Star welding head. Article No. 2425 2100. Quantity ordered 1000. Month/year 11.78 = day 222.

1st operation process 010, Machine group no. 20521. Hours 17.86. 1000 pieces produced on 10.10.78.

A liquid helium vessel must not explode even if the insulating effect of the vessel wall is suddenly destroyed by a massive force. The test proves that the vessel is safe. The pressure increase is contained within acceptable limits.

In a matter of seconds, the visual display unit provides information on capacity requirements, work progress and capacity efficiency. It makes for crystal-clear production data and effective production control.
At the Board Meeting of the American affiliate C.R.O., Inc., which is engaged in the manufacture of welding and cutting equipment, the decision is taken to build an electrode factory in Menomonee Falls, Wisconsin. The works, which will be erected on a 45,000 square meter site at a cost of $8.2 million, is planned to go into production at the end of 1979. The production range is to include special electrodes for maintenance and repair duties.

The argon melt purifying process serves to reduce the hydrogen content and oxide impurities in metallic melts. The process has been used successfully for purging aluminium alloys. The latest step has been to use the specially developed purging lance for other non-ferrous metal alloys, too.

In an experiment carried out at the Vereinigte Deutsche Nickelwerke in Schwerte, a nickel alloy (64% nickel, 30% copper) is subjected to this treatment for the first time. By purifying the melt, the cold-working properties of the material are significantly improved.

Having taken 10 months to build, the training centre in the Hanauer Landstrasse works is opened on schedule for 60 new apprentices to commence their training. Altogether, 167 apprentices are being trained here on modern machinery and equipment for trade, technical and commercial occupations. A wide range of courses is also available to other employees — management and sales training, language courses and retirement preparation seminars.

At his nursery in Morsum near Bremen, Wilfried Richter cultivates many varieties of Bromelia (the pineapple family). “We solve the problem of time-controlled blossoming with the help of a nitrogen-ethylene gas mixture from Messer Griesheim,” he says. The plants are treated with this gas mixture under air-tight covers. The ethylene contained in the nitrogen is picked up through the leaves of the plant and triggers off the blossoming process. What is particularly important is that the gas mixture is non-flammable.

Oxytechnik has won an order from a German car factory for the supply of a number of welding presses and turntables. The plants are being built in the production workshops of the Hanauer Landstrasse works. Oxytechnik’s know-how with the backing of Messer Griesheim’s highly skilled workforce provides a sound basis for expanding our activities in this field.
A 20 meter long section of a condensate pipe belonging to VEBA had to be re-laid at a lower level. Messer Griesheim's liquid nitrogen applications service solves the problem by freezing the liquid at both ends of the pipe section to form two solid, frozen plugs. The pipe is then cut, replaced and welded — without getting wet feet and without the need for expensive venting and re-filling operations.

Every year, R & D staff are required to report on the results of their work. It is an important means of ensuring that financial resources available for investment are allocated to the most deserving projects. This year, at the grinding and de-flashing applications research shop in Krefeld, senior management and staff were reassured that resources for R & D had been well invested. Peter Grund of the Applications Research Department explains the liquid nitrogen de-flashing process for rubber components to (from left to right) Dr. Karl Damaschke, Dr. Hans Schlacler, Willi Hoerkens, Dr. Reinhard Wolf and Heinz Golke.

Today, 70 years after the foundation of the former Austro-Hungarian Oxygen Works, Messer Griesheim Austria is erecting a new plant for oxygen and nitrogen in the first construction phase on the works site in Gumpoldskirchen. The plant, which will have a liquefaction capacity of 1,400 cubic meter per hour, is scheduled to go on stream during 1979. In addition to industrial gases, Austria and the neighbouring countries of south-east Europe are important markets for the company's welding and cutting products.

The biological purification stage of the sewage treatment plant in Emscher, one of the largest in Europe, is supplied with air. In certain weather conditions, however, neighbouring residents have to put up with rather obnoxious smells. Such smells can be prevented by oxygenating the sludge with pure oxygen. Messer Griesheim has been commissioned to prove its effectiveness in a field trial.
Messer Griesheim GmbH: Annual financial statements for 1978
Notes to the balance sheet

Assets

The tangible fixed assets increased by DM 16.1 million to DM 187.7 million.

In specific terms, capital movements were as follows (in DM million):

As at 1. 1. 1978 171.6
Additions 58.7
Disposals 0.5
Depreciation 42.1 42.6 16.1

As at 31. 12. 1978 187.7

Capital expenditure was as follows (in DM million):

<table>
<thead>
<tr>
<th></th>
<th>Previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land and buildings</td>
<td>10.8</td>
</tr>
<tr>
<td>Machinery and plant equipment.</td>
<td></td>
</tr>
<tr>
<td>Factory and office equipment.</td>
<td>47.8</td>
</tr>
<tr>
<td>Intangible assets</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>58.7</td>
</tr>
<tr>
<td></td>
<td>39.9</td>
</tr>
</tbody>
</table>

Valuation of tangible fixed assets is effected in accordance with the rulings laid down in Articles 153 and 154, AktG\(^1\). An appropriate proportion of the costs permitted by Article 153 (2), AktG, was included in the valuation of company-constructed additions to assets.

Items of the tangible fixed assets subject to wear and tear were written off as scheduled in accordance with their presumed useful economic life at the maximum permissible depreciation rates.

In accordance with Article 7 (3), EStG\(^2\) we have utilized the option to change from the declining to the straight-line method of depreciation.

For movable tangible fixed assets added in the first half-year, the full annual rate is charged in the year of addition. All other additions are charged at half the annual rate.

In accordance with Article 6 (2), EStG minor commercial items were written off completely in the year of addition.

The depreciation on additions in the year under review follows from the movement of the fixed assets.

\(^1\) Aktiengesetz
\(^2\) Einkommensteuer-Gesetz
The value of the investments increased (in DM million) through

by disposals of depreciation of 
23.1 0.7 0.2 

by 22.2 
to DM 121.4 million.

The additions for investments concern with DM 20.4 million capital increases and the acquisition of participations in foreign subsidiaries and associated companies.

Interest-free long-term loans or those bearing less than 5.5% interest are discounted.

The inventories were as follows (in DM million):

<table>
<thead>
<tr>
<th></th>
<th>Raw materials and supplies</th>
<th>Finished goods and merchandise</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>As at 1.1.1978</td>
<td>33.3</td>
<td>92.2</td>
<td>125.5</td>
</tr>
<tr>
<td>Net decrease</td>
<td>1.6</td>
<td>0.2</td>
<td>1.8</td>
</tr>
<tr>
<td>As at 31.12.1978</td>
<td>31.7</td>
<td>95.0</td>
<td>126.7</td>
</tr>
</tbody>
</table>

Valuation of the inventories is effected in accordance with Article 155, AktG, using the costs of purchase or manufacture or, where necessary, the lower values as at the date of the balance sheet. Certain values have been reduced to allow for individual items that are either non-sellable or of limited usefulness. Straight-line depreciation has been applied to an appropriate extent on production plant and overheads in calculating the manufacturing costs.

With an increase in net sales of 8.3%, trade accounts receivable have decreased by DM 0.9 million to DM 126.4 million. Domestic accounts receivable amount to DM 88.1 million, foreign accounts receivable amounting to DM 38.3 million. Accounts totalling DM 12.5 million are receivable from domestic and foreign associated companies. Sufficient value adjustments have been made to allow for risks.

Other accounts receivable from associated companies mainly concern our subsidiary Oxyssar Hüttenschwerstoff GmbH.

Sundry assets include in particular repayable loans.

Liabilities

The capital stock was increased by DM 18.0 million to DM 120.0 million through cash payments from the shareholders. DM 1.0 million were allocated to the free reserve from the net income for the year.

Special reserve items subject to future taxation decreased by DM 0.1 million.

The provisions for pensions are calculated on actuarial principles in accordance with tax regulations. DM 2.8 million were allocated in 1978.

The other provision of DM 58.1 million include all balanceable risks and uncertain obligations insofar as these are not already taken into account under other headings. In particular these involve non-assessed taxes of DM 29.8 million, guarantee commitments of DM 8.3 million, personnel expenditure of DM 6.1 million and a number of individual items totalling DM 13.9 million.
Long-term liabilities decreased by DM 7.0 million.

Other liabilities rose by DM 4.5 million to DM 63.6 million.

The sundry (short-term) liabilities comprise (in DM million):

<table>
<thead>
<tr>
<th>Description</th>
<th>Previous year</th>
<th>Current year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual payments, wage and salary arrears</td>
<td>11.4</td>
<td>15.6</td>
</tr>
<tr>
<td>Taxes</td>
<td>11.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Interest on loans not yet due</td>
<td>4.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Balance from plant construction projects</td>
<td>11.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Other items</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>39.1</td>
<td>36.6</td>
</tr>
</tbody>
</table>

The following liabilities are not evident from the balance sheet:

The properties in the Hanauer Landstrasse and Krifheimer Strasse are encumbered with lease rights and land charges totalling DM 645,255.00.

Claims of DM 6,170,000.00 have been assigned to secure export credits.

Payment commitments totalling DM 3,281,270.00 arise from stocks and shares that are not fully paid.

Liabilities of DM 320,000.00 exist in accordance with Article 24, GmbH 1) Gesetz.

1) Gesellschaft mit beschränkter Haftung.

Notes to the statement of income

The total operating performance amounted to DM 834.3 million; this represents an increase of 5.0% over the previous year.

Income from profit and loss transfer agreements derives largely from Hüttensaurerstoff GmbH, Oxyanaar Hüttensaurerstoff GmbH and Oxytechnik Gesellschaft für Systemtechnik mbH.

The income from subsidiaries and affiliated companies derives from the distribution of the net profit of domestic and foreign subsidiaries for 1977.

The other income rose by DM 1.5 million to DM 4.6 million, resulting from paid taxes reimbursed by subsidiaries.

The expenditure on wages, salaries and social security contributions rose by 4.0% compared with the previous year.

Expenditure on pensions and benefits includes a grant of DM 2.5 million to build up the assets of the Belegschaftsfahne Messer Griesheim GmbH as well as an allocation of DM 2.8 million to the provisions for pensions in addition to standing payments to pension schemes.

The other expenses comprise the following (in DM million):

<table>
<thead>
<tr>
<th>Description</th>
<th>Previous year</th>
<th>Current year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rents and leases</td>
<td></td>
<td>71.2</td>
</tr>
<tr>
<td>of which: Leasing companies</td>
<td>(37.7)</td>
<td>(23.1)</td>
</tr>
<tr>
<td>Associated companies</td>
<td>(22.1)</td>
<td>(22.3)</td>
</tr>
<tr>
<td>Others</td>
<td>(11.4)</td>
<td>(11.4)</td>
</tr>
<tr>
<td>Repairs and services by outside contractors and wages for outside labour</td>
<td>55.5</td>
<td>57.5</td>
</tr>
<tr>
<td>Outside marketing services</td>
<td>36.1</td>
<td>35.0</td>
</tr>
<tr>
<td>Fees, contributions, insurance premiums</td>
<td>12.3</td>
<td>11.9</td>
</tr>
<tr>
<td>Other items</td>
<td>6.0</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>180.9</td>
<td>167.3</td>
</tr>
</tbody>
</table>

DM 1.0 million were allocated to the free reserve from the net income for the year of DM 35.5 million. The available earnings total DM 37.5 million.

Frankfurt (Main), 9th March 1979

Board of Executive Directors
Messer
Kämpny
Grabhorn
Van Riet
## Assets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tangible and intangible fixed assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land and equivalent rights with offices, factory and other buildings</td>
<td>72,349,487</td>
<td>65,653,546</td>
</tr>
<tr>
<td>Land with residential buildings</td>
<td>291,345</td>
<td>151,241</td>
</tr>
<tr>
<td>Land not built over</td>
<td>2,327,650</td>
<td>2,406,634</td>
</tr>
<tr>
<td>Buildings on land owned by third parties</td>
<td>1,304,613</td>
<td>1,338,697</td>
</tr>
<tr>
<td>Plants and machinery</td>
<td>79,462,541</td>
<td>88,997,680</td>
</tr>
<tr>
<td>Factory and office equipment</td>
<td>15,720,020</td>
<td>12,771,357</td>
</tr>
<tr>
<td>Plants under construction and advance payments for tangible fixed assets</td>
<td>15,606,221</td>
<td>8,973,657</td>
</tr>
<tr>
<td>Patents, trademarks, licences and similar rights</td>
<td>167,729,294</td>
<td>171,845,143</td>
</tr>
<tr>
<td><strong>Investments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsidiaries and associated companies</td>
<td>114,714,153</td>
<td>99,997,940</td>
</tr>
<tr>
<td>Long-term loans (with a term of at least four years) of which: secured by real estate loans</td>
<td>6,637,035</td>
<td>6,532,836</td>
</tr>
<tr>
<td>in accordance with Article 88, Akt G</td>
<td>3,125,638</td>
<td>(3,031,742)</td>
</tr>
<tr>
<td></td>
<td>171,273</td>
<td>(1,094,585)</td>
</tr>
<tr>
<td>Fixed assets and investments</td>
<td>309,087,500</td>
<td>273,875,919</td>
</tr>
<tr>
<td><strong>Inventories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw materials and supplies</td>
<td>31,755,164</td>
<td>33,352,276</td>
</tr>
<tr>
<td>Finished goods and merchandise</td>
<td>94,987,778</td>
<td>99,192,642</td>
</tr>
<tr>
<td></td>
<td>126,743,942</td>
<td>132,545,921</td>
</tr>
<tr>
<td><strong>Receivables and other assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advance payments</td>
<td>861,577</td>
<td>702,830</td>
</tr>
<tr>
<td>Accounts receivable, trade of which: receivables due after one year</td>
<td>126,351,707</td>
<td>127,283,153</td>
</tr>
<tr>
<td></td>
<td>(19,790,094)</td>
<td>(11,021,247)</td>
</tr>
<tr>
<td>Other receivables from associated companies</td>
<td>124,488,243</td>
<td>124,898,743</td>
</tr>
<tr>
<td>Other receivables from associated companies</td>
<td>5,965,207</td>
<td>5,382,985</td>
</tr>
<tr>
<td>Other assets</td>
<td>1,563,505</td>
<td>4,048,558</td>
</tr>
<tr>
<td></td>
<td>142,702,496</td>
<td>131,977,568</td>
</tr>
<tr>
<td><strong>Liquid assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketable securities</td>
<td>2,453,454</td>
<td>2,584,190</td>
</tr>
<tr>
<td>Bills receivable</td>
<td>2,566,188</td>
<td>2,322,178</td>
</tr>
<tr>
<td></td>
<td>(2,024,320)</td>
<td>(2,024,320)</td>
</tr>
<tr>
<td>Cheques</td>
<td>6,209,099</td>
<td>4,456,086</td>
</tr>
<tr>
<td>Cash in hand, balances with the Deutsche Bundesbank and in postal checking accounts</td>
<td>1,304,380</td>
<td>1,161,165</td>
</tr>
<tr>
<td>Cash in banks</td>
<td>23,859,426</td>
<td>59,901,845</td>
</tr>
<tr>
<td></td>
<td>30,293,417</td>
<td>41,049,483</td>
</tr>
<tr>
<td>Current assets</td>
<td>320,739,845</td>
<td>327,662,767</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>74,200</td>
<td>24,044</td>
</tr>
<tr>
<td>Other prepaid expenses</td>
<td>612,960,625</td>
<td>598,970,720</td>
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</tbody>
</table>

## Liabilities and stockholders' equity

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital stock</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free reserve</td>
<td>37,000,000</td>
<td>(34,000,000)</td>
</tr>
<tr>
<td>Allocation</td>
<td>1,000,000</td>
<td>(3,000,000)</td>
</tr>
<tr>
<td></td>
<td>38,000,000</td>
<td>31,000,000</td>
</tr>
<tr>
<td><strong>Special reserve</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserve according to Article 1, Entwicklungshilfe- und items subject to future taxation</td>
<td>3,825,639</td>
<td>3,603,000</td>
</tr>
<tr>
<td></td>
<td>9,635,491</td>
<td>9,778,201</td>
</tr>
<tr>
<td><strong>Provisions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for pensions</td>
<td>39,547,077</td>
<td>36,778,138</td>
</tr>
<tr>
<td>Provision for maintenance and repairs</td>
<td>1,000,000</td>
<td>7,500,000</td>
</tr>
<tr>
<td>Other provisions</td>
<td>58,056,297</td>
<td>67,658,613</td>
</tr>
<tr>
<td></td>
<td>98,643,374</td>
<td>107,276,241</td>
</tr>
<tr>
<td><strong>Long-term liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan notes of which: secured by real estate loans</td>
<td>52,000,000</td>
<td>56,000,000</td>
</tr>
<tr>
<td>Liabilities due to banks of which: secured by real estate loans</td>
<td>147,869,937</td>
<td>153,398,312</td>
</tr>
<tr>
<td>Liabilities to pension funds of which: to associated companies</td>
<td>10,600,000</td>
<td>10,800,000</td>
</tr>
<tr>
<td>Other liabilities of which: to associated companies</td>
<td>25,500,000</td>
<td>23,000,000</td>
</tr>
<tr>
<td></td>
<td>221,160</td>
<td>(220,000)</td>
</tr>
<tr>
<td>Part of long-term liabilities due within four years</td>
<td>93,916,097</td>
<td>(113,175,632)</td>
</tr>
<tr>
<td></td>
<td>225,611,097</td>
<td>232,620,622</td>
</tr>
<tr>
<td><strong>Other liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable, trade</td>
<td>31,871,050</td>
<td>29,008,641</td>
</tr>
<tr>
<td>Advance payments received</td>
<td>2,381,168</td>
<td>1,520,550</td>
</tr>
<tr>
<td>Accounts due to associated companies</td>
<td>12,790,142</td>
<td>9,520,608</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>36,578,303</td>
<td>39,965,687</td>
</tr>
<tr>
<td></td>
<td>83,570,693</td>
<td>79,528,466</td>
</tr>
<tr>
<td><strong>Unappropriated retained earnings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>37,300,000</td>
<td>31,192,680</td>
</tr>
<tr>
<td></td>
<td>672,989,625</td>
<td>538,972,720</td>
</tr>
</tbody>
</table>

1) Einkommensteuer-Durchführungsverordnung
### Movement of fixed assets and investments

<table>
<thead>
<tr>
<th></th>
<th>1.1. 1978</th>
<th>Additions</th>
<th>Disposals</th>
<th>Depreciation</th>
<th>Total</th>
<th>Book transfers</th>
<th>31.12. 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DM</td>
<td>DM</td>
<td>DM</td>
<td>in previous years</td>
<td>in year under review</td>
<td>DM</td>
<td>DM</td>
</tr>
<tr>
<td><strong>Tangible and intangible fixed assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land and equivalent rights with office, factory and other buildings</td>
<td>65,453,546</td>
<td>10,083,034</td>
<td>—</td>
<td>94,226</td>
<td>194,335</td>
<td>3,389,751</td>
<td>3,594,036</td>
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<tr>
<td>Land with residential buildings</td>
<td>151,241</td>
<td>151,037</td>
<td>—</td>
<td>3,779</td>
<td>7,157</td>
<td>10,933</td>
<td>—</td>
</tr>
<tr>
<td>Land not built upon</td>
<td>2,456,054</td>
<td>500,027</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Buildings on land owned by third parties</td>
<td>1,338,007</td>
<td>9,034</td>
<td>—</td>
<td>39,937</td>
<td>1,026</td>
<td>102,925</td>
<td>102,926</td>
</tr>
<tr>
<td>Plants and machinery</td>
<td>80,997,688</td>
<td>18,733,121</td>
<td>—</td>
<td>187,926</td>
<td>2,597,667</td>
<td>16,842,522</td>
<td>19,640,519</td>
</tr>
<tr>
<td>Plants under construction and advance payments for tangible fixed assets</td>
<td>8,973,657</td>
<td>6,722,564</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Patents, trademarks, licences and similar rights</td>
<td>1</td>
<td>100,000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>171,645,143</td>
<td>58,681,867</td>
<td>—</td>
<td>542,483</td>
<td>18,423,810</td>
<td>23,624,423</td>
<td>42,048,233</td>
</tr>
<tr>
<td><strong>Investments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsidiaries and associated companies</td>
<td>92,697,940</td>
<td>22,016,213</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Long-term loans (with a term of at least four years)</td>
<td>6,532,036</td>
<td>661,136</td>
<td>206,874</td>
<td>730,368</td>
<td>218,425</td>
<td>238,425</td>
<td>—</td>
</tr>
<tr>
<td><strong>Total fixed assets and investments</strong></td>
<td>220,875,918</td>
<td>81,559,216</td>
<td>206,874</td>
<td>1,277,851</td>
<td>18,652,235</td>
<td>23,624,423</td>
<td>42,276,658</td>
</tr>
</tbody>
</table>

1) Balance from additions of DM 14,661,729.00 and transfers to operating fixed assets of DM 7,939,175.00
2) Including compound interest
3) Including deduction of unaccrued interest

### Balance Sheet Notes

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingent liabilities resulting from issue and transfer of bills of which: to associated companies</td>
<td>13,315,057</td>
<td>16,040,758</td>
</tr>
<tr>
<td>Guarantees</td>
<td>1,478,038</td>
<td>37,925,570</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37,925,570</td>
<td>37,925,570</td>
</tr>
</tbody>
</table>
### Statement of Income

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net sales</strong></td>
<td>824,773,063</td>
<td></td>
<td>775,837,132</td>
<td></td>
</tr>
<tr>
<td>Increase in inventories of finished goods and work in process</td>
<td>1,120,965</td>
<td></td>
<td>12,487,816</td>
<td></td>
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<tr>
<td>Other capitalized company-constructed assets</td>
<td>6,437,851</td>
<td>9,558,516</td>
<td>6,476,121</td>
<td>18,963,937</td>
</tr>
<tr>
<td><strong>Total operating performance</strong></td>
<td>8,343,319,599</td>
<td></td>
<td>794,881,069</td>
<td></td>
</tr>
<tr>
<td><strong>Cost of materials, supplies and merchandise</strong></td>
<td>210,658,394</td>
<td></td>
<td>261,936,602</td>
<td></td>
</tr>
<tr>
<td><strong>Gross result from operation</strong></td>
<td>563,613,205</td>
<td></td>
<td>532,865,377</td>
<td></td>
</tr>
<tr>
<td>Income from profit and loss transfer agreements</td>
<td>5,347,163</td>
<td></td>
<td>4,940,968</td>
<td></td>
</tr>
<tr>
<td>Income from subsidiaries and associated companies</td>
<td>963,357</td>
<td></td>
<td>769,729</td>
<td></td>
</tr>
<tr>
<td>Income from other investments</td>
<td>333,350</td>
<td></td>
<td>259,616</td>
<td></td>
</tr>
<tr>
<td>Other interest and similar income</td>
<td>3,965,370</td>
<td></td>
<td>4,255,583</td>
<td></td>
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<tr>
<td>Income from disposal of fixed assets and investments</td>
<td>317,161</td>
<td></td>
<td>1,132,286</td>
<td></td>
</tr>
<tr>
<td>Income from reduction of flat allowance for receivables and bills receivable</td>
<td>294,000</td>
<td></td>
<td>131,500</td>
<td></td>
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<tr>
<td>Income from adjustment of provisions</td>
<td>582,564</td>
<td></td>
<td>214,926</td>
<td></td>
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<tr>
<td>Income from the adjustment of special reserve items subject to future taxation</td>
<td>1,427,100</td>
<td></td>
<td>58,525</td>
<td></td>
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<tr>
<td>Other income of which: extraordinary</td>
<td>4,650,226</td>
<td>16,521,704</td>
<td>3,310,436</td>
<td>14,543,249</td>
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<tr>
<td><strong>Total income</strong></td>
<td>580,204,390</td>
<td></td>
<td>547,956,626</td>
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</tr>
<tr>
<td>Wages and salaries</td>
<td>158,073,061</td>
<td></td>
<td>190,235,047</td>
<td></td>
</tr>
<tr>
<td>Compulsory social security contributions</td>
<td>28,258,601</td>
<td></td>
<td>21,471,235</td>
<td></td>
</tr>
<tr>
<td>Expenditure on pensions and benefits</td>
<td>12,560,314</td>
<td></td>
<td>18,364,362</td>
<td></td>
</tr>
<tr>
<td>Depreciation on tangible and intangible fixed assets</td>
<td>424,493</td>
<td></td>
<td>35,165,946</td>
<td></td>
</tr>
<tr>
<td>Write-offs of investments</td>
<td>529,425</td>
<td></td>
<td>341,713</td>
<td></td>
</tr>
<tr>
<td>Losses on receivables and marketable securities</td>
<td>784,408</td>
<td></td>
<td>2,014,225</td>
<td></td>
</tr>
<tr>
<td>Losses from disposals of fixed assets</td>
<td>275,663</td>
<td></td>
<td>523,425</td>
<td></td>
</tr>
<tr>
<td>Interest and similar expenditure</td>
<td>19,281,527</td>
<td></td>
<td>22,042,160</td>
<td></td>
</tr>
<tr>
<td>Taxes on income and property</td>
<td>57,525,704</td>
<td></td>
<td>48,312,816</td>
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<tr>
<td>Other income</td>
<td>1,446,100</td>
<td>1,391,649</td>
<td></td>
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<tr>
<td>Allocation to special reserve items subject to future taxation</td>
<td>180,888,567</td>
<td>541,704,905</td>
<td>167,297,635</td>
<td>513,615,946</td>
</tr>
<tr>
<td><strong>Net income for the year</strong></td>
<td>38,500,000</td>
<td></td>
<td>34,192,860</td>
<td></td>
</tr>
<tr>
<td>Allocation to the free reserve</td>
<td>1,000,000</td>
<td></td>
<td>3,000,000</td>
<td></td>
</tr>
<tr>
<td>Unappropriated retained earnings</td>
<td>37,500,000</td>
<td></td>
<td>31,192,860</td>
<td></td>
</tr>
<tr>
<td>Pension fund contributions (including payments to legally independent benefit funds)</td>
<td>7,501,712</td>
<td></td>
<td>7,671,367</td>
<td></td>
</tr>
</tbody>
</table>

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**Auditor’s Report**

We certify that we have duly audited the accounts, balance sheet and annual report and confirm that they comply with the requirements of the law and the company’s articles of association.

Frankfurt (Main), 9th March 1979

Treuhund-Vereinigung Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft und Steuerberatungsgesellschaft

Kretschmer
Auditor

Dr. Uhlig
Auditor
Addresses

Messer Griesheim GmbH
Board of Executive Directors
Head Office
Postfach (POB) 3746
Hauuer Landstrasse 330
6000 Frankfurt am Main 1
Tel. (0611) 401 91
Telex 417 138 mgfh d
Cables mg-zentral frankfurtmain

Messer Griesheim GmbH
Industrial Gases
Postfach (POB) 4709
Homburger Strasse 12
4000 Düsseldorf 1
Tel. (0211) 4 30 31
Telex 8594 678 mgd
Cables sauerstoff duesseldorf

Messer Griesheim GmbH
Welding and Cutting Products
Postfach (POB) 3746
Hauuer Landstrasse 300
6000 Frankfurt am Main 1
Tel. (0611) 401 91
Telex 417 138 mgfh d
Cables mg-zentral frankfurtmain