



THE LUBRIZOL CORPORATION

1990 ANNUAL REPORT

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COVER PHOTO

Lubrizol fuel and lubricant additives play a key role in reducing harmful emissions from trucks and other vehicles. By maintaining top engine performance and efficiency, these additives help vehicles meet stringent pollution control requirements throughout their service life, thus benefitting both people and the environment.

CORPORATE PROFILE

The Lubrizol Corporation is a specialty chemical company which applies chemical, mechanical and biological technologies to create high performance products used in diverse markets worldwide.

Founded in 1928 in Cleveland, Ohio, the company now operates plants, laboratories and offices staffed by more than 5,000 employees around the globe. Business operations are technology-based and market-oriented and are comprised of two principal business segments — Specialty Chemicals and Agribusiness.

The Specialty Chemicals segment serves worldwide transportation and industrial markets through its Lubrizol Petroleum Chemicals Company (LPCC) and Lubrizol Business Development Company (LBDC) units. LPCC is a recognized leader in additive systems for gasoline and diesel engine oils, automatic transmission fluids, gear oils, marine and tractor lubricants. LBDC develops and markets specialty products for industrial fluids, fuel additives and specialty chemicals. In addition, this unit supports commercial technical development and provides venture capital to evolving strategic business units within the Corporation.

The Agribusiness segment, through Agrigenetics Company, carries out research and development, production and marketing of specialty vegetable oils and premium crop seeds marketed to the food, agricultural and chemical industries.

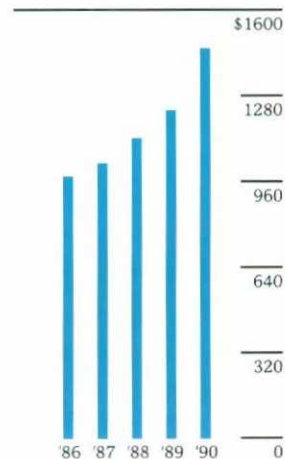
THE LUBRIZOL CORPORATION ENDEAVORS TO CONDUCT ALL OF ITS WORLDWIDE OPERATIONS WITH A RESPONSIBLE CONCERN FOR THE ENVIRONMENT. THIS INCLUDES THE MANUFACTURING PLANTS AND FACILITIES WHICH PRODUCE LUBRIZOL SPECIALTY CHEMICAL PRODUCTS, AND THE NATURE OF THE INDIVIDUAL PRODUCTS THEMSELVES.

OVER THE PAST DECADE, THE COMPANY HAS WORKED TO CAREFULLY REFORMULATE THE MAJORITY OF ITS PRODUCTS TO MAKE THEM ENVIRONMENTALLY FRIENDLY IN THEIR INTENDED USES. FURTHER, THE COMPANY'S RESEARCH HAS CREATED VARIOUS NEW CLASSES OF PRODUCTS, SUCH AS SPECIALTY CROP OILS, WHICH MAY EVENTUALLY SUBSTITUTE FOR LESS ECOLOGICALLY DESIRABLE MATERIALS.

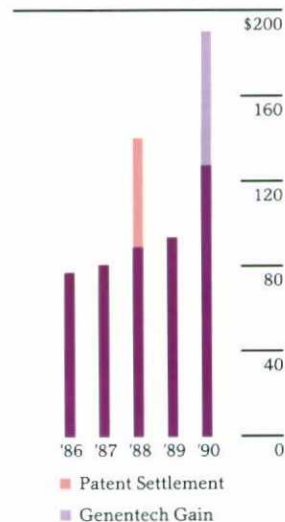
AS PART OF ITS OVERALL RESPONSE TO TODAY'S ECOLOGICAL CONCERNS, LUBRIZOL HAS CHOSEN TO USE RECYCLED PAPER THROUGHOUT THE FINANCIAL SECTION OF THIS YEAR'S ANNUAL REPORT. AS PAPER RECYCLING TECHNOLOGY AND CAPACITY IMPROVE, THE COMPANY INTENDS TO EXPAND THIS USAGE TO OTHER PUBLICATIONS AND FORMS.

FINANCIAL HIGHLIGHTS

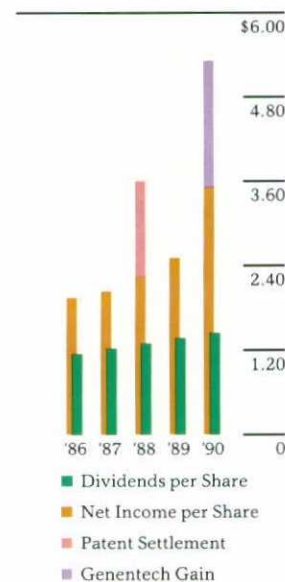
Revenues
(millions)



Net Income
(millions)



**Net Income per Share/
Dividends per Share**



(In Thousands of Dollars Except Per Share Data)

	1990	1989	Increase
Revenues	\$1,452,701	\$1,227,910	18%
Net income	190,046	93,980	102%
Net income per share	5.34	2.52	112%
Dividends per share	1.46	1.38	6%
Capital investments	92,231	82,720	11%
Research and development expenses . .	74,424	69,658	7%
Shareholders' equity	736,211	663,264	11%
Return on average shareholders' equity	27%	14%	93%

Common Share Price History

	1990		1989	
	High	Low	High	Low
1st quarter	\$38 ³ / ₈	\$33	\$38 ⁵ / ₈	\$35 ¹ / ₈
2nd quarter	41 ³ / ₈	35 ¹ / ₈	44 ³ / ₈	36 ³ / ₈
3rd quarter	43 ³ / ₈	37	45 ¹ / ₈	40 ¹ / ₈
4th quarter	49	39	41 ³ / ₈	34 ¹ / ₈

Dividends per Common Share

	1990	1989
1st quarter	\$.36	\$.34
2nd quarter36	.34
3rd quarter36	.34
4th quarter38	.36
Total	<u>\$1.46</u>	<u>\$1.38</u>

Fiscal 1990 was a record year for your company. All-time highs were achieved in revenues, net income, earnings per share and volumes produced and shipped from our plants.

Worldwide lubricant demand continued to grow. This growth, combined with the increased awareness by equipment manufacturers and consumers of the value of high quality lubricants, expanded the market for chemical additives. Lubrizol's strong sales and marketing effort, augmented by our acknowledged technical leadership, enabled us to maintain and expand our position in the industry. Increased productivity in our plants was due to the enthusiasm, hard work and expertise of Lubrizol people, amplified by the wide application of Quality Management principles. This permitted us to produce and ship record volumes of specialty chemicals from our existing facilities.

Prices for our specialty chemical products were advanced three times during the year. A first quarter price increase sought recognition by our customers of the increased costs of developing and testing our products. Late in the year, significant increases in the costs of refined petroleum products and petrochemicals, related to the crisis in the Persian Gulf, forced two additional price increases.

Lubrizol achieves more than 60 percent of its revenues in international markets. Overseas sales exhibited excellent growth during 1990, while North American volume was essentially flat compared with the strong performance in 1989. Currency translation effects added to our international growth, because the weak dollar increased revenues and profits from overseas operations.

Consolidated revenues for 1990 were \$1.45 billion, the highest in the company's history, and were 18 percent ahead of the results in 1989. Consolidated net income was \$190 million and income per share was \$5.34. This included an after-tax gain of \$1.79 per share on the sale of Genentech stock and an after-tax charge of \$.33 per share for the closure of our manufacturing facilities in Spain and the write-down of our investment in an Italian seed company. Product shipments increased by 6 percent.

Dividends and Stock Repurchase

Quarterly dividends were increased during the fourth quarter to \$.38 per share from \$.36 per share, yielding an annualized rate of \$1.52 per share. This is the seventh consecutive year in which dividends were raised. Dividends to shareholders in 1990 totaled \$52 million.

During the year, the company repurchased 2.4 million of its outstanding shares, an action that will have a favorable impact on future earnings per share.

Notable Events in 1990

Two events occurred during the year that deserve special comment. In the third quarter, Roche Holdings, Inc. acquired a substantial portion of Genentech. Lubrizol made its first investment in Genentech in 1979. At the time of the Roche acquisition, we held approximately 6 million Genentech shares. Based on the terms of the agreement, Lubrizol received \$106 million in cash and 3 million shares of a new redeemable Genentech common stock.

Also in the third quarter, the Federal Court of Canada ruled that Exxon's Canadian affiliate had infringed on one of Lubrizol's important patents. After approximately eight weeks of expert testimony, the Court permanently enjoined Exxon's affiliate from producing, using and selling some 20 specific additives as well as the finished lubri-



cants containing them. The Court also ruled that Lubrizol is entitled to monetary recovery for patent infringement. The amount of the recovery will be decided at an undetermined future date by a Court appointed referee. Exxon's appeal of the judgement is pending.

General Corporate Objectives

As reported to you in the past, we have developed a Corporate Philosophy and a Vision Statement for Lubrizol. To achieve our vision for the company, a series of corporate objectives have been formulated. It is the responsibility of the company's business units to develop goals and action plans that are consistent with these objectives.

We think that it is important for you, our shareholders, to be aware of these objectives. They are:

- To maintain a 10 percent or greater growth in earnings per share.
- To maintain a return on average shareholder's equity of 20 percent or greater.
- To remain the recognized leader in the lubricant additive field and maintain a 35 percent or greater market share of performance chemicals in the worldwide market.
- To create and nurture new specialty chemical business units which have potential to become added business units for Lubrizol.
- To continue to grow income from existing, established business units of Lubrizol Business Development Company at a compound rate of 15 percent per year or greater and provide an increasing share of the corporate net profit.
- To create maximum value for our agribusiness investments.
- To retain financial resource capacity to enable Lubrizol to consummate attractive strategic investments.
- To support the continuing effort to improve the chemical industry's responsible management of chemicals by promoting the principles and practices of Responsible Care, an industrywide initiative of the Chemical Manufacturers Association.
- To continue to manage the company using Quality Management principles and practices in accordance with our Corporate Philosophy and Mission Statement.

The consistent achievement of these corporate objectives will ensure that we reward shareholders by providing a high rate of return on invested capital.

Officers and Directors

At the Annual Meeting of Shareholders in April, Edward F. Bell was elected a Director for a one-year term. Mr. Bell is President and Chief Executive Officer of Ohio Bell.

In July, William T. Beargie retired as Senior Vice President — Finance after 28 years of service.

In June, Ray A. Andreas was elected Vice President and Chief Financial Officer and John R. Ahern was elected Controller.

Outlook

We are now one full year into the decade of the 90s, and the pace of change seems to be constantly increasing. Global events come upon us rapidly and bring great challenge.

We sincerely believe that your company, with its experienced managers, well trained people, up-to-date facilities and advanced technology, is capable of meeting the challenge. We will make continuing change our ally in achieving the growth we all desire for this company. The momentum of our growth increased during 1990, and we expect to keep this momentum going into the future.

On behalf of the Board of Directors and the more than 5,000 Lubrizol employees worldwide, we thank you for your loyalty and support.



L. E. Coleman
Chairman of the Board



W. G. Bares
President

March 13, 1991



"WE WILL CONTINUE TO PROVIDE LEADERSHIP IN THE PETROLEUM ADDITIVE INDUSTRY IN THE 1990s. OUR STRONG TECHNOLOGY BASE, MANUFACTURING INFRASTRUCTURE AND EXCELLENT CUSTOMER RELATIONSHIPS PUT US IN POSITION TO GROW WELL BEYOND THE LIMITS OF OUR CURRENT BUSINESS."

BILL MANNING

President,
Lubrizol Petroleum Chemicals Company

The chemical industry can be broadly divided into producers of commodity chemicals and those firms who produce a chemical specialty. While commodity chemicals are the basic building blocks for an array of different industrial products, specialty chemicals are custom formulated materials developed to meet specific end use and performance criteria.

Specialty chemicals are higher value-added products and generally exhibit less market and price cyclicality than do commodity chemicals.

Lubrizol is a leading participant in the specialty chemicals segment of the chemical industry. Through its Lubrizol Petroleum Chemicals Company and the Lubrizol Business Development Company, the Corporation holds a worldwide position in the development and marketing of specialty chemicals used in lubricants, fuels and functional fluids for transportation and industry.

For more than six decades, Lubrizol has concentrated its research and technical expertise on meeting the needs of a growing worldwide base of lubricant and fuel producing customers. In addition, the company has developed and supplies over 200 high performance specialty chemical products for general industry.

Specialty chemicals technical expenditures were \$108 million, or 8 percent of this segment's revenues in 1990. These expenditures included \$58 million for research and product development and \$50 million for product testing.

To serve its growing markets, Lubrizol has continuously expanded its international manufacturing and technical laboratory infrastructure and broadened its geographic reach into additional areas of the world.

Customers recognize that Lubrizol products are key to keeping engines, mechanical assemblies and industrial systems working longer at peak efficiency. This translates into reduced pollution, lower energy consumption and greater dependability from the vehicles, equipment and other products essential to commerce and everyday living.

LUBRIZOL PETROLEUM CHEMICALS COMPANY

Formed in 1987, the Lubrizol Petroleum Chemicals Company (LPCC) is focused on the Corporation's principal core business of developing and supplying specialty chemicals for lubricants, such as formulated engine oils and drive-line oils. Customers include producers of oils for passenger car engines, heavy-duty diesel engines, marine diesels, natural gas engines, two-cycle engines and automatic transmission fluids. Also included are producers of farm tractor oils and automotive gear oils. In addition to chemicals which help to improve mechanical performance, Lubrizol also sells products that control or enhance viscosity, such as viscosity improvers and pour depressants.

All of these products are complex blends of specialty chemicals individually formulated to meet specific and stringent customer performance requirements. A strong base of research, testing and application technology is required to develop these high performance additives, and Lubrizol is fully committed to maintaining and enhancing this technology leadership.

A strong performance was recorded by LPCC during the past year. Revenues from its product groups increased 20 percent in 1990. Selling prices for specialty chemical products were increased three times during the year. The first increase was to cover research and development costs required to meet the complex market requirements of the 1990s and to provide adequate return for continuing investment in new production capacity and equipment. The two additional price increases reflected higher costs of raw materials resulting from the situation in the Mideast.

A shipment of Lubrizol additives destined for Soviet markets is loaded on a highway carrier at the Rouen, France plant. Shown in the photo (left to right): Gerard Angoustures, Chief Executive Officer and General Manager of Lubrizol France, Jean Blondel, Drums Packaging Supervisor, and Sybille Vignale, Customer Service Department Manager.





At Southwest Research Institute in San Antonio, Texas, Tom Sheahan (left), Vice President, Marketing, and Frank Zalar, Vice President, Technology, review results of an engine test conducted in the diesel engine emissions laboratory. Development of new diesel oil additives will be an important factor in meeting future emission control requirements.

Other factors affecting 1990 results were favorable foreign currency exchange, market share growth and the impact on revenues of the Brazilian operations, which are now wholly owned. Also, some inventory building by customers may have occurred late in the year due to uncertainty about the Mideast situation.

Beyond its technology investments, LPCC continues to invest approximately \$50 million per year in capital expenditures to improve manufacturing capability to meet growing customer requirements. Along with these capacity increases have come process upgrades to satisfy more demanding government and environmental requirements.

A pivotal factor in Lubrizol's successful strategy for growth is the implementation of Quality Management practices throughout the organization. Employees are focusing on continuous improvement of key processes and the timeliness and quality of both products and services. The standardization of processes, procedures and the use of new measurement tools is improving all facets of the company's operations. In close cooperation with customers, these techniques also are being applied to product development. The objective is to speed introduction and delivery of new and improved products to market.

Engine Oils

Rapid changes in engine oil specifications and technology are continuing, both for passenger cars and heavy-duty diesels. Engine manufacturers are striving for higher power output, better efficiency, greater durability, improved fuel economy and lower emissions. High performance lubricants are vital to achieving these goals. Lubrizol is leading the effort to develop the chemistry needed by lubricant producers to formulate the premium motor oils the new engines will require.

During 1990, the North American specifications for passenger car motor oils were modified to include improved low temperature viscosity, volatility control and high temperature stability. European and Japanese vehicle producers also added new requirements for improved bearing load performance, deposit control and valve train wear. In cooperation with oil company customers, Lubrizol was successful in providing additive systems which meet all of these new requirements.

The North American market continues to offer opportunities to oil companies for the introduction of high quality niche lubricant products. Lubrizol works with customers to develop the additive systems for these high value products.

Diesel engine oils are another area of rapid product development. United States emission standards for diesel engines are being tightened in 1991 and again in 1994. This is mandating significant engine design changes which will require lubricant formulation improvements. Engine manufacturers must certify that their engines will meet the new emission standards for 290,000 miles of operation. This will place more stress on engine lubricants and require improved durability from the additive package.

The effect of reduced diesel emission limits will be tighter engines which will retain pollutants in the crankcase instead of allowing them to escape in the exhaust. Limiting the oil loss within these engines will reduce the amount of oil which must be added between changes. However, the higher contaminant levels in the oil may cause manufacturers to maintain or even reduce the currently recommended oil drain intervals.



"SELLING SPECIALTY CHEMICALS IN THIS DECADE REQUIRES BOTH SERVICE TO THE CUSTOMER AND ASSISTANCE TO THE ENVIRONMENT. GOOD MARKETING AND RESPONSIVE TECHNOLOGY ARE ESSENTIAL."

GEORGE HILL

Senior Vice President



"SENSITIVITY TO THE NEEDS OF NEW INTERNATIONAL MARKETS AND CUSTOMERS TODAY IS A REQUIREMENT FOR SUCCESS IN TOMORROW'S WORLD ECONOMY. AS THE LEADER IN PRODUCING AND SUPPLYING ADDITIVES THROUGHOUT THE WORLD, LUBRIZOL IS WELL SUITED TO SERVING THE NEEDS OF THESE GROWING MARKETS."

JEAN-POL ARZUL

Vice President

Introduction by the American Petroleum Institute (API) in December 1990 of the new CF-4 engine oil classification is the first step in the planned improvement of engine oils for on-highway four-stroke diesel engines. The specification includes test requirements involving new equipment and test procedures. During the year, Lubrizol completed a new \$6 million diesel engine testing laboratory at Wickliffe to support this new API classification. As a result, the company is well positioned to supply diesel oil additive packages for the 1991 requirements and will continue active development of products for the even more stringent 1994 limits.

Viscosity Modifiers

Lubrizol is a recognized supplier of specialty chemicals used as viscosity modifiers in formulated oils for all types of equipment. Viscosity modifiers and pour depressants allow the oil to function over a wide range of temperatures, thus protecting the engine and drivetrain in extremes such as desert operating conditions or frigid northern climates.

Lubrizol's viscosity modifier products comprise unique performance polymers which have application in the high value portion of the market. This, however, represents only a small portion of the potential overall market for viscosity modifiers.

In 1990, Lubrizol Petroleum Chemicals Company increased its focus on this important additive area, forming a new Viscosity Modifier group as part of its commercial development activity. This group, staffed with appropriate marketing, technology and manufacturing experience, is dedicated to expanding LPCC's viscosity modifier operations through new product development, market extension and customer diversification.

Environmentally Friendly Products

Development of products which help safeguard the environment is not new to Lubrizol. Examples include engine oil additives which enhance fuel economy, biodegradable two-cycle oil formulations, low chlorine and chlorine free gear oils, smoke suppressants and various synthetic oil formulations.

Today, as public awareness and demand for environmentally friendly products increase, oil and chemical companies are being challenged to meet the need. Lubrizol has been responding to this need through all of its major business units, including not only LPCC but also Lubrizol Business Development Company and the Agribusiness segment.

In 1990, the Environmentally Friendly Products group was formed with the objective of coordinating environmental product development and marketing across all of the Corporation's business units. The goal is to better identify the key environmental concerns of customers and to provide faster and more effective solutions to these problems. Lubrizol has the technical capabilities to lead the industry toward new ideas and important new lubrication developments.

Serving Global Markets

Beyond the traditionally strong markets of North America, Europe and Japan, LPCC is committed to expanding its operations into other areas of the world.

Literally, anywhere vehicles move or equipment operates there is a need for Lubrizol products.

To serve growing international markets, a new dispersant plant was completed in Singapore during the year to strengthen Lubrizol's Asia/Pacific operations for this high value patented technology. A joint venture laboratory



was established in the Soviet Union to develop and commercialize additives for high quality lubricants used in important local markets.

Positive changes in Eastern Europe are opening new opportunities for Lubrizol, which is already established there as a supplier of quality specialty chemicals.

Evaluating lubricant additive performance in terms of wear on a test pinion gear are Rob Main (left), Project Manager Technology Services, and Ed Love, Lubrizol parts rater. Lubrizol additives are widely used in automotive gear oils.



This computerized truck shipment dispatch office at Lubrizol's Rouen, France plant was developed using Quality Management methods to facilitate rapid loading and departure of trucks bound for European lubricant additive customers. The system drastically reduces paperwork and provides detailed information on customer orders and shipment destinations.

In Brazil, the company's now wholly owned Brazilian subsidiary is enabling faster and more flexible response to additive markets in that nation and elsewhere in South America. LPCC anticipates even better utilization of its Brazilian facilities during 1991.

Lubrizol's expanding geographic reach, its technical leadership and the implementation of Quality Management practices in its international operations place the company in a strong position to capitalize on international market opportunities.

Today, the technical challenges of individual markets and the need for environmentally friendly products are truly global in scope. Lubrizol has the special capabilities to meet these worldwide requirements, both today and tomorrow.

"QUALITY PRODUCTS AND SERVICES HAVE BEEN TRADITIONAL STRENGTHS OF LUBRIZOL. HOWEVER, NOW THE QUALITY MANAGEMENT PROCESS IS TEACHING US ALL HOW TO CONTINUOUSLY IMPROVE OUR WORK. OUR GOAL IS NOT MERELY TO SATISFY, BUT TO DELIGHT OUR CUSTOMERS."

LES COLEMAN

Chairman



Quality Management staff meetings are conducted on a regular basis to review current activities and proposals from various quality improvement teams.



Quality Management principles applied to pump maintenance have reduced costs and lengthened operating time between pump overhauls at Lubrizol's Painesville, Ohio plant.

LUBRIZOL BUSINESS DEVELOPMENT COMPANY

The Lubrizol Business Development Company (LBDC) applies both traditional and new Lubrizol chemistry to develop and supply specialty products for fuels, industrial fluids and other markets where high quality and performance are needed. In this endeavor, LBDC has succeeded in creating important new markets for the company's additive chemistry, service and technical resources. LBDC is now moving a step beyond, seeking new diversification opportunities through focused acquisitions which will contribute to long-term growth.

Organized in 1988, this business unit comprises three divisions: Specialty Chemicals, Strategic Investment and Strategic Planning and Development. The Specialty Chemicals division includes three operating groups specializing in Fuel Products, Industrial Products and New Ventures. LBDC's other two divisions support the Corporation's commercial development and strategic assessment and investment functions.

Since its founding, LBDC has pursued a strategy of aggressive growth in worldwide markets. It focused its efforts in Europe in 1989 by appointing a senior manager for this region. A comprehensive product application group at Lubrizol's Hazelwood Technical Center in the United Kingdom supports the sales and marketing group headquartered in London. The staff at Hazelwood continues to expand.

Plans are now being implemented to expand LBDC business in the rest of the world with new commercial managers added in Japan, Singapore, Mexico and Brazil, plus sales force increases in Japan and Singapore. The goal is for LBDC's business to duplicate the geographic distribution of LPCC with business equally divided between North America, Europe and the remainder of the world.

An important worldwide objective is to respond to the need for environmentally friendly specialty chemical systems. The growing emphasis on vehicle fuel efficiency, emission control and performance improvement is driving that market. LBDC technology and products address these issues which will become even more critical in the years ahead.

Fuel Products

Driven by government mandated requirements for reduced vehicle emissions, LBDC is experiencing strong growth in demand for petroleum fuel additives which provide total engine cleanliness. The reauthorization of the Clean Air Act will result in the introduction of reformulated gasolines which have lower aromatics, reduced volatility and more oxygenates. These new fuels may require expanded use of additives to maintain total engine cleanliness.

Additives alone, of course, do not reduce emissions. However, by functioning to maintain the cleanliness of carburetors, port fuel injectors, intake valves and ultimately combustion chambers, they enable the vehicle to maintain manufacturers' emission specifications throughout its useful service life.



"OUR THRUST INVOLVES AGGRESSIVE BUSINESS PLANNING TO CARRY OUT A WELL FOCUSED STRATEGY. WE HAVE THE ENTHUSIASM AND CONFIDENCE TO BE AGGRESSIVE AND THE COMPETENCE TO BE SUCCESSFUL."

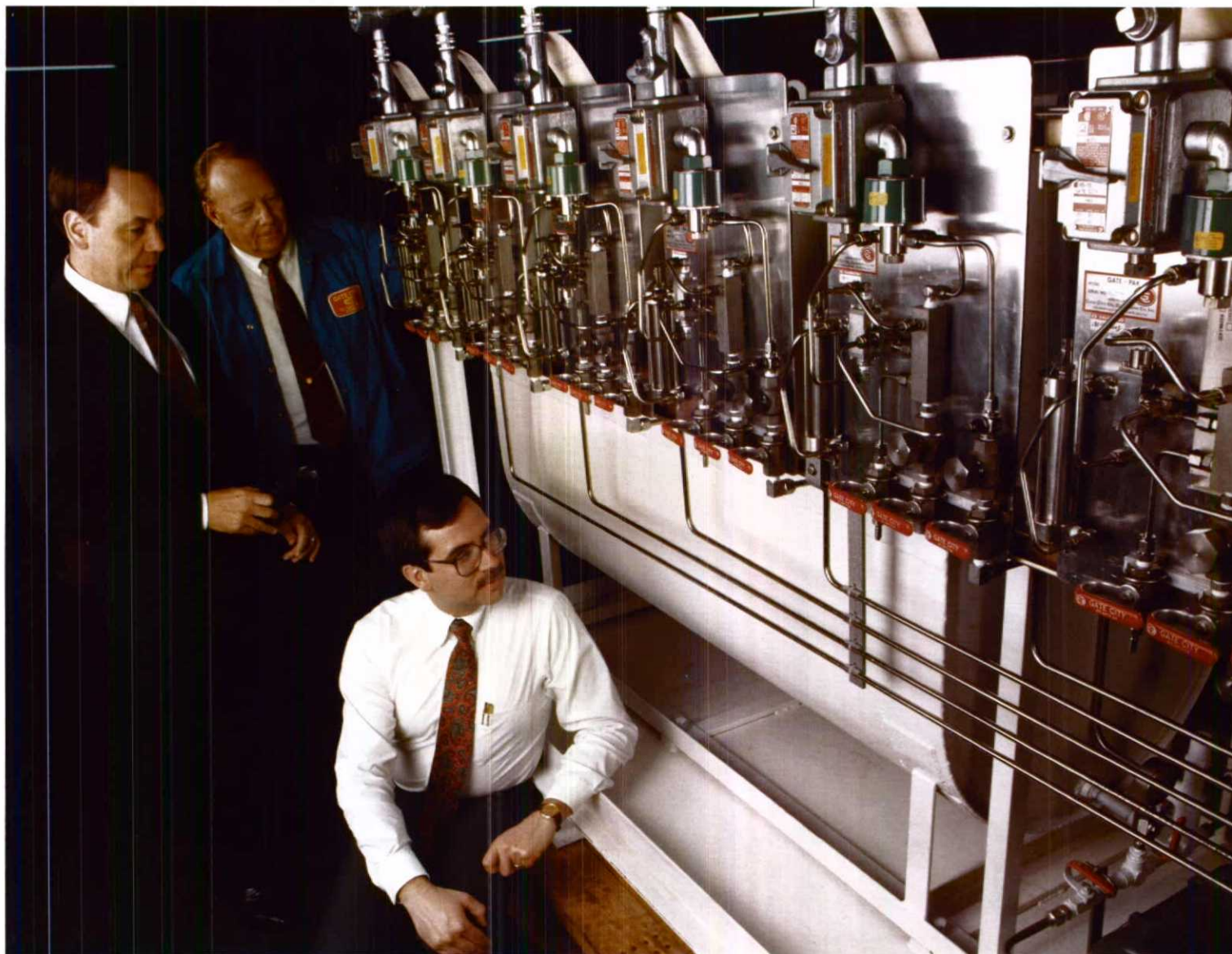
JOHN SENZ

President,
Lubrizol Business Development Company

It is estimated that between 1986 and 1990 the use of deposit control fuel additives more than doubled. This trend is expected to continue. Also, over 80 percent of today's new cars have fuel injectors which require additives to prevent fouling as a result of deposits.

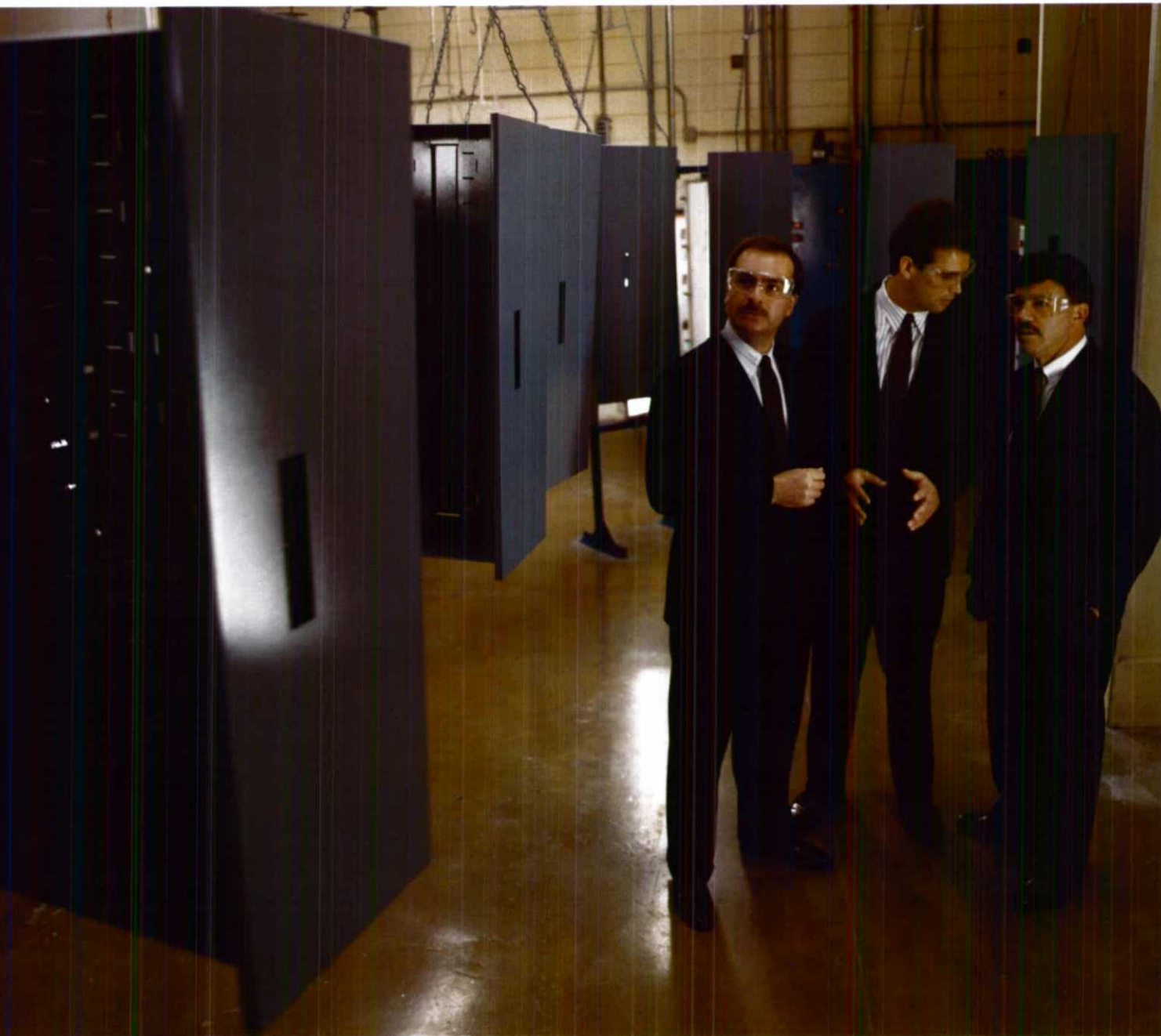
In the area of alternate fuels, Lubrizol is actively developing additives for use with fuels other than gasoline. The Fuel Products group, for example, is supplying a new additive for methanol fuel used in buses being tested by the Southern

A new Gate Pak Additive system ready for shipment to a fuel loading terminal customer is checked by Bill Hagstrand (left), Director-Fuel Products Group, Al Hayden (center), Vice President of Gate City, and Bill Silzle, President of Gate City Equipment Company.



California Regional Transit District. If these tests prove successful, methanol fuel may be adopted by other large urban areas having atmospheric pollution problems.

The same engine cleanliness goals which apply to gasoline also apply to diesel fuels used in trucks, buses, construction and farm equipment. By 1994, diesel engines in the United States will be required to meet strict emission control limits for a minimum of 290,000 miles. Fuel and lubricant additives will be a key to meeting these new standards, and Lubrizol is well positioned to be a leading supplier of these new diesel products.



Dan Sheets (left), Business Manager - Coatings Technology, Jerome Sheehan (center), Sales Engineer, and Bill Hamilton, General Manager of New Ventures, check continuous production painting operations for office furniture at Steelcase Inc. in Grand Rapids, Michigan. Lubrizol rheology control agents enable this customer to use less solvent and higher levels of solids in attractive high durability coatings.

The growing overall market for fuel additives may double over the next few years. To meet this accelerating demand, the company has added production capacity in both the United States and Europe. In early 1991, Lubrizol completed a major expansion of its Bayport, Texas, production facilities to produce fuel additives.

Industrial Products

The Industrial Products group of LBDC holds strong market positions in specialty chemicals for antiwear hydraulic oils, rust and oxidation inhibited oils, industrial gear oils, metalworking fluids, greases and water based lubricants.

Sales of these chemical additives, because of their unique performance and Lubrizol's capable service support, have continued to increase despite the general downturn in the industrial economy. This growth trend is expected to continue during 1991.

Lubrizol Business Development Company is the top ranking supplier of specialty chemicals for both hydraulic oils and industrial gear oils. These high value-added chemicals have fostered LBDC's geographic growth, particularly in Europe where product application technology is a major part of LBDC's business development strategy.

Metalworking fluids are another opportunity for growth. Environmental and worker safety and health concerns have led to an increased market demand for the replacement of barium, zinc and chlorine in these fluids. LBDC is supplying new environmentally acceptable performance additive systems for use in soluble oils and quenching oils and holds a solid patent position in technology for water based products. Lubrizol intends to become a leading supplier of additives to the metalworking fluids market and will apply the focused acquisition approach when appropriate to support and enhance its value-added selling strategy. In addition, Lubrizol will complete a new water based industrial fluids unit at its Bromborough, England, plant during the first quarter of 1991.

New Ventures Group

Lubrizol's New Ventures group is responsible for the development of new specialty chemical businesses in fields outside fuels and industrial products. This has included the development of new markets involving mining chemicals, coating technology and process chemicals.

During 1990, LBDC acquired Resource Development Inc. (RDI) in Denver, Colorado. This acquisition is designed to provide the service support needed for the mining chemicals business. LBDC currently supplies specialty chemicals for use as flotation aids and in emulsion explosive products. RDI also provides a state-of-the-art mining chemical laboratory staffed by five career professionals from the mining chemicals industry. The laboratory provides internal research and testing as well as functioning as a testing laboratory for the industry.

RDI's capabilities enable LBDC to identify needs, supply answers and expand product sales to mining customers not only in the United States but in important global markets such as Europe and the Third World.

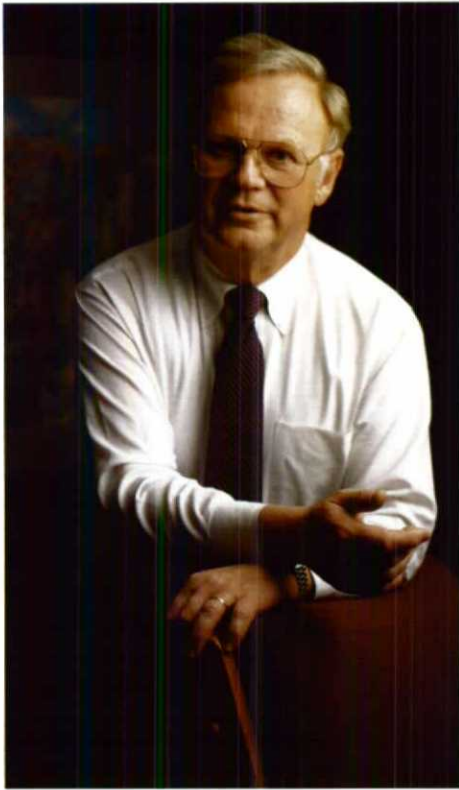
Lubrizol's Coating Technologies group develops and supplies tailored products for important niche markets in the paint and coatings field. For example, it produces rheology control agents which enable customers to use higher levels of solids and less solvents in their coatings. This improves the pigmentation density and coverage of the coating and reduces the ecological risks associated with high solvent content coating materials.

Lubrizol Business Development Company has based its business growth on identifying the needs of the market and converting those needs into new technologies and commercially successful products. LBDC has the strategy, the technical capabilities and the leadership to continue its rapid growth. The opportunities are many in important markets around the world.



"CHANGES IN MARKETS, CUSTOMERS AND COMPETITIVE FORCES ARE ACCELERATING, AND WE MUST MAXIMIZE OUR HUMAN AND FINANCIAL RESOURCES. WE ARE PUSHING OUR TRADITIONAL BUSINESS APPROACH OUT AT THE EDGES TO FIND PROFITABLE NEW OPPORTUNITIES."

RAY ANDREAS
Vice President and
Chief Financial Officer



"OUR SEARCH FOR NICHE MARKETS AND SPECIALTY USES FOR OUR PRODUCTS IS OPENING A WHOLE NEW RANGE OF OPPORTUNITIES FOR THE AGRIBUSINESS SEGMENT. BY INCREASING OUR FLEXIBILITY IN PRODUCTION, MARKETING AND RESEARCH, WE ARE GIVING OURSELVES THE BEST OPPORTUNITY TO BROADEN OUR BASE."

JOHN STUDEBAKER

President,
Agrigenetics Company

The Agribusiness segment of the company's operations comprises the production and marketing of specialty vegetable oils and their derivatives; research and development involving new and superior agricultural and agriculturally derived products for specialty markets; and the hybridization, production and marketing of high quality crop seeds for domestic and export customers.

This business segment consists of Agrigenetics Company which operates domestic seed divisions and overseas affiliates; SVO Enterprises, a division of Agrigenetics, which produces and markets crop seed oils and their derivatives; and a strategic agricultural research center which develops specialty chemical products from agricultural source materials.

The focus of the company's agricultural operations is on the application of plant genetic technologies to the development of commercially successful products for specialty markets.

These markets include not only farm customers in the case of crop seeds but downstream industries such as food processors and others who utilize vegetable oils or their derivatives in key product lines.

This specialty niche product and marketing strategy requires a high level of flexibility in development and production operations, as well as excellent geographic reach to serve a diverse customer base. Agrigenetics rates high in both of these key capabilities.

Specialty Vegetable Oils

SVO Enterprises achieved the best year in its history in 1990 as sales of its specialty vegetable oil products doubled from the prior year.

SVO produces and markets a line of specialty oils based on TRISUN® high monounsaturated sunflower oil. The high monounsaturates in TRISUN give this special hybrid sunflower oil outstanding stability to improve and maintain food quality. In addition, medical research continues to prove that monounsaturates provide important nutritional benefits in the diet when they are used in place of saturated fats.

Current public concern over food products containing saturated fats has led food processors to adopt TRISUN in products such as non-dairy creamers, snack foods and frozen desserts. It is sprayed on cereals, crackers and cookies to keep these products fresh and crisp.

To meet the expanding demand for this premium vegetable oil, SVO Enterprises has steadily increased production. The hybrid sunflower from which this oil is derived is now being grown on four continents. This provides virtually year-round production of this important seed crop and protects against possible crop problems in any one geographic area.

During the year, the company acquired an oilseed crushing and refining plant at Culbertson, Montana. This facility has the capacity to handle a significant portion of the division's annual production requirements for sunflower and

other seed-derived vegetable oils. In addition to cost savings compared with outside processors, the Culbertson plant adds flexibility to the division's vegetable oil production operations. The western location of the Montana facility also improves the logistics of serving growing California and Asia/Pacific markets.

Development work is proceeding on other promising vegetable oil products and derivatives. Improved hybrids of rapeseed, sunflower and safflower oils, for example, possess excellent lubricating qualities and are non-hazardous to the environment. These oils potentially could become substitutes for some petroleum-based lubricants in environmentally sensitive applications.

Madison Research Laboratory

A major portion of Agribusiness strategic research and development is consolidated at the Madison research laboratory in Wisconsin.

Production and packaging of non-dairy coffee creamer containing Trisun® monounsaturated vegetable oil is discussed by Joanne Wanstreet, Director of Marketing for SVO Enterprises, and Donald Feltz, Manager of Borden's Chester, South Carolina plant.





Here scientists and agricultural specialists combine their talents in the search for new and improved specialty chemical products produced from oilseed crops. Rapeseed, sunflower seeds, soybeans, corn and safflower are among the sources being used in this work.

Another prime activity at the Madison laboratory is genetic research aimed at improving specific attributes of hybrid plant varieties. This work relates to overall crop and oilseed yield and greater quality, as well as to the development of new food crop varieties of higher yield and greater resistance to specific insects and diseases.

It is believed that genetic research at Madison, including a DNA marker-based gene mapping system which allows rapid custom development of new corn hybrids, is among the most advanced in the industry. Agrigenetics' corn researchers successfully demonstrated the value of the company's DNA marker technology as a tool for accelerating the development of new corn hybrids. A new line resistant to maize dwarf mosaic virus was developed in less than half the time required using traditional plant breeding techniques alone. Possibilities exist for the crossover of this gene mapping technology to other crops including soybeans, rapeseed, sunflower and safflower.

Agrigenetics has completed the first of a series of contemplated licenses to third parties covering its Bt gene technology. This license covers the use of a gene from the bacterium *Bacillus thuringiensis* which confers insect resistance to transformed potato plants. This technology offers an alternative to the use of chemicals for insect control.

Crop Seed Production

For the first time in several years, 1990 was a good year in the seed business. Normal weather conditions in 1989 resulted in adequate supplies of high quality corn and other seeds for the 1990 growing season.

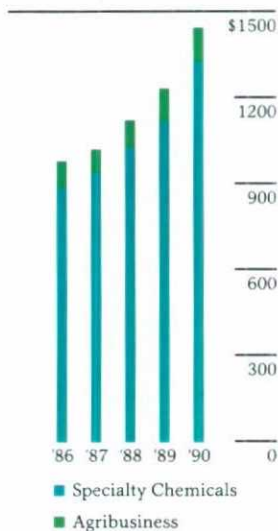
Agrigenetics' eight seed companies maintained their traditional market share in the face of strong price competition in domestic and overseas markets. The company's international seed business continues to grow. Affiliates and distributors in overseas areas are finding increasing demand for the high quality, higher yield crop seed varieties Agrigenetics supplies. A new joint venture in France, called Eurograin, completed a successful first year in 1990 and is expected to be an effective vehicle for expanding crop seed sales in Europe and the Eastern Bloc.

In the United States, a new Farm Bill will increase the amount of planted acreage allowed farmers over the next five years. This should have a positive impact on the business volume of Agrigenetics' seed companies. Further, the introduction of newer, superior performing hybrid seed varieties should stimulate additional market share gains, both in the United States and abroad.

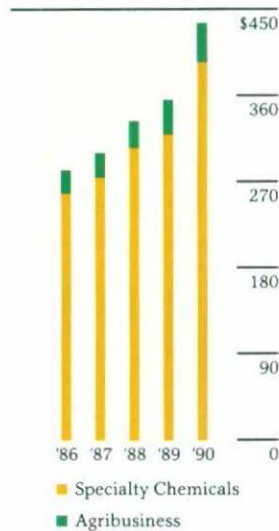
At Agrigenetics' seed crushing and refining plant in Culbertson, Montana, Dick Schoenfeld (right), President of SVO Enterprises, Dennis Terry (center), Director of Manufacturing, and Larry Mahlum, Culbertson Plant Manager, check the loading of high oleic sunflower oil into railroad tank cars for shipment to West Coast markets.

RECORD REVENUES,
VOLUME AND
NET INCOME
WERE ACHIEVED
IN 1990 AND
RETURN ON EQUITY
WAS 27%.

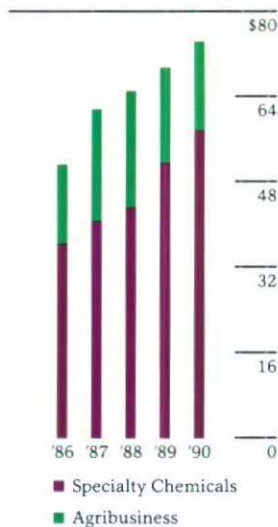
Revenues by Segment
(millions)



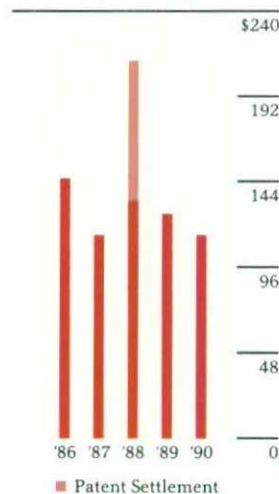
Gross Profit by Segment
(millions)



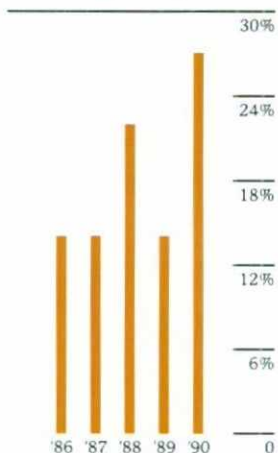
Research & Development by Segment
(millions)



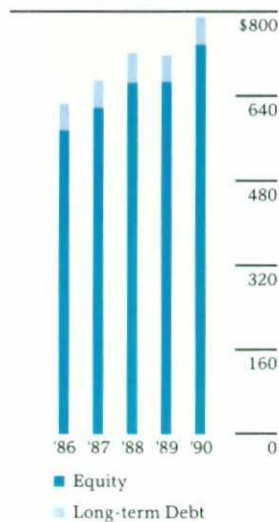
Cash Provided from Operating Activities
(millions)



Return on Equity
(percent)



Capitalization
(millions)



MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Lubrizol is a specialty chemical company using chemical, mechanical and biological technologies to develop products for world markets in transportation, industry and agriculture. The company's business segments are Specialty Chemicals and Agribusiness. The Specialty Chemicals segment develops, produces and sells chemical additives for transportation and industrial lubricants and functional fluids, fuel additives and diversified specialty chemical products. The Agribusiness segment includes the traditional operations which develop, produce and sell planting seeds for agricultural and oilseed crops, and develop and market specialty vegetable oils. Agribusiness also includes strategic activities, which consist of biotechnology research and development directed toward developing new products for the agricultural, food and chemical industries.

Results of Operations

In 1990, consolidated revenues increased \$225 million or 18% compared to 1989. The Specialty Chemicals segment contributed 94% of this increase, although both of the company's business segments achieved record revenues. Gross profit (Sales less Cost of Sales) increased \$83 million or 23% over 1989. As a percentage of sales, gross profit was 30% in 1990 compared to 29% in 1989 and 30% in 1988. Increased selling, testing, administrative and research expenses in the Specialty Chemicals segment partially offset the increased gross profit. Thus, in 1990, the increase in revenues was \$46.1 million more than the increase in total cost and expenses.

In 1990, the company recorded a pre-tax gain of \$101.9 million from the exchange of its Genentech stock for cash and new shares of Genentech in connection with the merger between Genentech and Roche Holdings, Inc. The Genentech stock is regarded as a corporate asset and, therefore, the gain is not included in the business segment results. This gain, after taxes and \$5.1 million of related expenses, contributed \$62.9 million or \$1.79 per share to consolidated net income. A special charge of \$9.7 million in the Agribusiness segment for the write-off of assets reduced net income by \$6.4 million or \$.19 per share. (Refer to Note 7 to the financial statements.)

Net interest income decreased by \$6.7 million in 1990 primarily due to lower interest accrued on Federal income tax refunds and lower average funds invested.

Income before income taxes increased \$133.5 million in 1990. Excluding the gain on the Genentech transaction net of related expenses, the increase in income before taxes was 27% over 1989. In addition, the company had a lower effective income tax rate in 1990, primarily due to settlements of several income tax audits with U.S. and foreign tax authorities covering the years 1981 through 1988. As a result, net income before the Genentech transaction increased 35% in 1990 over 1989.

In 1989, consolidated revenues increased \$102 million or 9% compared to 1988 due to increases in both of the company's business segments. Gross profit increased \$21 million or 6% over 1988. The increased gross profit in 1989 was substantially offset by increased selling and administrative expenses in both segments and higher research expenses in the Specialty Chemicals segment. As a result, total revenues increased \$2.4 million, or 2%, more than total cost and expenses.

Other income decreased \$9.0 million primarily due to lower net investment gains in 1989. Net investment gains consist of gain on sale of investments and a loss recorded on a write-down of a marketable equity security. Net interest income increased \$8.6 million primarily from interest recorded on estimated Federal income tax refunds.

In 1989, net income decreased \$46.0 million to \$94.0 million or \$2.52 per share. Net income for 1989 was less due to the patent litigation settlement, special charges and accounting change that were recorded in 1988. Excluding these 1988 factors and the change in net investment gains, net income increased \$5.3 million in 1989.

In 1988, consolidated revenues increased \$103 million or 10% primarily due to a \$96 million increase in revenues from Specialty Chemicals. Improved gross profit was partially offset by higher selling, testing, administrative and research expenses in both segments. As a result, total revenues increased by \$10 million more than the increase in total cost and expenses.

In 1988, a significant patent litigation settlement from Exxon Corporation, after deducting related expenses and income taxes, added \$53.2 million (\$1.37 per share) to net income. Income in 1988 was reduced by special charges of \$31.2 million (\$17.1 million after tax or \$.44 per share) for write-downs of several investments in the venture development area and the discontinuance of certain agricultural biotechnology research programs. Gain on sale of investments was \$10.2 million (\$7.0 million after tax or \$.18 per share). Net income in 1988 was increased by \$8.8 million (\$.22 per share) due to the cumulative effect of adopting Statement of Financial Accounting Standards No. 96, "Accounting for Income Taxes." Net income in 1988 increased \$58.6 million to \$139.9 million or \$3.62 per share.

Return on average shareholders' equity was 27% in 1990, 14% in 1989 and 22% in 1988. Excluding the 1990 Genentech gain, and the income from the patent settlement and accounting change in 1988, the return on average shareholders' equity was 18%, 14% and 13%, respectively.

Specialty Chemicals Segment

In 1990, the Specialty Chemicals segment accounted for 92% of consolidated revenues. This segment had record revenues and volume in 1990, with revenues increasing 19% and volume increasing 6% over 1989. Higher shipments to international customers, part of which was due to the effect of consolidating the Brazilian affiliate, contributed approximately 40% of the revenue increase. Selling price increases late in 1989 and during 1990, along with favorable currency effects, accounted for the remainder of the revenue increase. Selling prices were increased during the first quarter of 1990 in recognition of the increased research and performance testing required to meet today's complex market requirements and

the necessity of investing in plant and equipment. In addition, selling prices were increased twice in the second half of 1990 in response to higher raw material costs associated with the Middle East crisis.

Specialty Chemicals cost of sales increased because of escalating material costs and higher manufacturing costs. Manufacturing costs increased due to higher volume, the unfavorable effect on expenses caused by the weakening U.S. dollar and a \$5.0 million provision for the closure of a manufacturing facility in Spain. Gross profit increased 24% or \$77.5 million. The increased gross profit is due to higher volume and the ability to maintain gross profit percentages during periods of escalating costs. As a percentage of sales, gross profit improved to 30% in 1990 from 29% in 1989.

Operating Results By Business Segment

(In Thousands of Dollars)

	1990	1989	1988
Revenues:			
Specialty Chemicals	\$ 1,335,471	\$ 1,124,364	\$ 1,035,858
Agribusiness	117,230	103,546	89,873
Total	<u>\$ 1,452,701</u>	<u>\$ 1,227,910</u>	<u>\$ 1,125,731</u>
Gross Profit:			
Specialty Chemicals	\$ 398,238	\$ 320,785	\$ 306,241
Agribusiness	40,179	35,025	28,139
Total	<u>\$ 438,417</u>	<u>\$ 355,810</u>	<u>\$ 334,380</u>
Research and development expenses:			
Specialty Chemicals	\$ 57,776	\$ 51,342	\$ 43,144
Agribusiness - Traditional	7,697	6,441	4,874
- Strategic	8,951	11,875	17,302
Total	<u>16,648</u>	<u>18,316</u>	<u>22,176</u>
Total	<u>\$ 74,424</u>	<u>\$ 69,658</u>	<u>\$ 65,320</u>
Segment income (loss):			
Specialty Chemicals	\$ 179,359	\$ 141,248	\$ 223,389
Agribusiness - Traditional	(4,960)	1,802	(2,394)
- Strategic	(9,585)	(16,519)	(37,840)
Total	<u>(14,545)</u>	<u>(14,717)</u>	<u>(40,234)</u>
Total	<u>\$ 164,814</u>	<u>\$ 126,531</u>	<u>\$ 183,155</u>
Identifiable assets:			
Specialty Chemicals	\$ 886,619	\$ 732,784	\$ 730,456
Agribusiness	154,153	139,253	124,702
Corporate investments	73,824	88,147	115,513
Total	<u>\$ 1,114,596</u>	<u>\$ 960,184</u>	<u>\$ 970,671</u>

Segment income is before interest and income taxes and, in 1990, the gain on sale of Genentech.

Selling and administrative expenses increased 26% primarily due to planned increases in personnel because of new business development, increased legal expenses associated with protection of proprietary technology and increased international sales activities. Testing, research and development expenses increased 14% in 1990. Most of this increase related to additional activity with respect to engine oils, gear oils and fuel products.

This segment's results are impacted by the strengthening or the weakening of the U.S. dollar against other currencies in which the company transacts business. In 1990, the U.S. dollar weakened, resulting in increased revenues and expenses when international transactions are translated into U.S. dollars.

Specialty Chemicals segment income was \$179.4 million, which is a 27% increase over 1989.

Uncertainty about the crisis in the Middle East, coupled with the increasing prices for all lubricant components, may have inspired some inventory build-up by customers and partially explain the increase in the volume of shipments. The company is not able to predict with any certainty how either a continuation or a resolution of the Middle East crisis will affect the future results of the company. However, management believes that the Middle East situation will not have a material effect on the company.

In 1989, Specialty Chemicals revenues increased 8% on a 7% increase in volume. Both domestic and international markets contributed to the increase in volume. Price increases were substantially offset by unfavorable currency effects. In 1989, the gross profit percentage declined slightly to 29% from 30% in 1988 because of raw material and manufacturing cost increases. The company was unable to implement selling price increases early enough in the year to maintain margins due to the strong competition throughout the company's worldwide markets. Selling and administrative expenses increased 8% in 1989 primarily because of efforts to create new business units and markets. Research and development expenses increased 19% due to increased new product development and foreign patent application activity.

Specialty Chemicals segment income in 1989 was \$141.2 million, which is \$82.1 million lower than 1988. After adjusting for the patent litigation settlement and special charges in 1988 and the lower net investment gains in 1989, segment income decreased \$5.8 million in 1989.

In 1988, Specialty Chemicals segment revenues increased 10%. This increase resulted primarily from a 7% improvement in volume and the effect of translating stronger foreign currencies into U.S. dollars. Both domestic and international markets contributed to the increase in volume. The gross profit percentage was stable at 30%. Selling, testing and administrative expenses increased 14% because of increased customer testing to meet the new SG motor oil specification and other new product development requirements. Research and development expenses increased 6%. These factors, together with higher equity earnings from non-consolidated

companies, increased segment income by \$12.1 million in 1988. The patent litigation settlement added \$81.2 million, gain on sale of investments was \$11.0 million lower than in 1987, and special charges for write-downs of investments in several venture development companies reduced segment income by \$14.1 million. The net result was an increase of \$68.2 million in segment income to \$223.4 million for 1988.

Agribusiness Segment

In 1990, Agribusiness revenues increased 13% to \$117 million due primarily to increased specialty vegetable oil volume, aided by the acquisition of an oilseed crushing and refining business. Revenues from planting seeds were approximately the same as 1989. Gross profit improved by 15% to \$40 million as a result of higher revenues and lower seed production costs in the normal growing season of 1989 compared to the drought impacted 1988 season. Gross profit, as a percent of sales, was 34% in both 1990 and 1989. In 1990, selling and administrative expenses declined 4% and research expense declined 9%. These declines were primarily due to discontinuance of certain contract research programs and cost efficiencies from combining strategic research activities. This was possible because of the settlement with Agrigenetics Research Associates Limited and the acquisition of Sungene Technologies Corporation during 1989.

The Agribusiness segment lost \$14.5 million in 1990, approximately the same as in 1989, primarily due to a special charge of \$9.7 million within the traditional operations for the write-off of receivables and inventories. This write-off was necessary because the company's former affiliate in Italy did not meet its financial obligations to the company.

In 1989, Agribusiness revenues increased 15% to \$104 million. Higher selling prices for planting seeds increased revenues by 12% and the remaining increase was due to favorable product mix in specialty vegetable oils. Gross profit increased 24% to \$35 million. Agribusiness gross profit percentage increased to 34% in 1989 from 31% in 1988 as a result of the higher selling prices, offset in part by higher seed costs, both of which resulted from the 1988 drought. Higher selling expenses and traditional research expenses partially offset the increased gross profit in 1989. As a result, segment income from traditional operations was \$1.8 million, an improvement of \$4.2 million over 1988.

In 1989, the company paid \$16 million for the remaining rights to plant science technology developed by Agrigenetics Research Associates Limited and to secure the release of all claims under a related class action suit. The company also acquired the remaining shares of Sungene, a significant provider of strategic contract research. Agribusiness strategic research and development expenses decreased 31% to \$11.9 million in 1989 due to the discontinuance of certain research programs and cost efficiencies obtained because of the Sungene acquisition. In 1989, the loss from strategic Agribusiness activities was \$16.5 million, or \$21.3 million less than in 1988. Included in 1988 was a \$17.1 million special charge for items discussed below.

In 1988, Agribusiness revenues increased 9% due to increased sales volume of specialty vegetable oils. Gross profit as a percentage of sales increased 2% to 31%. Higher marketing and research expenses partially offset the increase in gross profit. As a result, the \$2.4 million segment loss from traditional operations was \$1.9 million less than in 1987. In 1988, strategic Agribusiness activities contributed \$37.8 million to the Agribusiness segment loss. These activities included strategic research expenses of \$17.3 million and special charges of \$17.1 million. The special charges were for the discontinuance of certain biotechnology research programs at Agrigenetics Advanced Science Company and the write-down of an investment.

Working Capital, Liquidity and Capital Resources

The company's cash flows for the years 1988 through 1990 are presented in the consolidated statements of cash flows. Cash provided from operating activities during 1990 was \$114.3 million, a decrease of \$10.6 million compared to 1989. This decrease is primarily the result of \$31.2 million of income taxes paid related to the Genentech gain, the proceeds of which are included in the cash flows from investing activities. The increase in amounts received from customers and paid to suppliers is due to the higher volumes, increased selling prices and higher material costs. In 1989, the decrease in cash provided from operating activities of \$86.9 million was due to the cash received in November 1988 from the patent litigation settlement and lower proceeds received from the sale of investments in 1989.

During 1990, the company's working capital requirements were financed by internally generated funds and short-term borrowings to meet seasonal needs of Agribusiness. As discussed in Note 7 to the financial statements, in 1990 the company received \$105.8 million in cash from the Genentech stock transaction. The company utilized this cash, along with the cash generated from operating activities, principally to fund its capital expenditures, pay dividends and continue its common share repurchase program.

The company acquired 2.4 million of its shares for \$89.5 million, compared to 1.1 million shares for \$40.3 million in 1989. At December 31, 1990, there was outstanding Board authorization for the company to repurchase approximately 1.3 million of its shares.

The company invested \$6.0 million in Mycogen Corporation, a biopesticide company, and paid \$8.1 million for the assets of an oilseed crushing and refining business. As a result of the activities during 1990 discussed above, cash and short-term investments at December 31, 1990, declined by \$5.5 million compared to December 31, 1989.

The company's financial position continues to be strong. The ratio of current assets to current liabilities was 2.7:1 at December 31, 1990, and 3:1 at December 31, 1989. Although this ratio declined at the end of 1990 compared to 1989, the amount of net working capital increased by \$58.2 million during 1990. Long-term debt as a percent of total capitalization (shareholders' equity plus long-term debt) was less than 7.5% at the end of both 1990 and 1989.

The change of \$22.1 million in the amount of the Accumulated Translation Adjustment within Shareholders' Equity for 1990 is due to the weakened U.S. dollar at the end of 1990 compared to 1989, particularly against the French franc and the British pound.

At December 31, 1990, the company had unused revolving credit agreements and other credit lines aggregating \$55 million. The company believes its credit facilities and internally generated funds will be sufficient to meet its capital needs during 1991. The company also believes it has the financial strength to obtain additional credit facilities and other financing as needed.

The company's capital expenditures in 1990 were \$77.4 million, bringing the aggregate capital expenditures over the past three years to \$196.7 million. The approximate percentages of capital spending over this three-year period were 65% to increase, improve or replace productive capacity; 15% for research and testing facilities; and 20% for Agribusiness and other purposes. Capital expenditures, primarily to provide manufacturing, administrative and technical support to the Specialty Chemicals segment, are anticipated to approximate \$85 million in 1991.

In December 1990, the Financial Accounting Standards Board issued SFAS 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions." This statement focuses primarily on postretirement health care benefits. It will require accrual of the expected costs of providing these benefits over the years the employee renders the necessary service to become eligible to receive the benefits. Although the analysis of the impact of adopting this statement is not complete, management believes it will not have a significant impact on the financial condition of the company or its ability to borrow funds. (Refer to Note 10 to the financial statements.)

Consolidated Statements of Income

<i>(In Thousands of Dollars Except Per Share Data)</i>	Year Ended December 31		
	1990	1989	1988
Net sales	\$1,444,758	\$1,220,386	\$1,117,493
Royalties and other revenues	7,943	7,524	8,238
Total revenues	<u>1,452,701</u>	<u>1,227,910</u>	<u>1,125,731</u>
Cost of sales	1,006,341	864,576	783,113
Selling, testing and administrative expenses	207,626	175,474	161,456
Research and development expenses	74,424	69,658	65,320
Total cost and expenses	<u>1,288,391</u>	<u>1,109,708</u>	<u>1,009,889</u>
Gain on sale of Genentech	101,921		
Patent litigation settlement			81,180
Special charges	(9,734)		(31,154)
Other income — net	10,238	8,329	17,287
Interest income	10,526	16,653	8,798
Interest expense	(6,049)	(5,438)	(6,203)
Income before income taxes and accounting change	271,212	137,746	185,750
Provision for income taxes	81,166	43,766	54,544
Income before cumulative effect of accounting change	190,046	93,980	131,206
Cumulative effect of change in accounting for income taxes			8,751
Net income	<u>\$ 190,046</u>	<u>\$ 93,980</u>	<u>\$ 139,957</u>
Net income per share:			
Before accounting change	\$5.34	\$2.52	\$3.40
Cumulative effect of accounting change22
Net income	<u>\$5.34</u>	<u>\$2.52</u>	<u>\$3.62</u>

The accompanying notes to financial statements are an integral part of these statements.

Consolidated Balance Sheets

<i>(In Thousands of Dollars)</i>	December 31	
	1990	1989
Assets		
Cash and short-term investments	\$ 76,100	\$ 81,641
Receivables	258,129	191,964
Inventories	294,986	251,796
Other	39,595	17,765
Total current assets	<u>668,810</u>	<u>543,166</u>
Property and equipment-at cost	886,996	810,706
Less accumulated depreciation	<u>533,445</u>	<u>494,213</u>
Property – net	<u>353,551</u>	<u>316,493</u>
Investments in non-consolidated companies	53,698	51,966
Intangible and other assets	<u>38,537</u>	<u>48,559</u>
TOTAL	<u>\$1,114,596</u>	<u>\$960,184</u>
Liabilities and Shareholders' Equity		
Short-term debt	\$ 12,552	\$ 8,002
Accounts payable	133,757	98,413
Income taxes and other current liabilities	<u>102,042</u>	<u>74,493</u>
Total current liabilities	<u>248,351</u>	<u>180,908</u>
Long-term debt	54,023	53,180
Non-current liabilities	39,663	29,320
Deferred income taxes	<u>36,348</u>	<u>33,512</u>
Total liabilities	<u>378,385</u>	<u>296,920</u>
Common shares without par value – Outstanding 34,698,374 shares in 1990 and 37,008,108 shares in 1989	75,651	78,221
Retained earnings	654,991	601,612
Accumulated translation adjustment	<u>5,569</u>	<u>(16,569)</u>
Total shareholders' equity	<u>736,211</u>	<u>663,264</u>
TOTAL	<u>\$1,114,596</u>	<u>\$960,184</u>

The accompanying notes to financial statements are an integral part of these statements.

Consolidated Statements of Cash Flows

(In Thousands of Dollars)	Year Ended December 31		
	1990	1989	1988
Cash provided from (used for):			
Operating activities:			
Received from customers	\$1,395,667	\$1,220,978	\$1,109,333
Paid to suppliers and employees	(1,206,060)	(1,066,449)	(957,945)
Received from patent litigation settlement			80,000
Income taxes paid	(87,713)	(51,528)	(44,566)
Received from the sale of investments		7,161	16,529
Interest and dividends received	10,181	15,736	11,640
Interest paid	(6,058)	(6,193)	(5,447)
Other - net	8,302	5,200	2,238
Total operating activities	114,319	124,905	211,782
Investing activities:			
Proceeds from sale of Genentech	105,843		
Capital expenditures	(77,407)	(64,721)	(54,611)
Investments in non-consolidated companies	(6,690)	(1,723)	(6,526)
Acquisitions - net of cash acquired	(8,134)	(16,276)	(10,754)
Other - net	1,912	2,691	57
Total investing activities	15,524	(80,029)	(71,834)
Financing activities:			
Short-term borrowing (repayment)	3,240	1,925	(7,682)
Long-term borrowing (repayment)	34	(195)	(238)
Dividends paid	(52,257)	(51,509)	(62,998)
Common shares purchased, net of options exercised	(86,980)	(37,022)	(33,609)
Total financing activities	(135,963)	(86,801)	(104,527)
Effect of exchange rate changes on cash	579	(670)	(3,932)
Net increase (decrease) in cash and short-term investments	(5,541)	(42,595)	31,489
Cash and short-term investments at the beginning of the year	81,641	124,236	92,747
Cash and short-term investments at the end of year	\$ 76,100	\$ 81,641	\$ 124,236

The accompanying notes to financial statements are an integral part of these statements.

Consolidated Statements of Shareholders' Equity

	Number of Shares Outstanding	Shareholders' Equity		
		Common Shares	Retained Earnings	Accumulated Translation Adjustment
<i>(In Thousands of Dollars)</i>				
Balance, December 31, 1987	38,960,822	\$ 77,142	\$ 541,315	\$ 3,176
Net income for 1988			139,957	
Cash dividends (\$1.30 per share)			(50,422)	
Translation adjustment for 1988				(13,252)
Common shares – Treasury:				
Shares purchased	(1,014,760)	(1,574)	(33,726)	
Shares issued upon exercise of stock options	<u>63,849</u>	<u>1,692</u>		
Balance, December 31, 1988	38,009,911	77,260	597,124	(10,076)
Net income for 1989			93,980	
Cash dividends (\$1.38 per share)			(51,509)	
Translation adjustment for 1989				(6,493)
Common shares – Treasury:				
Shares purchased	(1,121,245)	(2,310)	(37,983)	
Shares issued upon exercise of stock options	<u>119,442</u>	<u>3,271</u>		
Balance, December 31, 1989	37,008,108	78,221	601,612	(16,569)
Net income for 1990			190,046	
Cash dividends (\$1.46 per share)			(52,257)	
Translation adjustment for 1990				22,138
Common shares – Treasury:				
Shares purchased	(2,394,757)	(5,097)	(84,410)	
Shares issued upon exercise of stock options	<u>85,023</u>	<u>2,527</u>		
Balance, December 31, 1990	<u>34,698,374</u>	<u>\$75,651</u>	<u>\$654,991</u>	<u>\$ 5,569</u>

The accompanying notes to financial statements are an integral part of these statements.

Notes To Financial Statements

(In Thousands of Dollars Unless Otherwise Indicated)

Note 1 — Accounting Policies

CONSOLIDATION — The consolidated financial statements include the accounts of The Lubrizol Corporation and its majority-owned subsidiaries. For non-consolidated companies (affiliates), the equity method of accounting is used when ownership exceeds 20% or when the company has the ability to exercise significant influence over the policies of the investee. Other affiliates are carried at cost.

INVENTORIES — Inventories are stated at cost which is not in excess of market. Cost of Specialty Chemicals segment inventories is determined by the last-in, first-out (LIFO) method in the United States and the first-in, first-out (FIFO) method elsewhere. Agribusiness inventory cost is determined by the average cost method.

DEPRECIATION AND AMORTIZATION — Accelerated depreciation methods are used in computing depreciation on approximately 67% of the depreciable assets. The remaining assets are depreciated using the straight-line method. Amortization of intangible and other assets is on a straight-line method over periods ranging from 5 to 25 years. For income tax purposes, different methods and rates are used in certain instances. Deferred income taxes relating to temporary differences have been provided.

FOREIGN CURRENCY TRANSLATION — The assets and liabilities of most non-U.S. subsidiaries are translated into U.S. dollars at exchange rates in effect at the balance sheet date. Operating results are translated at weighted average exchange rates in effect during the period. Net unrealized translation adjustments are recorded as a separate component of shareholders' equity.

PER SHARE AMOUNTS — Net income per share has been computed by dividing net income by the average number of common shares outstanding during the period. Net income per share has not been adjusted for the effect of stock options as the dilution effect would be less than 3% in any year.

Note 2 — Inventories

	1990	1989
Finished products	\$108,616	\$100,497
Products in process	95,996	72,367
Raw materials and supplies	90,374	78,932
	<u>\$294,986</u>	<u>\$251,796</u>

Inventories on the LIFO method at December 31, 1990 and 1989 were 24% and 19% of consolidated inventories. The current replacement cost of these inventories exceeded the LIFO cost at December 31, 1990 and 1989 by \$48.1 million and \$37.5 million. At December 31, 1990 and 1989, inventories of the Specialty Chemicals segment were \$223.2 million and \$189.9 million, and Agribusiness inventories were \$71.8 million and \$61.9 million.

Note 3 — Investments in Non-consolidated Companies

	1990	1989
Investments carried at equity	\$45,257	\$39,569
Investments carried at cost	8,441	12,397
	<u>\$53,698</u>	<u>\$51,966</u>

Investments carried at equity exceeded the company's equity in the underlying book values by \$9.1 million and \$14.1 million at December 31, 1990 and 1989. The excess is being amortized over periods not exceeding 20 years. Accumulated amortization of this excess was \$4.4 million and \$8.2 million at December 31, 1990 and 1989.

Included within investments in non-consolidated companies are marketable equity securities having a book carrying value of \$18.6 million in 1990 and \$15.6 million in 1989. The market value of these securities exceeded the book carrying value by \$76 million and \$129 million at December 31, 1990 and 1989.

In December 1989, Lubrizol do Brasil Aditivos, Ltda., previously a 50%-owned equity investee, became a wholly-owned subsidiary when the stock of the other shareholder was redeemed. The effect of consolidating this subsidiary in the 1990 and 1989 financial statements was not significant.

Note 4 — Short-Term and Long-Term Debt

Short-term debt of \$12.6 million and \$8.0 million at December 31, 1990 and 1989 consisted of short-term bank loans.

Long-term debt consists of:

	1990	1989
7.875% Marine terminal/Industrial development revenue bonds, due 2000	\$19,375	\$19,375
Term Loans		
7.99% due 1992	20,000	20,000
5.8% yen denominated, due 1993	13,970	13,194
Other (various rates)	678	611
	<u>\$54,023</u>	<u>\$53,180</u>

The company has available \$55 million under revolving credit agreements and other credit lines, which would permit the company to borrow at or below the U.S. prime rate. These facilities, which were unused at December 31, 1990, may be used to support commercial paper borrowings.

Note 5 — Other Balance Sheet Information

Receivables:

	1990	1989
Customers	\$228,358	\$168,978
Affiliates	9,144	8,912
Other	20,627	14,074
	<u>\$258,129</u>	<u>\$191,964</u>

Receivables are net of allowance for doubtful accounts of \$3.2 million in 1990 and \$1.7 million in 1989.

Included in other current assets at December 31, 1990, is an estimated Federal income tax refund of \$13.2 million pertaining to the years 1979 through 1988 and accrued interest thereon of \$8.0 million. The refund amount relates principally to the utilization of excess foreign tax credits.

Property and Equipment:	1990	1989
Land and improvements	\$ 70,799	\$ 66,459
Buildings and improvements	158,451	140,644
Machinery and equipment	604,929	565,830
Construction in progress	52,817	37,773
	<u>\$886,996</u>	<u>\$810,706</u>

Depreciation expense was \$54.0 million in 1990, \$48.7 million in 1989 and \$46.6 million in 1988.

Intangible and Other Assets:	1990	1989
Plant science technology	\$11,772	\$ 14,033
Goodwill and other intangibles	17,505	18,089
Other assets	9,260	16,437
	<u>\$38,537</u>	<u>\$ 48,559</u>

Accumulated amortization of intangible and other assets was \$24.1 million and \$19.1 million at December 31, 1990 and 1989.

Accounts Payable:	1990	1989
Trade	\$125,341	\$92,905
Affiliates	8,416	5,508
	<u>\$133,757</u>	<u>\$98,413</u>

Income Taxes and Other Current

Liabilities:	1990	1989
Income taxes	\$ 36,072	\$26,946
Employee compensation	35,071	22,236
Taxes other than income	10,279	8,259
Other	20,620	17,052
	<u>\$102,042</u>	<u>\$74,493</u>

Non-current Liabilities:

	1990	1989
Employee benefits	\$22,638	\$ 18,517
Other	17,025	10,803
	<u>\$39,663</u>	<u>\$ 29,320</u>

Note 6 — Shareholders' Equity

There are 2,000,000 shares of serial preferred stock without par value that have been authorized. None of these shares have been issued.

Authorized common stock of the company at December 31, 1990 and 1989 was 120,000,000 shares without par value. Outstanding common shares shown on the balance sheet are after deducting treasury shares of 8,399,573 and 6,089,839 at December 31, 1990 and 1989.

The company has a shareholder rights plan under which one right to buy one-half share of the company's common stock was distributed for each share of common stock held. The rights may become exercisable under certain circumstances involving actual or potential acquisitions of 20% or more of the company's common stock by a person or affiliated persons who acquire such stock without complying with the requirements of the company's articles of incorporation. The rights would entitle shareholders, other than such person or affiliated persons, to purchase common stock of the company or of certain acquiring persons at 50% of then current market value. The rights will expire in 1997 unless earlier redeemed.

The company has another shareholder rights plan under which one right to buy preferred stock of the company was distributed for each share of common stock held. The dividend and redemption value of the preferred stock would be determined in relation to after-tax amounts which have been or may be recovered by the company from Exxon Corporation or its affiliates as a result of certain patent claims. The rights may become exercisable under certain circumstances involving actual or potential acquisitions of 20% or more of the company's common stock by a person or affiliated persons. The rights would entitle shareholders, other than such person or affiliated persons, to purchase shares of preferred stock at a purchase price of \$1 plus 25 rights per share. The rights will expire in November 1991 unless earlier redeemed.

Note 7 — Genentech Gain, Patent Litigation Settlement and Other Items

On September 7, 1990, a merger between Genentech, Inc. and Roche Holdings, Inc. was completed. As a result of this transaction, the company's 5.8 million common shares of Genentech and its warrant to purchase an additional 180,000 common shares were exchanged for \$105.8 million in cash and 3.0 million shares of newly issued Genentech redeemable common stock. The company realized a gain of \$101.9 million on this transaction. After taxes, and related expenses of \$5.1 million, the Genentech gain contributed \$62.9 million or \$1.79 per share to net income. At the option of Genentech, the newly issued common stock may be redeemed in whole, but not in part, at various redemption prices per share that range from \$39.00 at January 1, 1991, and increase to \$60.00 through June 30, 1995.

The special charge in 1990 of \$9.7 million relates to the write-off of receivables due from a former affiliate of Agrigenetics in Italy and for inventories which were dedicated to the market which this affiliate served. The write-off was necessary because the former affiliate did not meet its financial obligations to the company.

The patent litigation settlement in 1988 consisted of \$80 million in cash and \$6 million in trade credits and is presented net of directly related expenses.

The special charges recorded in 1988 include \$17.1 million for discontinuance of certain agricultural biotechnology research programs and the write-down of an investment, and \$14.1 million for write-down of several investments in the venture development area.

Other income-net consists of the following:

	1990	1989	1988
Equity earnings of non-consolidated companies . . .	\$ 3,431	\$ 1,804	\$ 5,024
Gain on sale of investments		5,935	10,242
Write-down of investment		(5,000)	
Gain on investee stock issuance	1,000		
Other — net	5,807	5,590	2,021
	<u>\$10,238</u>	<u>\$ 8,329</u>	<u>\$17,287</u>

Note 8 — Income Taxes

The company adopted Statement of Financial Accounting Standards (SFAS) No. 96, "Accounting for Income Taxes," in 1988, which requires use of the liability method for recording income taxes rather than the deferred method as prescribed by previous accounting standards. As a result of adopting SFAS No. 96, the company reduced its net deferred tax liabilities at January 1, 1988, by \$8.8 million, and recorded that amount in the consolidated statement of income as the cumulative effect of the accounting change.

Income before income taxes consists of the following:

	1990	1989	1988
United States	\$171,278	\$ 48,469	\$ 88,109
Foreign	99,934	89,277	97,641
Total	<u>\$271,212</u>	<u>\$137,746</u>	<u>\$185,750</u>

The provision for income taxes consists of the following:

	1990	1989	1988
Current:			
United States	\$42,281	\$ 4,428	\$26,384
Foreign	41,929	38,709	41,652
	<u>84,210</u>	<u>43,137</u>	<u>68,036</u>
Deferred:			
United States	(4,924)	293	(13,641)
Foreign	1,880	336	149
	<u>(3,044)</u>	<u>629</u>	<u>(13,492)</u>
Total	<u>\$81,166</u>	<u>\$43,766</u>	<u>\$54,544</u>

Foreign taxes include withholding taxes. The United States tax provision includes the U.S. tax on foreign income distributed to the company. The differences between the provision for income taxes at the statutory rate of 34% and the tax shown in the consolidated statements of income are summarized as follows:

	1990	1989	1988
Tax at statutory rate	\$92,212	\$46,834	\$63,155
Settlement of U.S. and foreign tax audits	(6,000)		
Foreign sales corporation earnings	(2,837)	(3,188)	(2,380)
Other, net	(2,209)	120	(6,231)
Tax shown in the statement of income	<u>\$81,166</u>	<u>\$43,766</u>	<u>\$54,544</u>

The components of deferred income tax expense are as follows:

	1990	1989	1988
Depreciation	\$ (543)	\$(1,657)	\$ 1,358
Employee compensation	(1,564)	543	(166)
Partnership expense allocations	(1,165)	(465)	687
Equity of foreign investees	(2,515)	(1,127)	(778)
Asset write-downs	2,683	3,019	(10,741)
Other	60	316	(3,852)
	<u>\$(3,044)</u>	<u>\$ 629</u>	<u>\$(13,492)</u>

U.S. income taxes or foreign withholding taxes are not provided on undistributed earnings of foreign subsidiaries which are considered to be indefinitely reinvested in the operations of such subsidiaries. The amount of such earnings was approximately \$179 million at December 31, 1990. Determination of the net amount of unrecognized U.S. income taxes with respect to these earnings is not practicable. If such earnings were to be repatriated, foreign withholding taxes of approximately \$22 million would be incurred. A portion or all of such withholding taxes may be offset by credits in the United States.

Note 9 — Supplemental Cash Flow Information

The company generally invests its excess cash in short-term investments with various banks and financial institutions. Short-term investments are cash equivalents as they are part of the cash management activities of the company and are comprised primarily of investments having original maturities of less than three months.

The following is a reconciliation of net income to net cash provided by (used for) operating activities:

	1990	1989	1988
Net income	\$190,046	\$ 93,980	\$139,957
Depreciation and amortization	59,529	54,065	50,680
Deferred income taxes	3,749	1,128	(13,478)
Write-down of assets	14,734	5,000	18,317
Gain on sale of Genentech ..	(101,921)		
Distributed (undistributed) earnings of non-consolidated companies ..	(4,178)	650	(4,146)
Change in current assets and liabilities:			
Receivables	(57,034)	(6,932)	(15,698)
Inventories	(32,244)	(8,486)	(20,395)
Accounts payable and accrued expenses	39,716	(8,463)	55,536
Other current assets	(2,146)	(1,762)	75
Increase in non-current liabilities	4,126	3,317	4,681
Accounting change — taxes ..			(8,751)
Other items — net	(58)	(7,592)	5,004
Net cash provided by operating activities ..	<u>\$114,319</u>	<u>\$124,905</u>	<u>\$211,782</u>

In 1990, net cash provided by operating activities is after deducting \$31.2 million of income taxes paid resulting from the gain on sale of Genentech, the proceeds from which are included in investing activities.

Note 10 — Postretirement Benefits

The company has retirement plans, including non-contributory defined benefit pension plans and a profit sharing plan, covering most full-time employees in the United States and non-U.S. subsidiaries. Pension benefits are based on years of service and the employee's compensation. The company's funding policy in the United States is to contribute amounts to satisfy the Internal Revenue Service funding standards and elsewhere to fund amounts in accordance with local regulations. Several defined benefit plans are unfunded. Plan assets are invested principally in listed equity securities and fixed income instruments including insurance contracts.

Expense for all retirement plans was \$12.7 million in 1990, \$8.9 million in 1989 and \$7.8 million in 1988, including profit sharing contributions in the U.S. of \$6.6 million in 1990, \$3.6 million in 1989 and \$4.9 million in 1988.

Net periodic pension cost of the U.S. and significant international defined benefit plans consists of:

	1990	1989	1988
Service cost — benefits earned during period	\$ 6,540	\$ 6,007	\$ 4,671
Interest cost on projected benefit obligation	9,578	8,402	6,355
Actual return on plan assets ...	6,816	(19,554)	(13,029)
Net amortization and deferral ..	(18,816)	8,235	3,660
Net periodic pension cost	<u>\$ 4,118</u>	<u>\$ 3,090</u>	<u>\$ 1,657</u>

The weighted average assumptions used at December 31 were:

	1990	1989	1988
Assumed discount rate	8.0%	8.0%	8.3%
Assumed rate of compensation increase	5.8%	5.7%	6.0%
Expected rate of return on plan assets	8.2%	8.2%	8.3%

The funded status of such defined benefit pension plans and the amounts recognized in the consolidated balance sheets at December 31 are as follows:

	1990		1989	
	Assets Exceed Accum. Benefits	Accum. Exceed Assets	Assets Exceed Accum. Benefits	Accum. Exceed Assets
Fair value of plan assets	\$132,233	\$ 3,236	\$136,381	\$ 2,775
Projected benefit obligation	(114,437)	(21,183)	(93,455)	(17,136)
Plan assets in excess of (less than) projected benefit obligation ..	17,796	(17,947)	42,926	(14,361)
Unrecognized net transition obligation (asset)	(24,074)	3,366	(24,794)	3,385
Unrecognized net (gain) loss	5,044	3,468	(21,179)	1,389
Unrecognized prior service cost	3,889	1,745	2,802	1,347
Minimum liability adjustment		(2,235)		(439)
Accrued pension asset (liability)	<u>\$ 2,655</u>	<u>\$ (11,603)</u>	<u>\$ (245)</u>	<u>\$ (8,679)</u>
Actuarial present value of accumulated benefit obligation	<u>\$ 83,896</u>	<u>\$ 13,410</u>	<u>\$ 66,949</u>	<u>\$ 10,268</u>
Vested benefits	<u>\$ 80,417</u>	<u>\$ 10,861</u>	<u>\$ 63,909</u>	<u>\$ 8,929</u>

The company provides certain postretirement benefits other than pensions, primarily health care, for retired employees. Substantially all of the company's full-time, U.S., Specialty Chemicals segment employees become eligible for these benefits after five years of service and attainment of age 55 at retirement. At December 31, 1990, there are approximately 3400 participants, of which 650 are retirees or their beneficiaries. Participants receiving postretirement health care benefits contribute approximately 25% of the cost of such benefits. These postretirement health care benefits are not funded and are expensed as benefits are paid. The expense for these benefits to retired participants and their beneficiaries was \$1.4 million in 1990 and \$1.1 million in both 1989 and 1988. Generally, the company's non-U.S. employees are covered by government sponsored plans.

In December 1990, the Financial Accounting Standards Board issued SFAS No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions." This statement will require accrual of postretirement benefits (such as health care benefits) over the years the employee provides services and becomes eligible to receive the benefits upon retirement. The impact of this new standard has not been fully determined, but the change will likely result in greater expense being recognized for provision of these benefits. The company has yet to determine if it will adopt this statement prior to the required effective date of 1993 in the U.S. and 1995 elsewhere.

Note 11 — Leases

The company has commitments under operating leases primarily for office space, terminal facilities, land and various office equipment. Rental expense was \$15.2 million in 1990; \$12.8 million in 1989; and \$8.7 million in 1988. Future minimum rental commitments under operating leases having initial or remaining non-cancelable lease terms exceeding one year are \$11.0 million in 1991; \$7.5 million in 1992; \$6.0 million in 1993; \$4.4 million in 1994; \$4.1 million in 1995; and \$29.3 million thereafter.

Note 12 — Forward Exchange Contracts

The company periodically enters into forward exchange contracts to manage currency exposure. At December 31, 1990, the company had short-term forward contracts to sell an aggregate of 191.5 million French francs at various dates during 1991 for \$36.8 million. These contracts are recorded at market value and the gains or losses are recognized immediately and offset the exchange adjustment related to the exposed currency position.

Note 13 — Operations in Geographic Areas

Financial data by geographic area, based on the location of the subsidiary which conducted the activity, is as follows:

	1990	1989	1988
Revenues from customers:			
United States	\$ 631,492	\$ 589,013	\$ 527,208
Europe	470,910	373,229	345,611
Far East	171,171	143,096	130,137
Other	179,128	122,572	122,775
	<u>1,452,701</u>	<u>1,227,910</u>	<u>1,125,731</u>
Intercompany transfers:			
United States	240,087	207,816	163,042
Europe	8,522	8,854	10,691
Other	10,193	5,147	2,929
	<u>258,802</u>	<u>221,817</u>	<u>176,662</u>
Gross revenues	1,711,503	1,449,727	1,302,393
Less: Intercompany transfers	<u>(258,802)</u>	<u>(221,817)</u>	<u>(176,662)</u>
Consolidated revenues	<u>\$ 1,452,701</u>	<u>\$ 1,227,910</u>	<u>\$ 1,125,731</u>
Operating profit:			
United States	\$ 99,245	\$ 65,463	\$ 55,558
Europe	70,544	53,225	50,072
Far East	11,069	12,937	18,116
Other	8,837	13,358	13,465
Eliminations	<u>(1,280)</u>	<u>(11,004)</u>	<u>(1,970)</u>
	188,415	133,979	135,241
General corporate expenses	(24,105)	(15,777)	(19,399)
Gain on sale of Genentech	101,921		
Patent litigation settlement			81,180
Special charges	(9,734)		(31,154)
Other income — net ..	10,238	8,329	17,287
Interest — net	<u>4,477</u>	<u>11,215</u>	<u>2,595</u>
Income before income tax and accounting change	<u>\$ 271,212</u>	<u>\$ 137,746</u>	<u>\$ 185,750</u>
Identifiable assets:			
United States	\$ 659,814	\$ 559,150	\$ 521,877
Europe	282,589	202,405	189,632
Far East	123,930	112,310	97,958
Other	80,992	72,326	52,911
Eliminations	<u>(154,106)</u>	<u>(126,120)</u>	<u>(80,432)</u>
	993,219	820,071	781,946
Corporate assets ...	121,377	140,113	188,725
Total assets	<u>\$ 1,114,596</u>	<u>\$ 960,184</u>	<u>\$ 970,671</u>

Notes:

- A. Intercompany transfers are made at prices comparable to normal unaffiliated customer sales for similar products.
- B. Affiliated companies are not allocated to geographic segments.
- C. Corporate assets consist of short-term investments and investments in affiliated companies.

Note 13 continued

Export sales from the United States to customers, primarily in Latin America and Asia, were \$125 million in 1990 and 1989 and \$110 million in 1988.

Net assets of non-U.S. subsidiaries at December 31, 1990 and 1989 were \$331 million and \$311 million, respectively. Net income of these subsidiaries was \$57 million in 1990, \$52 million in 1989 and \$55 million in 1988; and dividends received from the subsidiaries were \$79 million, \$66 million and \$53 million, respectively.

Note 14 — Business Segment Information

A description of the company's segments and a summary of operating results and identifiable assets by segment are contained on pages 21 and 22. Following is additional industry segment information:

	Capital Expenditures	Depreciation & Amortization
1990		
Specialty Chemicals	\$70,543	\$50,767
Agribusiness	6,864	8,762
	<u>\$77,407</u>	<u>\$59,529</u>
1989		
Specialty Chemicals	\$60,394	\$46,084
Agribusiness	4,327	7,981
	<u>\$64,721</u>	<u>\$54,065</u>
1988		
Specialty Chemicals	\$52,000	\$43,147
Agribusiness	2,611	7,533
	<u>\$54,611</u>	<u>\$50,680</u>

The company's Specialty Chemicals segment has a concentration of sales and receivables in the oil and chemical industries. The ten largest customers in the Specialty Chemicals segment, most of which are international oil companies and a number of which are groups of affiliated entities, accounted for approximately 46% of consolidated sales in 1990, 45% in 1989, and 43% in 1988. Although the largest single group accounted for 11% of sales in 1990, this group is made up of a number of separate entities that the company believes make independent purchasing decisions with respect to Specialty Chemicals. No other single group or customer accounted for 10% or more of sales in either 1989 or 1988.

Note 15 — Employee Stock Options

The 1985 Employee Stock Option Plan provides for the granting of either options intended to qualify as "incentive stock options" under the Internal Revenue Code or "non-statutory stock options" not intended to qualify, up to an aggregate of 1,500,000 shares. Options are granted for terms of up to ten years. Depending on date of issue, options become exercisable in increments of 25% or 50% after one year from date of grant and in 25% annual increments thereafter. The 1981 Incentive Stock Option Plan was superseded by the 1985 Plan, and the 1975 Employee Stock Option Plan expired in January 1985, although outstanding options under both plans are still exercisable. The option price under all plans is the fair market value of the shares on date of grant. All plans permit or permitted the granting of stock appreciation rights in connection with options. When Agrigenetics was acquired, options outstanding under a stock option plan of that company became fully vested and were converted to options to purchase Lubrizol shares, based on the fair market value of Lubrizol shares.

Information regarding these option plans is as follows:

	Number of Shares		
	1990	1989	1988
Outstanding, January 1 ...	678,962	607,693	693,896
Granted at \$33.31 to			
\$43.06 per share	243,350	198,000	
Exercised at \$18.63 to			
\$39.74 per share	(82,873)	(124,893)	(70,154)
Surrendered at \$22.13 to			
\$43.06 per share	(3,638)	(1,838)	(16,049)
Outstanding, December 31.	<u>835,801</u>	<u>678,962</u>	<u>607,693</u>
Exercisable, December 31 .	<u>395,587</u>	<u>296,139</u>	<u>333,443</u>
Available for grant,			
December 31	<u>765,452</u>	<u>1,005,164</u>	<u>1,201,326</u>

The 1975 Plan options expire through November 1994, with an average option price of \$22.33. The 1981 Plan options expire November 1991 to November 1994, with an average option price of \$22.91. The 1985 Plan options expire June 1995 to February 2000, with an average option price of \$34.35. The Agrigenetics options expire December 1991 to July 1994, with an average option price of \$35.01.



Independent Auditors' Report

To the Shareholders and Board of Directors of
The Lubrizol Corporation:

We have audited the accompanying consolidated balance sheets of The Lubrizol Corporation and its subsidiaries as of December 31, 1990 and 1989 and the related consolidated statements of income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 1990. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the finan-

cial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of The Lubrizol Corporation and its subsidiaries at December 31, 1990 and 1989 and the results of their operations and their cash flows for each of the three years in the period ended December 31, 1990 in conformity with generally accepted accounting principles.

Deloitte & Touche

Cleveland, Ohio
February 13, 1991

Quarterly Financial Data (Unaudited)

		Three Months Ended			
		March 31	June 30	Sept. 30	Dec. 31
1990	Net sales:				
	Specialty Chemicals	\$299,896	\$319,537	\$351,499	\$356,596
	Agribusiness	55,642	36,095	13,180	12,313
	Total	<u>\$355,538</u>	<u>\$355,632</u>	<u>\$364,679</u>	<u>\$368,909</u>
	Gross profit:				
	Specialty Chemicals	\$ 87,254	\$100,535	\$102,242	\$108,207
	Agribusiness	22,878	14,577	2,390	334
	Total	<u>\$110,132</u>	<u>\$115,112</u>	<u>\$104,632</u>	<u>\$108,541</u>
	Net income	<u>\$ 29,135</u>	<u>\$ 33,077</u>	<u>\$ 96,308</u>	<u>\$ 31,526</u>
	Net income per share	\$.80	\$.92	\$ 2.74	\$.91
1989	Net sales:				
	Specialty Chemicals	\$287,348	\$293,932	\$267,472	\$268,088
	Agribusiness	55,782	31,690	5,535	10,539
	Total	<u>\$343,130</u>	<u>\$325,622</u>	<u>\$273,007</u>	<u>\$278,627</u>
	Gross profit:				
	Specialty Chemicals	\$ 83,574	\$ 87,599	\$ 78,404	\$ 71,208
	Agribusiness	21,570	12,485	916	54
	Total	<u>\$105,144</u>	<u>\$100,084</u>	<u>\$ 79,320</u>	<u>\$ 71,262</u>
	Net income	<u>\$ 30,700</u>	<u>\$ 26,016</u>	<u>\$ 21,351</u>	<u>\$ 15,913</u>
	Net income per share	\$.82	\$.70	\$.57	\$.43

Most of the sales of the Agribusiness segment are made during the first half of the year, and operating losses are incurred in the third and fourth quarters as a result of incurring operating expenses with low sales. Agribusiness' cost of sales includes certain period costs and, therefore, may exceed sales in a quarter which has low volume.

The third quarter of 1990 includes the gain on the sale of Genentech of \$1.79 per share and a loss of \$.14 per share for the closure of a manufacturing plant in Spain. The fourth quarter of 1990 includes a special charge for the write-off of receivables and inventories of \$.19 per share and a benefit from the settlement of tax audits of \$.17 per share.

Historical Summary*(In Thousands of Dollars Except Per Share Data)*

	1990	1989	1988
Summary of Operations			
Revenues	\$1,452,701	\$1,227,910	\$1,125,731
Cost of sales	1,006,341	864,576	783,113
Selling, testing, administrative & research expenses	282,050	245,132	226,776
Total cost and expenses	1,288,391	1,109,708	1,009,889
Other income (charges)	106,902	19,544	69,908
Income before income taxes	271,212	137,746	185,750
Provision for income taxes	81,166	43,766	54,544
Change in accounting for income taxes			8,751
Net income	<u>\$ 190,046</u>	<u>\$ 93,980</u>	<u>\$ 139,957</u>
For the Year:			
Net income per share	\$5.34	\$2.52	\$3.62
Dividends declared per share	1.46	1.38	1.30
Average Common Shares outstanding (in thousands)	35,560	37,333	38,695
Consolidated Statement of Financial Position			
Current assets	\$ 668,810	\$ 543,166	\$ 573,002
Current liabilities	248,351	180,908	184,888
Working capital	420,459	362,258	388,114
Property - net	353,551	316,493	298,670
Other assets	92,235	100,525	98,999
Total	866,245	779,276	785,783
Less:			
Long-term debt	54,023	53,180	55,339
Non-current liabilities	39,663	29,320	26,851
Deferred income taxes	36,348	33,512	39,285
Net assets - Shareholders' equity	<u>\$ 736,211</u>	<u>\$ 663,264</u>	<u>\$ 664,308</u>
Other Data			
Return on average shareholders' equity	27%	14%	22%
Total assets	\$1,114,596	\$ 960,184	\$ 970,671
Capital investments	92,231	82,720	71,891
Depreciation	53,960	48,682	46,598
At End of Year			
Number of employees	5,169	5,030	4,781
Number of shareholders	6,692	7,370	7,782
Common Shares outstanding (in thousands)	34,698	37,008	38,010
Shareholders' equity per share	\$ 21.22	\$ 17.92	\$ 17.48

1987	1986	1985	1984	1983	1982	1981	1980
\$1,022,277	\$985,182	\$913,351	\$844,175	\$800,303	\$812,247	\$899,161	\$922,697
713,152	695,068	659,130	627,378	588,266	610,717	653,748	644,080
203,236	180,650	158,358	114,501	113,363	107,470	96,006	86,980
916,388	875,718	817,488	741,879	701,629	718,187	749,754	731,060
23,310	19,200	7,582	12,788	15,032	(6,739)	8,168	3,575
129,199	128,664	103,445	115,084	113,706	87,321	157,575	195,212
47,864	50,479	43,221	47,353	48,962	39,760	65,544	83,701
<u>\$ 81,335</u>	<u>\$ 78,185</u>	<u>\$ 60,224</u>	<u>\$ 67,731</u>	<u>\$ 64,744</u>	<u>\$ 47,561</u>	<u>\$ 92,031</u>	<u>\$111,511</u>
\$2.06	\$1.97	\$1.49	\$1.73	\$1.65	\$1.21	\$2.36	\$2.87
1.22	1.17	1.16	1.12	1.08	1.08	1.08	.90
39,559	39,678	40,409	39,138	39,195	39,192	38,986	38,850
\$ 513,342	\$462,982	\$447,441	\$376,050	\$361,964	\$304,542	\$341,825	\$346,001
169,166	162,797	182,543	132,252	129,766	115,255	129,696	136,835
344,176	300,185	264,898	243,798	232,198	189,287	212,129	209,166
297,573	289,078	290,298	251,735	274,337	288,504	284,088	248,664
128,463	125,847	116,706	74,189	46,563	50,698	47,252	56,472
770,212	715,110	671,902	569,722	553,098	528,489	543,469	514,302
56,138	52,616	73,444	30,416	27,213	19,428	25,268	22,846
23,952	16,806	13,161	11,480	10,038	8,961	8,829	13,653
68,489	73,009	65,999	53,483	44,326	38,056	30,854	25,016
<u>\$ 621,633</u>	<u>\$572,679</u>	<u>\$519,298</u>	<u>\$474,343</u>	<u>\$471,521</u>	<u>\$462,044</u>	<u>\$478,518</u>	<u>\$452,787</u>
14%	14%	12%	14%	14%	10%	20%	27%
\$ 939,378	\$877,907	\$854,445	\$701,974	\$682,864	\$643,744	\$673,165	\$651,137
56,460	52,986	103,990	49,001	27,961	64,044	77,214	99,403
47,229	42,591	44,605	38,723	37,038	37,168	32,068	23,414
4,817	4,802	5,205	4,176	4,165	4,322	4,237	4,155
8,335	9,240	10,803	10,804	11,277	10,615	9,986	9,004
38,961	39,691	39,661	39,111	39,195	39,195	39,946	39,863
<u>\$ 15.96</u>	<u>\$ 14.43</u>	<u>\$ 13.09</u>	<u>\$ 12.13</u>	<u>\$ 12.03</u>	<u>\$ 11.79</u>	<u>\$ 11.98</u>	<u>\$ 11.36</u>

**Transfer Agent, Registrar,
and Dividend Disbursing
Agent**

National City Bank
P.O. Box 92301
Cleveland, Ohio 44193-0900
(216) 575-2529

Annual Meeting

The Annual Meeting of Shareholders will be held at the Clarion Hotel & Conference Center, Eastlake, Ohio, on Monday, April 22, 1991.

Form 10-K

The Form 10-K Annual Report to the Securities and Exchange Commission will be available April 1. A copy may be obtained without charge upon written request to the Secretary of the Corporation.

Shareholder Information

The Common Shares of The Lubrizol Corporation are listed on the New York Stock Exchange under the symbol LZ. The number of shareholders of record of Common Shares was 6,809 as of February 8, 1991.

DIRECTORS**L. E. COLEMAN**

Chairman of the Board and Chief Executive Officer

W. G. BARES

President and Chief Operating Officer

EDWARD F. BELL

President and Chief Executive Officer of Ohio Bell, an Ameritech subsidiary, which provides telephone service, data transmission and other advanced telecommunications services to residential and business customers in Ohio. The company serves approximately three-fifths of the state's population.

ANDRE GILLET

Retired Chairman and Chief Executive Officer of International Multifoods Corporation, a diversified food company.

DAVID H. HOAG

President and Chief Executive Officer of The LTV Corporation and Chief Executive Officer of LTV Steel Company. The LTV Corporation is a diversified company engaged in the production of steel, energy equipment and aerospace and defense systems.

THOMAS C. MacAVOY

Professor of Business Administration, Darden School, University of Virginia and Retired Vice Chairman of the Board of Corning, Inc., a diversified glass and glass products company.

RICHARD A. MILLER

Chairman and Chief Executive Officer of Centerior Energy Corporation, holding company for two electric utilities, The Cleveland Electric Illuminating Company and The Toledo Edison Company.

RENOLD D. THOMPSON

President, Chief Executive Officer and a Director of Oglebay Norton Company, a raw materials and Great Lakes marine transportation company.

KARL E. WARE

Chairman and Chief Executive Officer of Ware Industries, Inc., a company which designs, manufactures and markets a broad range of specialty wire forms and steel components.

OFFICERS**L. E. COLEMAN**

Chairman of the Board and Chief Executive Officer

W. G. BARES

President and Chief Operating Officer

PHILIP L. KRUG

Executive Vice President

GEORGE R. HILL

Senior Vice President

ROGER Y. K. HSU

Senior Vice President

WILLIAM D. MANNING

Senior Vice President

ROBERT W. SCHER

Senior Vice President

RAY A. ANDREAS

Vice President and Chief Financial Officer

JEAN-POL ARZUL

Vice President

R. JOHN SENZ

Vice President

JOHN A. STUDEBAKER

Vice President

JOHN R. AHERN

Controller

WILLIAM R. JONES

Treasurer

J. I. RUE

Secretary



29400 Lakeland Boulevard
Wickliffe, Ohio 44092
(216) 943-4200

SPECIALTY CHEMICALS

LUBRIZOL PETROLEUM CHEMICALS COMPANY
LUBRIZOL BUSINESS DEVELOPMENT COMPANY

Principal Subsidiaries and Branches

Lubrizol A.G. (Switzerland)
Lubrizol Australia
Lubrizol do Brasil Aditivos, Ltda.
Lubrizol Canada Limited
Lubrizol de Chile Limitada
Lubrizol Eastern Pacific Limited
(Hong Kong)
Lubrizol Enterprises, Inc.
Lubrizol Española, S.A.
Lubrizol France, S.A.
Lubrizol Gesellschaft m.b.H.
(Austria)
Lubrizol G.m.b.H. (Germany)
Lubrizol Great Britain Limited
Lubrizol International, Inc.
Lubrizol Italiana S.p.A.
Lubrizol Japan Ltd.
Lubrizol Limited (England)
Lubrizol de Mexico S. de R.L.
Lubrizol S.A. (Belgium)
Lubrizol Scandinavia AB
Lubrizol Servicios Tecnicos
S. de R.L. (Mexico)
Lubrizol South Africa
(Proprietary) Limited
Lubrizol Southeast Asia
(Pte.) Ltd. (Singapore)
Lubrizol de Venezuela C.A.
Gate City Equipment
Company, Inc.
Resource Development, Inc.

Affiliates

Lubrizol India Limited
Industrias Lubrizol S.A.
de C.V. (Mexico)
Lubrizol Transarabian Company
Limited (Saudi Arabia)
C.A. Lubricantes Quimicos
L.Q. (Venezuela)
SOLUB Product Application
Laboratory (Ryazan, USSR)

Manufacturing Plants

Painesville, Ohio
Bayport, Texas
Deer Park, Texas
Atlanta, Georgia
Sydney, Australia
Rio de Janeiro, Brazil
Niagara Falls, Canada
Bromborough, England
LeHavre, France
Rouen, France
Bombay, India
Kinuura, Japan
Apodaca, Mexico
Yanbu, Saudi Arabia
Jurong, Singapore
Durban, South Africa
Valencia, Venezuela

Laboratories

Chemical Research
Wickliffe, Ohio
Mechanical Testing
Atsugi, Japan
Hazelwood, England
Wickliffe, Ohio

AGRIBUSINESS

AGRIGENETICS COMPANY

Seed Divisions

AgriGene Seed Research
Des Moines, Iowa
Golden Acres Seed Company
Croton, Ohio
GroAgri Seed Company
Lubbock, Texas
Jacques Seed Company
Prescott, Wisconsin
McCurdy Seed Company
Fremont, Iowa
SIGCO Research
Breckenridge, Minnesota
Taylor-Evans Seed Company
Tulia, Texas
R.C. Young and Company
Lubbock, Texas

Specialty Vegetable Oil Division

SVO Enterprises
Eastlake, Ohio

Affiliates

Dectesca S.A.
(Venezuela)
Eurograin Semences, S.A.
(France)

Laboratories

AgriGenetics Laboratories
Biotechnology Research
Madison, Wisconsin

 **LUBRIZOL**

