

Lubrizol

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THE LUBRIZOL CORPORATION 1977 ANNUAL REPORT

FINANCIAL HIGHLIGHTS

	1977	1976	% Increase
Total revenues	\$514,711,000	\$457,265,000	13
Net income	58,069,000	50,957,000	14
Net income per share	2.96	2.52	17
Dividends per share	1.25	1.05	19
Capital expenditures	22,982,000	19,420,000	18
Depreciation	14,270,000	13,800,000	3
Research and development expenditures	19,246,000	17,033,000	13
Shareholders' equity	271,783,000	261,633,000	4

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TO OUR SHAREHOLDERS

Lubrizol, as it enters its 50th year, is in a strong and sound condition. The company was founded in Cleveland, Ohio on July 28, 1928, by Thomas W. James, F. Alex Nason, Frank A. Nason, Kelvin Smith, Kent H. Smith and Vincent K. Smith and, during the span of half a century, has grown into a worldwide business. Its prospects remain bright.

Revenues for 1977 increased 13% and net income, 14%. As a result of the higher level of chemical treatments being used in lubricants and greater market penetration, physical volume rose 10%.

Dividend payments totaled \$24.8 million and the amount paid per share increased for the 15th consecutive year.

Return on average shareholders' equity was 22%, making 1977 the 13th consecutive year in which the return has been at or above the 20% level.

The company has no long-term debt and pension fund assets exceed the actuarially computed value of vested benefits.

Cash and short-term investments at year-end totaled \$39 million compared with \$58 million in 1976. In January 1977, 625,000 shares of Lubrizol stock were purchased for \$23 million.

Research and development expenditures during 1977 totaled \$19 million. Emphasis continued to center on the development of additive systems to improve lubricants and fuels. Capital expenditures for the year were \$23 million. Capacity for manufacturing several additives was increased and construction of the Port Arthur, Texas polyisobutene plant got under way.

A \$20 million manufacturing plant will be built near Rio de Janeiro, Brazil, by Lubrizol and Shell Brasil S.A. as a joint venture in which each company will own 50%. The joint venture company, I.A.B. - Industria de Aditivos do Brasil, will produce and market lubricant additives for the Brazilian market. Construction is expected to take about two years.

In July, Lubrizol purchased for \$2.3 million, a 40% interest in Greenwich Oil Corporation, an oil production company, headquartered in Dallas, Texas. Greenwich's principal business is that of seeking by means of thermal enhancement to recover oil which cannot be brought to the surface by conventional means.

Last fall, the United States Court of Appeals invalidated a regulation put into effect in 1975 by the EPA that required the registration of engine oil additives. The Court agreed with Lubrizol's position that the EPA had arbitrarily expanded the meaning of the term "fuel" in the Clean Air Act to include motor vehicle engine oil, and that such action represented an unwarranted intrusion upon the legislative function of Congress.

In executive changes during 1977, Douglas W. Richardson was elected Vice Chairman of the Board and a Director and Donald L. Murfin was elected Secretary.

The world demand for lubricating oils and fluids is approximately 6.5 billion gallons annually. Lubrizol's business is essentially that of developing and supplying chemical additives which improve these oils and fluids, permitting them to last longer and perform more work. Energy conservation has come into sharp focus and the various requirements in this regard, which are in place or in progress, point to a higher value of additive per unit of lubricant, either through increased content or the utilization of more complex systems.

A number of developments of this type are discussed in the following pages. Particular attention is given to the diversified, end-use markets for Lubrizol's products and the opportunities for the further growth within those fields.

Lubrizol employs over 3,600 people. We wish to express our appreciation to these men and women. Through their achievements, 1977 was a highly successful year and through their efforts, the company strengthened its position for the future.

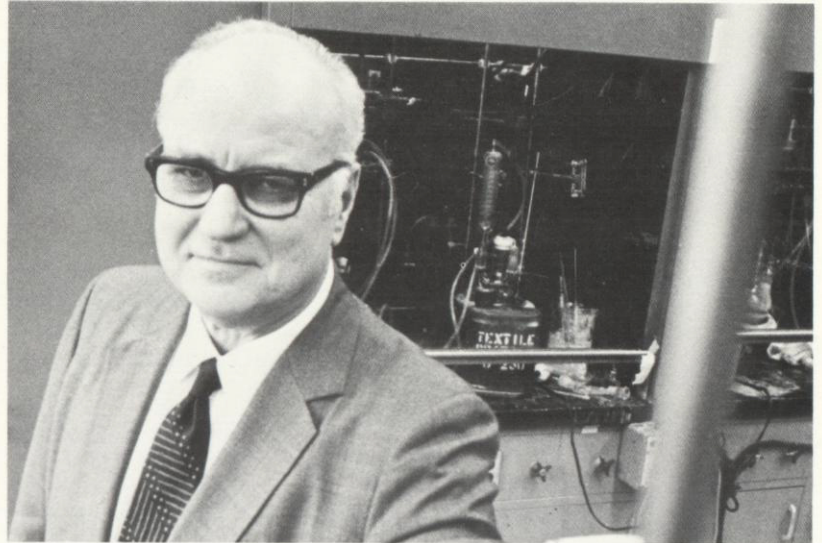
T. W. Mastin

T. W. Mastin
Chairman of the Board

L. E. Coleman

L. E. Coleman
President

March 22, 1978



T. W. Mastin



L. E. Coleman

Lubrizol — Serving World Petroleum Markets

We live in an automotive society.

The passenger car takes us to and from work, back and forth from suburbs; the family car, to church, social events, to the seashore and the mountains.

Without the earthmover, the bulldozer and the backhoe, suburbia could not have been created. Without the delivery truck, it might not exist.

The heavy-duty interstate truck transports all manner of goods to our cities and factories. Huge power shovels mine our coal and our ore. The farm tractor, reaper and combine help provide our food.

It would be difficult to imagine how we would accomplish present day tasks, where we would live, or how we would manage our daily lives without automotive equipment.

There are more than 350 million cars, trucks and buses in the world today, carrying out a wide variety of tasks. Without proper lubricants these vehicles would not operate efficiently or, indeed, might not run at all.

To evaluate this need, we might visualize metal parts moving in a sliding action, in close contact, rapidly and for an extended time. The piston in a car moves up and down within the cylinder about 2,500 times per minute at highway speeds, for example. Without lubrication, the metal parts would not slide properly. Scuffing and wear would occur. If an abrasive element such as dirt were introduced, the problem would become exaggerated.

Over a period of time, the lubricant itself may become contaminated, either through the buildup of dirt or from the acidic by-products of combustion. Considering too that the temperature of the engine oil may reach 350°F, the lubricant can literally come apart through oxidative breakdown. Sludge and hard varnish may form and coat moving parts or plug lubricant passages. In any case, the engine will have lost its protection and expensive repairs are likely.

The problems which arise are in many instances more complex than these illustrations suggest. There have been successive technological advancements throughout the history of the auto industry. These changes, whether for increased comfort, improved styling, better performance, greater reliability, or for the purpose of environmental protection, have placed an increasingly severe load on the lubricants. Moreover, not only the engine but also the transmission and the gears must be taken into account.

A number of years ago it was discovered that chemicals could be added to oil to improve its performance. Lubrizol was one of the pioneers in this field and development of these chemicals, which are sold to the petroleum industry and used throughout the world, has been its principal business ever since. Since 1978 will mark the company's 50th anniversary, a brief episode taken from its earlier days helps to illustrate how these matters transpired.

In the 1930's, the General Motors Corporation adopted a policy stressing high-quality lubricants. Mr. F. Alex Nason, a Lubrizol founder then in charge of sales, learned of this and went to Detroit to offer his services. Since Lubrizol was only in its third year and the use of chemicals in lubricants had not become established, we can imagine the skepticism. Nevertheless, tests of a new "break-in" motor oil developed by the company were run and the results achieved were remarkable. The "Lubri-Zol" motor oil was placed on the list of recommended lubricants for Buick cars and Lubrizol went on to new challenges.

The passenger car, the heavy-duty truck, the farm tractor, are complex machines. In view of their complexity, there is a great deal that could go wrong. We find, however, that this usually is not the case, and rather remarkably so. Cars with a mileage equivalent to three or four trips around the world and relatively minor repairs are not uncommon. Trucks and heavy-duty equipment readily endure almost continuous use, day in and day out, for a number of years, with minimum maintenance and overhaul.

One of the reasons for this is that the auto

equipment manufacturers and the petroleum and chemical industries have made a continuous effort to assure that appropriate, high-quality lubricants are generally available, and, indeed, that the standards for these are upgraded each time new technical developments so require.

Much of this effort is carried out behind the scenes. These industries, working in conjunction with technical societies both in the United States and abroad, have developed rigorous tests and specifications to evaluate and define lubricant performance. Once developed, products meeting these standards are specified in the equipment manufacturers' operating manuals and warranty handbooks. The manufacturer has a strong interest in assuring the reliability of his equipment, but the ultimate beneficiary is, of course, the consumer.

Lubrizol specializes in the development of additive systems relating to each customer's needs in meeting these standards. This requires a sustained effort in chemical research. The cumulative total of its research and development expenditures for the past five years is approximately \$80 million.

Mechanical testing, both in automotive equipment in the laboratory and in car and truck fleets, is essential. This work is important not only in evaluating promising new chemical developments but also in qualifying particular lubricant formulations to meet established standards of performance. More than 12 million miles are logged in testing programs of this type each year.

These chemicals are manufactured at Lubrizol plants in the United States, Canada, Mexico, England, France, Spain, South Africa, Australia, India and Japan. This diversity of manufacturing is an important asset. As a supplier to international petroleum companies, Lubrizol itself must be international and have the ability to supply from a number of different points.

Lubrizol has sales and technical service offices in 32 countries. During 1977, the company supplied more than 800 chemical additives to its customers in more than 100 different countries. These represented over

CHART I

Geographic Distribution of Sales

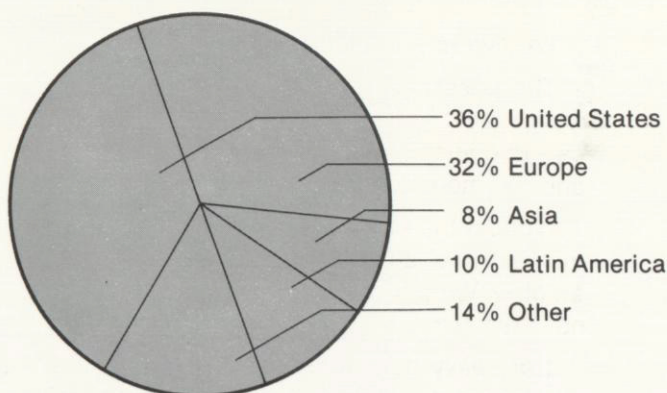
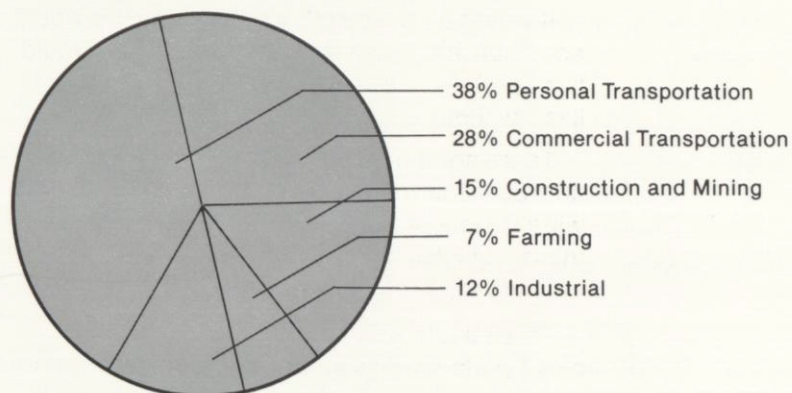


CHART II

End-use Distribution of Sales



1,300 separate accounts. Chart I shows the geographic distribution of additive shipments to customers in terms of sales.

The products supplied to these customers were detergents, dispersants, viscosity improvers, oxidation inhibitors, extreme pressure agents, friction modifiers, pour point depressants, rust and corrosion inhibitors and other specialty chemicals, in a wide range of variations and usually in multifunctional, additive systems. As a general classification, these additive systems are used in lubricants and fuels, or more specifically, in engine oils, automatic transmission fluids, gear lubricants, industrial fluids, and gasoline and diesel fuel. The diversified use of these chemicals in various segments of the economy is shown in Chart II.

Personal Transportation

Development of the passenger car of today's general design started nearly 100 years ago. The type of gasoline engine used in most automobiles today was first built in Germany in 1885, by Daimler and by Benz, who had been experimenting separately. A French carriage firm is credited with developing the first, rudimentary automobile, using a Daimler engine.

By the early 1890's, American inventors were experimenting in the field and prior to the turn of the century, Ford, King, Olds and Winton had introduced gasoline cars. Ford brought out his famous Model T in 1908.

Today, only 70 years later, there are more than 280 million cars throughout the world and their number keeps growing by several million new vehicles each year.

Lubrizol's association with the automobile began 50 years ago, upon its founding in 1928. The first product of the company, then The Graphite Oil Products Company, was a suspension of graphite in oil used to eliminate the bothersome squeaking of leaf springs.

Within the first five years of its existence, the company introduced several more products. The first of these was a high film strength additive used in engine oils to reduce the lengthy "break-in" period then needed for passenger cars. By 1932, a gasoline additive, "Solvenized Concentrate", was being marketed and in the following year, a successful additive for gear lubrication was introduced.

The establishment of quality standards for lubricants by the military services at the outset of World War II had a profound effect. Once performance based on scientific evaluation became the standard, additives were here to stay.

Subsequently, this concept was introduced for the civilian market. Today, the highest

designation for passenger car engine oils is "SE", a classification adopted in 1972. To qualify for this designation, the oil formulation must pass a series of engine tests designed to measure its properties with respect to oxidative breakdown, engine deposits and rust and corrosion.

While extension of the oil change interval was not one of the SE requirements, the specification had that effect by reason of its added protection. The owners' manuals for the latest model U.S. cars call for oil changes after 7,500 to 10,000 miles service. Without additives, this would not have been possible.

A new classification, temporarily designated PS-1, may extend this to 15,000 miles, or one year. Procedures for a more severe antiwear and oxidation test and a new sludge and varnish test may be issued this fall, with final adoption of the classification in 1979. Additional additives will be needed to provide the required endurance.

Another classification, temporarily designated PS-2, is being developed with respect to fuel efficiency. An interim procedure for measuring this property in engine oils may be issued this fall but final adoption of this classification is not expected before 1980 or 1981.

Most of the gasoline consumed by a typical automobile engine ends up as waste heat, with only about 20% being converted into useful work. Five percent is lost due to friction within the engine and the drive train, and a reduction of this loss is achievable through improved lubrication. A reduction to simply 3% would save over three billion gallons of gasoline per year on a worldwide basis.

In anticipation of these new requirements, some superior quality engine oils are already on the market and more oils of this type can be expected in the immediate future. Significant opportunities for additive usage are presented.

PERSONAL TRANSPORTATION

Additive systems for engine oils, transmission fluids, gear lubricants, and fuels used in automobiles, recreational vehicles, motorcycles, snowmobiles and boats.



A further development concerns the increased use of diesel engines for passenger cars. The diesel engine has a 25% advantage with respect to fuel economy, partly due to the higher energy content of diesel fuel. However, the combustion of diesel fuel produces carbonaceous particulate matter which contaminates the oil, necessitating the use of special metallurgy and frequent oil changes to prevent excessive wear. An opportunity is presented to develop an oil that would eliminate this problem.

New developments are also in progress with respect to gear oils for passenger cars. By using lower viscosity gear lubricants, friction can be reduced and fuel savings in the order of 2% can be achieved. Savings of this magnitude have taken on added significance because of the recent legislation in the United States with respect to mileage requirements.

In another area of personal transportation, the use of recreational vehicles and outdoor equipment such as motorcycles, snowmobiles and boats has increased. Two-cycle engines which require a mixture of gasoline and oil are often utilized in equipment of this type. Lubrizol introduced a new additive system for this market last fall.

Commercial Transportation

The commercial transportation of goods and passengers is a major enterprise throughout the world.

An important segment of this field concerns the transportation of freight, bulk commodities and general cargo by trucks, railroads, ships and other vessels. All of these use lubricants, but the formulations are frequently different from those in the field of personal trans-

portation. So, indeed, are the economic factors. The level of factory output has a direct and immediate bearing on trucking, for example.

There are more than 70 million trucks and buses in use today around the world. Most of these vehicles are light trucks powered by gasoline engines and employed in short-haul, local delivery. Generally, light trucks use the same lubricants as passenger cars.

The principal vehicles in the long-haul trucking industry are the heavy-duty type, which are generally classified as trucks that weigh over 26,000 pounds. In that statistic alone, we can discern that these vehicles are substantially different from the passenger car. Further differences become readily apparent. Heavy-duty trucks may have as many as 20 forward speeds and 4 in reverse, and most of these vehicles are powered by diesel engines.

In contrast to the 4 or 5 quart capacity for passenger cars, the engine oil reservoir for heavy-duty trucks may contain up to ten times that amount. One of the reasons for this is that oil consumption is high. A rate of 400 or 500 miles per quart is not unusual for a diesel, for example.

A number of developments are in progress with respect to engine oils for vehicles of this type. Energy considerations are necessitating an increase in the oil change interval, with the target set at doubling the current average to 40,000 miles by 1980. For the same reason, there is a desire to reduce oil consumption.

Development of these longer-life engine oils for trucks suggests a higher additive content, and more sophisticated systems. This has been the pattern followed in the development of these products for passenger cars. Moreover, with extended life, 15W-40 multigrade engine oils will become more of a factor.

COMMERCIAL TRANSPORTATION

Additive systems for heavy-duty engine oils, gear lubricants and fuels used in trucks, buses, diesel locomotives and ships.



Gear oils are of major importance to the trucking industry by reason of the higher loads and heavier stresses which develop. Lubrizol has been a major factor in the development of additives for this application and, during 1977, introduced a new additive system to help save fuel.

The new, fuel-efficient formulation is an 80W-140 multigrade gear oil. Using lubricants of this type, fuel savings of up to 2.8% have been demonstrated in over-the-road testing in truck fleets. By reason of the large quantities of fuel consumed in truck fleet operations and rising fuel prices, this will produce a significant saving in energy costs.

The additive content of this new lubricant has risen about sixfold, chiefly by reason of the introduction of a special, shear-stable viscosity improver, manufactured at the Deer Park, Texas plant. Since the principal purpose of gear lubricants is to protect the gears, care must be taken to assure that there is no loss of this quality. Through the use of a balanced system, these new gear oils retain this important function.

Construction and Mining

Mankind has been engaged in construction and mining for several thousand years. The Great Pyramid was built around 3000 B.C. The stone blocks were quarried from a site several miles away.

If we move down to the time of Julius Caesar, about 50 B.C., we find that the ancient Romans were excellent engineers who constructed roads, buildings, bridges, aqueducts, dredged harbors and built major encampments and fortifications.

These were marvelous feats, as we look back over the centuries, but they are made

more marvelous still when we recognize that they were accomplished essentially by manual labor. According to one historical account, 100,000 slaves worked 20 years to build the Great Pyramid. Slaves also worked the mines.

Human dignity and simple economics would rule out such practices today. We can accomplish more, quicker, and with substantially less effort, with bulldozers and backhoes, earthmovers, scrapers and graders, and giant power shovels that consume up to 40 cubic yards at a bite. Automotive vehicles of this type are often classified as off-highway equipment, as explained by their work sites. Lubrizol's association with this field dates back many years.

In the late 1930's, the Caterpillar Tractor Company introduced a diesel engine of advanced design for its construction equipment. The engine was a significant improvement, but at least momentarily its success was in doubt. The piston rings tended to stick after a relatively few hours of operation and this eventually led to engine failure. The introduction of chemical additives in the engine oil formulation solved the problem.

As in the case of trucks and other heavy equipment, the lubricant capacity of construction vehicles can be measured in gallons rather than quarts. Moreover, since payroll costs generally continue although the equipment is down and the downtime delays the project, high-quality lubricants take on added importance. Lubrizol chemicals help supply the properties needed in engine oils, gear lubricants and hydraulic fluids for these vehicles.

In mining, the equipment falls into two principal categories. Gasoline and diesel-powered trucks, huge shovels and other automotive equipment are employed in surface and

CONSTRUCTION AND MINING

Additive systems for engine oils, hydraulic fluids, gear lubricants and fuels used in power shovels, bulldozers and graders, backhoes, trucks and underground mining equipment.



open pit mining. Again, quality engine oils, gear oils and hydraulic fluids are needed. In underground mining, on the other hand, health and safety requirements often necessitate equipment powered by electricity or by compressed air and different considerations are involved. Hydraulic fluids, particularly of the fire-resistant type, are of importance, however, and Lubrizol also makes additives for this application.

Farming

Providing the basic necessities of life such as food, clothing and shelter has always been one of mankind's principal concerns. As a result, farming of one sort or another has been a major occupation since the earliest times.

Even today throughout much of the world over half of the people live on farms. In some areas, the wooden plow which goes back to Biblical times is still in use. Barely enough food is produced to feed the farmer's family. In a number of countries, however, sufficient food is produced not only to meet domestic needs but also, through exports, to help meet the needs of other nations.

Mechanization and the adoption of scientific methods of farming have made the difference. Without the tools and techniques of modern farming, much of the world would go hungry.

With a world population of more than four billion people and a substantial number of new citizens being added each year, the need for the greater production of food will become increasingly important. Farming, as it has been for thousands of years, will remain one of our most vital occupations.

The workhorse of the modern, mechanized farm is the tractor. A variety of other machines

such as harvesters, threshers, combines and, of course, trucks is also needed. The principal lubricants for farm equipment are engine oils, hydraulic fluids and gear oils. Lubrizol supplies additives used in these lubricants by farmers throughout the world.

There are more than 16 million tractors on farms and they provide the chief source of power for modern agriculture. Until rather recently, most tractors were gasoline powered and their basic function was to provide the power to draw plows, tillers and other implements. No special lubricants were required.

The modern tractor, in comparison, is a substantially more complex, diesel-powered machine. Its standard features include sophisticated, hydraulic mechanisms to actuate farm implements and complex power take-offs which can deliver up to 150 horsepower to operate other agricultural equipment. The dry automotive-type brakes have been replaced with lubricant-immersed wet brakes, used not only in stopping but also as an adjunct in steering on soft ground. New fluids incorporating better additive technology have been required to keep pace with these developments.

The variety of equipment employed in farming gives rise to the need for a number of lubricants. Maintaining an adequate inventory of each type is a problem and the possibility of inadvertently using the wrong lubricant is present. Lubrizol has developed an additive system for a new type of lubricant called "Super Tractor Oil Universal." This premium lubricant permits the farmer to use a single oil to meet his various needs, without sacrificing protection or efficiency. The universal lubricant serves as an engine oil, hydraulic fluid and as a gear oil. These special lubricants have been well received in Europe and are beginning to enter the U.S. market.

FARMING

Additive systems for engine oils, tractor hydraulic fluids, gear lubricants and fuels used in farm tractors, trucks, combines and harvesters.



Industrial Markets

Lubrizol makes a variety of chemicals for industrial purposes. These include chemical additives for industrial oils, metal finishing chemicals, and AMPS™ monomer.

A substantial quantity of oils and fluids is used for industrial purposes. For example, the demand in the U.S. market for lubricants for the automotive field is placed at about 1.3 billion gallons per year. Essentially this is the usage described in the previous sections of this report, although on a worldwide basis. The U.S. demand for non-automotive, industrial oils and fluids, in comparison, is estimated at 800 million gallons per year.

Lubrizol is a leading supplier of chemical additives for both the automotive and the industrial markets. By reason of the more sophisticated treatments, the volume of additives for automotive applications is disproportionately higher. However, the need to use petroleum more sparingly and the increasing adoption of regulatory measures regarding the environment, health and safety suggests the possibility of growing use in the industrial field.

Industrial oils are usually classified as either machine fluids or metalworking fluids. Among the machine fluids, hydraulic fluids, engine oils and gear lubricants are important categories.

The principal function of industrial hydraulic fluids is to transmit energy in various types of stationary equipment such as the large presses and stamping machines used in shaping and forming metals. Most of these fluids are additive-treated mineral oils. Particularly from the standpoint of safety but also from the standpoint of conservation, water-in-oil fluids,

the so-called invert emulsions, which contain up to 50% water, are also used. Lubrizol makes additives for both of these applications.

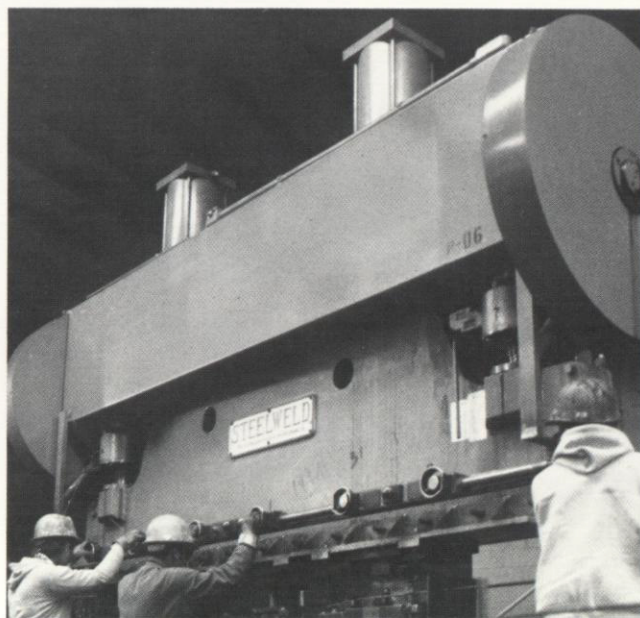
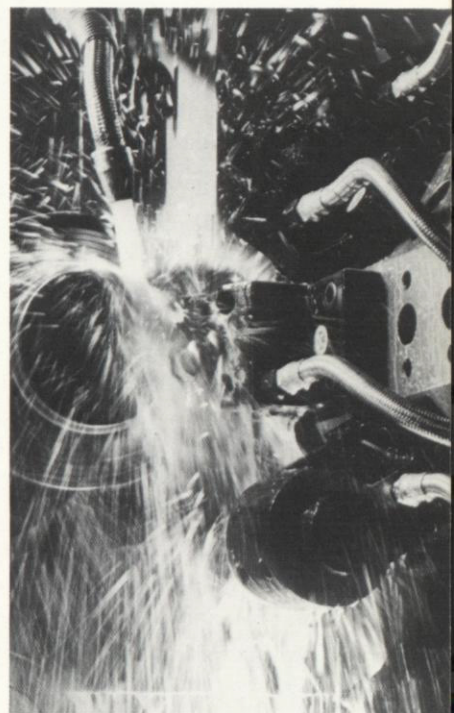
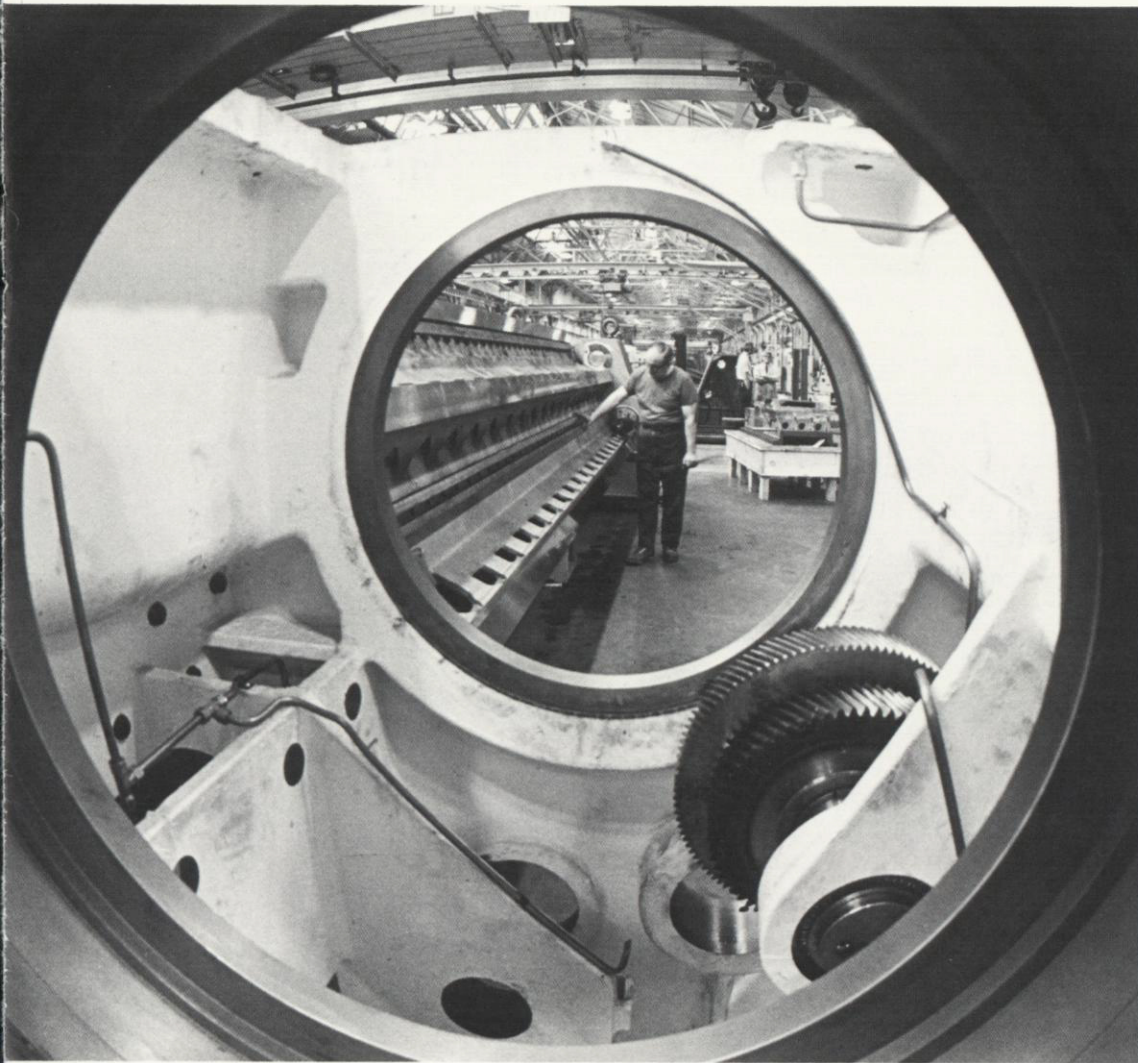
The industrial oils for metalworking include cutting fluids, rolling oils, drawing compounds and rust preventives. Cutting fluids are also utilized in shaping metal, but to the more exacting degree required in the machining of precision parts. Since there is a buildup of heat in such operations, the fluid, in addition to imparting lubricating qualities, acts as a coolant. For this reason, oil-in-water emulsions account for more than half the market. These are usually supplied as concentrates with the water added at the plant. Again, by reason of the interest in conservation, Lubrizol is seeking to develop improved fluids of this type.

Lubrizol has had a long-term interest in specialty chemicals for metal finishing. These activities are now centered in The R. O. Hull & Company, Inc., a wholly-owned subsidiary. The line of products being offered by Hull includes brighteners, coatings and treatments to provide decorative trim and corrosion resistance on metal parts for auto and appliance manufacture.

In a different area of the industrial field, Lubrizol manufactures and sells AMPS, a water soluble, ionic monomer currently being used to improve the dye receptive properties of certain synthetic fibers and in polyelectrolites for water treatment. By reason of the demand in its present applications as well as the potential for other applications, production of AMPS monomer is being increased. An \$8 million facility will be constructed at the Bayport, Texas plant and is scheduled for completion early in 1980.

INDUSTRIAL MARKETS

Additive systems for hydraulic fluids, cutting fluids and gear lubricants used in hydraulic presses, stamping and forming equipment and machining operations; metal finishing and specialty chemicals.



1977 vs. 1976

Worldwide revenues amounted to \$514,711,000 in 1977, an increase of 13% over the \$457,265,000 for 1976. This increase was primarily due to a 10% increase in volume.

Cost and expenses increased 14% for the year, principally a result of the volume increase and general inflation. Increased testing for customers and the change to the LIFO method of valuing certain inventories were also factors.

After tax exchange losses were \$41,000 in 1977 as compared with \$2,551,000 in 1976. The decrease in exchange losses accounted for the improvement in other income (charges), equity in earnings of affiliated companies and the reduction in the effective income tax rate.

Net income increased 14% to \$58,069,000 primarily due to higher volume and the reduction in exchange losses.

1976 vs. 1975

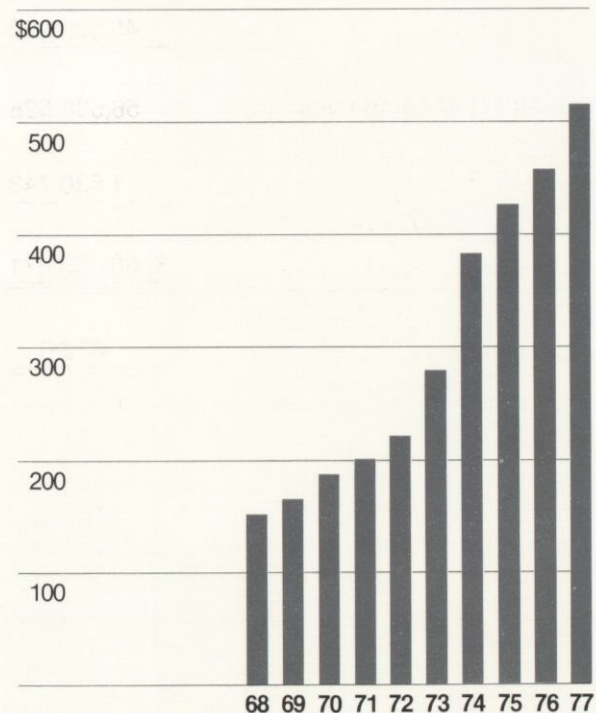
Revenues increased 7% and cost and expenses increased 4%. Income from operations in relation to revenues increased 3%. The improvement was principally due to a 5% increase in volume and the consolidation of Nippon Lubrizol Industries Corporation.

Other income decreased in 1976 because of \$4.4 million in exchange losses which were offset by the reversal of an equipment write-off in 1975 and miscellaneous income items.

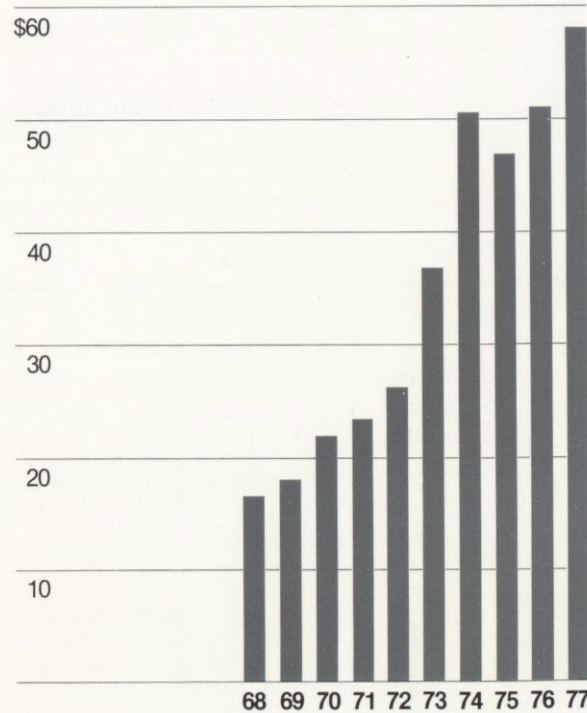
The effective income tax rate increased 3% mainly because certain foreign income was subject to higher rates.

The decrease in earnings of affiliated companies reflected the devaluation of the Mexican peso and the consolidation in 1976 of Nippon Lubrizol Industries Corporation.

Total Revenues
Millions



Net Income
Millions



CONSOLIDATED STATEMENTS OF INCOME

	Year Ended December 31	
	1977	1976
Revenues:		
Net sales	\$507,120,968	\$450,853,604
Royalties and fees	<u>7,589,851</u>	<u>6,411,046</u>
Total	<u>514,710,819</u>	<u>457,264,650</u>
Cost and expenses:		
Cost of sales	354,608,417	311,211,000
Selling and administrative expenses	37,499,152	33,200,838
Research and development expenses	<u>19,246,147</u>	<u>17,032,624</u>
Total	<u>411,353,716</u>	<u>361,444,462</u>
Income from operations	103,357,103	95,820,188
Other income (charges):		
Interest income	3,217,970	3,303,250
Other items — net	<u>(3,500,545)</u>	<u>(4,253,930)</u>
Income before taxes on income and equity in earnings of affiliated companies	103,074,528	94,869,508
Provision for taxes on income	<u>46,536,000</u>	<u>44,355,000</u>
Income before equity in earnings of affiliated companies	56,538,528	50,514,508
Equity in earnings of affiliated companies	<u>1,530,743</u>	<u>442,486</u>
Net income	<u>\$ 58,069,271</u>	<u>\$ 50,956,994</u>
Net income per share	<u>\$2.96</u>	<u>\$2.52</u>

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

CONSOLIDATED BALANCE SHEETS

	December 31	
	1977	1976
Assets		
Current assets:		
Cash	\$ 1,162,267	\$ 5,378,511
Short-term investments — at cost which approximates market:		
Cash investments	31,968,098	43,155,493
State, municipal and other government securities	6,016,514	9,745,485
Receivables:		
Customers	81,149,912	63,696,051
Import deposits	8,461,084	9,471,383
Other	5,238,290	5,205,796
Inventories:		
Finished products	25,236,470	23,814,091
Products in process	31,134,383	26,806,650
Raw material and supplies	34,476,247	33,864,433
Deferred income taxes	2,380,738	1,388,017
Prepaid expenses	2,443,878	2,466,623
Total current assets	<u>229,667,881</u>	<u>224,992,533</u>
Plant property — at cost:		
Land and improvements	21,970,457	20,819,132
Buildings and improvements	39,501,980	38,552,700
Machinery and equipment	147,515,965	136,079,148
Construction in progress	19,020,094	13,391,488
Total	<u>228,008,496</u>	<u>208,842,468</u>
Less accumulated depreciation	106,639,841	95,387,490
Plant property — net	<u>121,368,655</u>	<u>113,454,978</u>
Other assets:		
Investments in affiliated companies — at equity	7,924,463	4,263,588
Miscellaneous	1,505,893	1,294,080
Total other assets	<u>9,430,356</u>	<u>5,557,668</u>
TOTAL	<u>\$360,466,892</u>	<u>\$344,005,179</u>

	December 31	
	1977	1976
Liabilities and Shareholders' Equity		
Current liabilities:		
Loans payable by foreign subsidiaries to banks		\$ 8,104,692
Accounts payable:		
Trade	\$ 32,256,048	25,722,495
Affiliated companies	3,865,379	3,065,814
Other	3,845,572	2,962,035
Accrued expenses:		
Income taxes	16,925,451	11,976,793
Other taxes	3,349,974	2,862,391
Employee compensation	8,326,821	7,893,418
Other	2,027,390	3,325,623
Total current liabilities	<u>70,596,635</u>	<u>65,913,261</u>
Non-current liabilities	<u>3,385,886</u>	<u>2,201,053</u>
Deferred cash grants from a foreign government	<u>1,799,673</u>	<u>1,709,381</u>
Deferred income taxes	<u>12,901,872</u>	<u>12,548,426</u>
Shareholders' equity:		
Serial preferred stock without par value — Authorized and unissued — 2,000,000 shares		
Common Shares without par value:		
Authorized — 25,000,000 shares		
Outstanding — 19,886,209 shares in 1977 and 20,467,159 shares in 1976 (after deducting 580,950 treasury shares in 1977)	25,525,631	25,305,270
Retained earnings	<u>246,257,195</u>	<u>236,327,788</u>
Total shareholders' equity	<u>271,782,826</u>	<u>261,633,058</u>
TOTAL	<u>\$360,466,892</u>	<u>\$344,005,179</u>

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

CONSOLIDATED STATEMENTS OF CHANGES IN FINANCIAL POSITION

	Year Ended December 31	
	1977	1976
Source of Funds		
Operations:		
Net income	\$ 58,069,271	\$ 50,956,994
Charges to operations not requiring funds:		
Depreciation	14,270,089	13,800,188
Deferred taxes	(639,275)	5,269,573
Other — net	347,881	(979,587)
Total	72,047,966	69,047,168
Increase in accounts payable	8,216,655	
Increase in loans payable by foreign subsidiaries to banks		6,476,635
Increase in accrued expenses	4,571,411	829,793
Increase in non-current liabilities	1,184,833	2,201,053
Proceeds from Equity Purchase Plan	1,096,349	1,270,143
Other	351,081	
Decrease in cash and short-term investments	19,132,610	
TOTAL	<u>\$106,600,905</u>	<u>\$ 79,824,792</u>
Application of Funds		
Capital expenditures	\$ 22,981,504	\$ 19,419,515
Dividends on Common Shares	24,788,682	21,404,593
Purchase of Common Shares	24,227,170	
Increase in receivables	16,476,056	13,467,425
Increase in inventories	6,361,926	6,815,881
Increase in investments in affiliated companies	3,660,875	
Decrease in loans payable by foreign subsidiaries to banks	8,104,692	
Decrease in accounts payable		5,266,200
Other		35,776
Increase in cash and short-term investments		13,415,402
TOTAL	<u>\$106,600,905</u>	<u>\$ 79,824,792</u>

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

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

	Common Shares		Retained Earnings
	Shares Outstanding	Amount	
Year 1977			
Balance January 1	20,467,159	\$25,305,270	\$236,327,788
Net income			58,069,271
Common Shares:			
Treasury shares purchased:			
Stated value	(664,000)	(875,988)	
Excess of cost over stated value			(23,351,182)
Treasury shares — Issued under Equity Purchase Plan	83,050	1,096,349	
Dividends (\$1.25 per share)			(24,788,682)
Balance December 31	<u>19,886,209</u>	<u>\$25,525,631</u>	<u>\$246,257,195</u>
Year 1976			
Balance January 1	20,363,209	\$24,035,127	\$206,775,387
Net income			50,956,994
Common Shares — Issued under Equity Purchase Plan (including 12,300 Treasury shares)	103,950	1,270,143	
Dividends (\$1.05 per share)			(21,404,593)
Balance December 31	<u>20,467,159</u>	<u>\$25,305,270</u>	<u>\$236,327,788</u>

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

NOTES TO FINANCIAL STATEMENTS

Note 1 — Accounting Policies

Consolidation — All subsidiaries are wholly-owned and consolidated. The equity method of accounting is used for investments in affiliated companies.

Inventories — Inventories are stated at cost which is not in excess of market. In 1976, inventories were priced on the first-in, first-out (FIFO) method. In 1977, the company changed its method of pricing most of its U.S. inventories from the FIFO method to the last-in, first-out (LIFO) method. In periods of rising prices, the newly adopted method of inventory valuation results in a more appropriate matching of costs with revenues. The change in 1977 resulted in a charge to cost of sales of \$2,497,000 and a reduction in net income of \$1,258,000 or \$.06 per share. The change has no effect on prior years' financial statements.

At December 31, 1977, inventories on the LIFO method were about 39 percent of consolidated inventories, and the current replacement cost exceeded the stated LIFO cost by approximately \$2,500,000.

Depreciation — Depreciation of \$14,270,000 in 1977 and \$13,800,000 in 1976 was computed using the straight-line, sum-of-the-years-digits and declining-balance methods, at rates based on the useful lives of the assets. Different methods and rates are used for income tax purposes in certain instances. The income taxes related to these differences have been deferred to future years.

Retirement Plans — The company and certain subsidiaries have retirement plans for employees. The practice is to fund accrued costs of the plans and the amount charged to operations was \$6,207,000 in 1977 and \$4,993,000 in 1976. Pension fund assets exceeded the actuarially computed value of vested benefits.

Note 2 — Income Taxes

The provision for taxes on income consists of the following:

	1977	1976
Current:		
United States	\$25,432,000	\$23,407,000
Foreign	21,743,000	15,678,000
Deferred:		
United States	513,000	2,403,000
Foreign	(1,152,000)	2,867,000
Total	<u>\$46,536,000</u>	<u>\$44,355,000</u>

Deferred income taxes result from differences in the time of recognition of revenues and expenses for tax and financial statement purposes. The tax effects of timing differences are as follows:

	1977	1976
Accelerated depreciation ..	\$1,909,000	\$1,701,000
Foreign inventory reserves .	(907,000)	1,720,000
Dividend to be received from DISC	54,000	1,293,000
Intercompany profit in inventory	(1,112,000)	216,000
Other	(583,000)	340,000
Total	<u>\$ (639,000)</u>	<u>\$5,270,000</u>

A reconciliation between the United States statutory income tax rate and the company's effective income tax rate is as follows:

	1977	1976
48% of income before tax .	\$49,476,000	\$45,538,000
Different rates applicable to certain foreign income ..	(971,000)	787,000
Investment tax credit	(883,000)	(959,000)
DISC non-taxable earnings .	(1,518,000)	(1,410,000)
Other	432,000	399,000
Total	<u>\$46,536,000</u>	<u>\$44,355,000</u>

Undistributed earnings of subsidiaries and affiliates of approximately \$105 million at December 31, 1977, have been reinvested indefinitely in the operations of the subsidiaries and affiliates, principally for working capital, plant and equipment. No provision has been made for additional taxes which might result if at some future time such earnings were distributed to the company.

Note 3 — Employee Stock Options

The 1975 Stock Option Plan provides that prior to January 1985 qualified and non-statutory stock options may be granted to purchase up to 300,000 Common Shares. Options granted under this Plan are for a term of five years for qualified stock options and ten years for non-statutory stock options. The option price is the fair market value of the Common Shares on the date of the grant. Option rights are exercisable in cumulative annual increments of 25 percent each commencing one year after date of grant. At December 31, 1977, there were options outstanding to purchase 13,850 shares under the 1965 Qualified Stock Option Plan. This plan terminated in 1975 without affecting outstanding options.

Additional information as to these options is as follows:

	Number of Shares	
	1977	1976
Outstanding at beginning of year	171,800	125,700
Granted at:		
\$33.06 per share	50,500	
\$32.125 per share		47,100
Expired at \$43.125 per share	(10,650)	
Surrendered at:		
\$41.00 per share	(4,000)	(1,000)
\$32.125 per share	(1,200)	
Outstanding at end of year at		
\$32.125 to \$43.125 per share	206,450	171,800
Exercisable at end of year	69,963	39,962
Available for grant at end of year	107,400	152,700

Note 4 — Equity Purchase Plan

The Equity Purchase Plan authorizes the sale of 375,000 Common Shares to eligible employees at a price equal to book value. The Plan provides that such shares offered for sale may be purchased for up to five years from the date of the offer and such shares, at the election of the employee or the company, can only be resold to the company at a price equal to the book value, as adjusted, at the time of resale. The increase in book value of equity shares purchased is charged to income from operations; accordingly, the average number of equity shares is not considered outstanding in computing net income per share. Addi-

tional information as to the shares is provided by the following table:

	Number of Shares	
	1977	1976
Available for purchase at beginning of year	46,400	48,350
Offered	106,000	102,000
Purchased	(83,050)	(103,950)
Surrendered	(3,000)	
Available for purchase at end of year	66,350	46,400
Available for offer at end of year		106,000
Equity shares outstanding	296,650	222,600

In 1977, the company repurchased 9,000 shares pursuant to the Plan.

Note 5 — Quarterly Financial Data (Unaudited)

Quarterly financial data for the years 1977 and 1976 is as follows:

(In Thousands of Dollars Except per Share Data)

	1977			
	Three Months Ended			
	March 31	June 30	Sept. 30	Dec. 31*
Revenues	\$119,619	\$132,191	\$133,217	\$129,684
Gross profit	37,887	43,006	42,087	37,123
Net income	13,006	14,962	15,794	14,307
Net income per share	\$.66	\$.77	\$.80	\$.73

*The effect of the change to LIFO on the fourth quarter was a decrease in gross profit of \$2,497,000 and net income of \$1,258,000 or \$.06 per share.

	1976			
	Three Months Ended			
	March 31	June 30	Sept. 30	Dec. 31
Revenues	\$105,823	\$122,426	\$117,958	\$111,058
Gross profit	32,686	39,951	40,561	32,856
Net income	11,123	14,151	13,737	11,946
Net income per share	\$.55	\$.69	\$.67	\$.61

Note 6 — Replacement Cost Data (Unaudited)

In accordance with the requirements of the Securities and Exchange Commission, the company's annual report on Form 10-K contains estimated data on replacement cost of inventories and productive capacity and the approximate effect which replacement cost would have had on the computation of cost of sales and depreciation expense.

The company's cost of operations is affected by inflation. To the extent considered feasible,

Notes continued

the company attempts to recover increased costs by adjusting the sales prices of its products. Consequently, the company believes that its earnings have not been materially affected by the increased costs arising from inflation.

Note 7 — Information About Major Customers and Geographic Operations

The company is a supplier to the petroleum industry of chemical additives for lubricants and fuels, and manufactures and sells metal finishing chemicals. In 1977 and 1976, over 95% of the company's sales, income, and assets were attributable to its chemical additive operations.

The company's ten largest customers, all major oil companies, accounted for approximately 48% of its sales in 1977. The largest single customer accounted for approximately 13% of such sales, with no other single customer accounting for more than 10% of sales.

Net assets of subsidiaries, excluding inter-company accounts, located outside the United States at December 31, 1977 and 1976 were \$136,069,000 and \$138,764,000. Net income of these subsidiaries after applicable income taxes was \$30,113,000 in 1977 and \$23,169,000 in 1976 and dividends received from the subsidiaries were \$24,115,000 and \$25,753,000 respectively.

Foreign exchange adjustments, after income tax effect, amounted to a loss of \$41,000 in 1977 and a loss of \$2,551,000 in 1976.

The accompanying table presents information about the company's operations in different geographic areas for the year ended December 31, 1977. Transfers between geographic areas are made at prices comparable to normal unaffiliated customer sales for similar products. Operating profit is total revenue less operating expenses. None of the following items have been included in the determination of operating profit: general corporate expenses, other income (charges) including exchange gains and losses, taxes on income, and equity in earnings of affiliated companies. The effect of the change, described in Note 1, to the LIFO method of pricing certain inventories is applicable to United States operations. Identifiable assets are those assets of the company that are identified with the operations in each geographic area. Corporate assets are short-term investments.

(In Thousands of Dollars)

	United States	Europe	Other	Eliminations	Consolidated Total
Operations — For the year ended December 31, 1977:					
Revenues	\$233,442	\$153,984	\$127,285		\$514,711
Transfers between geographic areas	82,326	1,069		\$ 83,395	
Total	315,768	155,053	127,285	83,395	514,711
Cost and expenses (excluding corporate expenses)	261,603	126,345	102,704	82,898	407,754
Operating profit	\$ 54,165	\$ 28,708	\$ 24,581	\$ 497	106,957
General corporate expenses					3,600
Income from operations (as shown in the consolidated statement of income)					\$103,357
Identifiable assets at December 31, 1977	\$166,694	\$ 83,804	\$ 80,388	\$ 16,328	\$314,558
Corporate assets					37,985
Investments in affiliated companies					7,924
Total assets at December 31, 1977 (as shown in the consolidated balance sheet)					\$360,467

OPINION OF INDEPENDENT AUDITORS

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

We have examined the consolidated balance sheets of The Lubrizol Corporation and its subsidiaries as of December 31, 1977 and 1976 and the related consolidated statements of income, shareholders' equity and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying consolidated financial statements present fairly the financial position of the companies at December 31, 1977 and 1976 and the results of their operations and the changes in their financial position for the years then ended, in conformity with generally accepted accounting principles consistently applied during the period except for the change in 1977, with which we concur, in the method of pricing certain inventories as described in Note 1 to the consolidated financial statements.

Cleveland, Ohio
February 24, 1978

Haskins & Sells

Common Share Price History

	1977		1976	
	High	Low	High	Low
First quarter	37 ³ / ₈	30 ⁵ / ₈	44 ⁷ / ₈	37
Second quarter . . .	36 ³ / ₄	27 ³ / ₄	40 ¹ / ₄	34 ¹ / ₂
Third quarter	37 ¹ / ₄	32 ³ / ₈	42 ³ / ₄	37 ⁵ / ₈
Fourth quarter . . .	36 ¹ / ₄	32 ¹ / ₈	38 ³ / ₄	31 ¹ / ₈

Dividends Paid per Common Share

	1977	1976
	First quarter	\$.27 ¹ / ₂	$ .25
Second quarter . . . .	.32 ¹ / ₂	.25
Third quarter . . . . .	.32 ¹ / ₂	.27 ¹ / ₂
Fourth quarter . . . . .	.32 ¹ / ₂	.27 ¹ / ₂
Total	<u>\$1.25</u>	<u>\$1.05</u>

Business Segment Information

In each of the years 1973 to 1977 inclusive, approximately 95% of the company's revenues and income were derived from the sale of chemical additives for petroleum products. For financial information about foreign and domestic operations, see Note 7 to the financial statement appearing on page 24.

TEN YEAR SUMMARY

(Dollar Amounts in Thousands Except per Share Data)

	1977	1976	1975
Summary of Operations			
Revenues	\$514,711	\$457,265	\$425,641
Cost and expenses:			
Cost of sales	354,609	311,211	300,385
Selling, administrative and research expenses	56,745	50,233	47,117
Total	411,354	361,444	347,502
Income from operations	103,357	95,821	78,139
Other income (expense)	(283)	(951)	3,234
Income before taxes on income and equity in earnings of affiliated companies	103,074	94,870	81,373
Provision for taxes on income	46,536	44,355	35,855
Income before equity in earnings of affiliated companies	56,538	50,515	45,518
Equity in earnings of affiliated companies	1,531	442	1,374
Net income	\$ 58,069	\$ 50,957	\$ 46,892
Net income per share	\$2.96	\$2.52	\$2.31
Dividends declared per share	1.25	1.05	1.00
Average shares outstanding, excluding Equity Purchase Plan shares (in thousands)	19,599	20,245	20,302
Consolidated Statement of Financial Position			
Current assets	\$229,668	\$224,992	\$192,931
Current liabilities	70,597	65,913	63,873
Working capital	159,071	159,079	129,058
Plant property — net	121,369	113,455	107,072
Other assets	9,430	5,558	5,379
Total	289,870	278,092	241,509
Less:			
Non-current liabilities	3,386	2,201	
Deferred income and taxes	14,701	14,258	10,698
Net assets — Shareholders' equity	\$271,783	\$261,633	\$230,811
Other Data			
Capital expenditures	\$ 22,982	\$ 19,420	\$ 22,214
Depreciation	14,270	13,800	11,599
Number of employees at end of year	3,627	3,557	3,588
Number of shareholders at end of year	8,846	8,760	8,440
Common Shares outstanding (in thousands)	19,886	20,467	20,363
Shareholders' equity per share at end of year	\$13.67	\$12.78	\$11.33
Return on average shareholders' equity	22%	21%	22%

NOTES:

A. The number of shares and per share amounts have been adjusted to give retroactive effect to stock splits, 2 for 1 in 1968 and 2 for 1 in 1971.

B. See Note 1 to the financial statements regarding the change to LIFO method of valuing inventories in 1977.

1974	1973	1972	1971	1970	1969	1968
<u>\$382,951</u>	<u>\$279,111</u>	<u>\$221,450</u>	<u>\$200,873</u>	<u>\$186,842</u>	<u>\$165,662</u>	<u>\$150,565</u>
252,895	181,302	146,086	132,031	121,089	107,591	94,570
41,842	36,673	31,550	29,535	26,053	24,369	22,784
<u>294,737</u>	<u>217,975</u>	<u>177,636</u>	<u>161,566</u>	<u>147,142</u>	<u>131,960</u>	<u>117,354</u>
88,214	61,136	43,814	39,307	39,700	33,702	33,211
3,894	3,051	1,039	1,235	403	(357)	(351)
92,108	64,187	44,853	40,542	40,103	33,345	32,860
<u>42,959</u>	<u>29,479</u>	<u>20,008</u>	<u>18,321</u>	<u>19,173</u>	<u>16,321</u>	<u>16,307</u>
49,149	34,708	24,845	22,221	20,930	17,024	16,553
1,309	2,030	1,398	1,179	920	835	
<u>\$ 50,458</u>	<u>\$ 36,738</u>	<u>\$ 26,243</u>	<u>\$ 23,400</u>	<u>\$ 21,850</u>	<u>\$ 17,859</u>	<u>\$ 16,553</u>
\$2.49	\$1.81	\$1.30	\$1.16	\$1.09	\$.89	\$.84
.71 $\frac{3}{5}$	.53 $\frac{1}{5}$	.41 $\frac{3}{5}$	.37 $\frac{1}{2}$	.32 $\frac{1}{2}$	.28 $\frac{3}{4}$	.23 $\frac{3}{4}$
20,289	20,315	20,168	20,154	20,108	19,963	19,796
<u>\$190,734</u>	<u>\$138,401</u>	<u>\$ 97,353</u>	<u>\$ 77,885</u>	<u>\$ 72,046</u>	<u>\$ 60,892</u>	<u>\$ 58,004</u>
79,943	48,897	31,779	27,647	28,483	23,670	24,498
<u>110,791</u>	<u>89,504</u>	<u>65,574</u>	<u>50,238</u>	<u>43,563</u>	<u>37,222</u>	<u>33,506</u>
89,997	77,769	74,793	73,041	66,681	60,303	53,481
11,178	8,378	6,493	5,423	4,709	3,947	3,510
<u>211,966</u>	<u>175,651</u>	<u>146,860</u>	<u>128,702</u>	<u>114,953</u>	<u>101,472</u>	<u>90,497</u>
8,522	5,808	4,711	3,674	3,000	5,400	7,950
<u>\$203,444</u>	<u>\$169,843</u>	<u>\$142,149</u>	<u>\$125,028</u>	<u>\$108,964</u>	<u>\$ 93,232</u>	<u>\$ 79,825</u>
\$ 22,640	\$ 12,744	\$ 11,255	\$ 14,517	\$ 14,007	\$ 13,173	\$ 12,290
10,172	9,622	8,935	8,100	7,317	6,151	5,193
3,479	3,286	3,037	3,037	2,906	2,799	2,646
8,027	7,944	7,972	7,815	6,995	6,752	6,230
20,294	20,314	20,158	20,161	20,147	20,080	19,832
\$10.03	\$8.36	\$7.05	\$6.20	\$5.41	\$4.64	\$4.03
27%	24%	20%	20%	22%	21%	22%

OFFICERS AND DIRECTORS

Directors

- M. Roger Clapp
Former Chairman of the Board
- L. E. Coleman
President
- J. Robert Killpack
Executive Vice President - Finance of Eaton Corporation, a manufacturer of automotive, industrial and consumer products
- W. M. LeSuer
Vice President - Research and Development
- Harry T. Marks
Former Chairman of the Board and Chief Executive Officer of Ferro Corporation, a manufacturer of materials for industry
- T. W. Mastin
Chairman of the Board and Chief Executive Officer
- James N. Purse
Vice Chairman of the Board of The Hanna Mining Company, a mining, processing and transportation company
- Douglas W. Richardson
Vice Chairman of the Board
- Karl H. Rudolph
Chairman of the Board and Chief Executive Officer of The Cleveland Electric Illuminating Company, an electric utility
- H. James Sheedy
Partner in the law firm of Squire, Sanders & Dempsey
- J. R. Stitt
Vice President - Sales
- Renold D. Thompson
Executive Vice President - Operations and Director of Oglebay Norton Company, a mining, vessel transportation and service company to the steel industry
- Robert K. Williams
Vice President - Corporate Planning and Development

Officers

- T. W. Mastin
Chairman of the Board and Chief Executive Officer
- L. E. Coleman
President
- Douglas W. Richardson
Vice Chairman of the Board
- W. T. Beargie
Vice President - Finance and Treasurer
- Gordon B. Cameron
Vice President - Personnel
- Paul L. Carll
Vice President - Purchasing and Distribution
- Roger Y. K. Hsu
Vice President and General Counsel
- Philip L. Krug
Vice President - Manufacturing
- W. M. LeSuer
Vice President - Research and Development
- John L. Palmer
Vice President - Corporate Technology
- J. R. Stitt
Vice President - Sales
- Robert K. Williams
Vice President - Corporate Planning and Development
- Donald L. Murfin
Secretary
- Honorary Directors**
- F. Alex Nason
Founder of the Company
- Kelvin Smith
Honorary Chairman of the Board, Founder of the Company
- Kent H. Smith
Founder of the Company
- Vincent K. Smith
Founder of the Company

Listing

Common Shares of The Lubrizol Corporation are listed on the New York Stock Exchange under the symbol LZ.

Transfer Agent, Registrar and Dividend Disbursing Agent

National City Bank
P. O. Box 5756
Cleveland, Ohio 44101

Annual Meeting

The Annual Meeting of Shareholders will be held at the offices of The Lubrizol Corporation, 29400 Lakeland Blvd., Wickliffe, Ohio, at 10:00 a.m. on Monday, April 24, 1978.

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 by shareholders upon written request to the Secretary of the Corporation.

THE LUBRIZOL CORPORATION

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

Manufacturing Plants

Cleveland, Ohio
Painesville, Ohio
Bayport, Texas
Deer Park, Texas

Apodaca, Mexico
Bombay, India
Bromborough, England
Durban, South Africa
Huelva, Spain
LeHavre, France
Niagara Falls, Canada
Rouen, France
Sydney, Australia
Taketoyo, Japan

Laboratories

Wickliffe, Ohio
Chemical Research
Polymer Research
Mechanical Testing

Hazelwood, England
Mechanical Testing

Atsugi, Japan
Mechanical Testing

Sales and Technical Service Offices

Cleveland, Ohio
Detroit, Michigan
Houston, Texas
Montvale, New Jersey
Naperville, Illinois
Tulsa, Oklahoma
Whittier, California
Wickliffe, Ohio
Wilmington, Delaware

Athens, Greece
Bogota, Colombia
Bombay, India
Brussels, Belgium
Buenos Aires, Argentina
Caracas, Venezuela
Cham-Zug, Switzerland
Copenhagen, Denmark
Durban, South Africa
Freeport, The Bahamas
Guayaquil, Ecuador
Hamburg, West Germany
Helsinki, Finland
La Paz, Bolivia
Lima, Peru
London, England
Madrid, Spain
Manila, Philippines
Melbourne, Australia
Mexico City, Mexico
Milan, Italy
Oslo, Norway
Paris, France
Rio de Janeiro, Brazil
Santiago, Chile
Seoul, South Korea
Stockholm, Sweden
Sydney, Australia
Taipei, Taiwan
Tokyo, Japan
Toronto, Canada
Vienna, Austria

Subsidiaries

The R. O. Hull & Company, Inc.
Rohco Chemicals Co., Ltd.
(Canada)
Lubrizol Management, Inc.
Lubrizol Overseas Trading Corporation

Lubrizol A.G. — (Switzerland)
Lubrizol do Brasil, Limitada
Lubrizol of Canada, Ltd.
Lubrizol Española S.A.
Lubrizol Far East, Inc. —
(Philippines)
Lubrizol Singapore (branch)
Lubrizol France
Lubrizol G.m.b.H. — (West Germany)
Lubrizol Great Britain Limited
Lubrizol International S.A. —
(Bahamas)
Lubrizol Australia (branch)
Lubrizol Italiana S.p.A.
Lubrizol Japan, Ltd.
Lubrizol Limited — (England)
Lubrizol de Mexico, S. de R. L.
Lubrizol Scandinavia AB
Lubrizol Servicios Tecnicos, S. de R. L.
Lubrizol South Africa (Pty.) Limited
Nippon Lubrizol Industries Corporation — (Japan)

Affiliates

Aikoh Rohco Co., Ltd. —
(Japan)
Greenwich Oil Corporation
Industrias Lubrizol, S.A. de C.V. —
(Mexico)
Lubrizol India Limited

