

PLAINTIFF'S EXHIBIT

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1964 ANNUAL REPORT
MONSANTO COMPANY

FINANCIAL HIGHLIGHTS

(Dollars in Millions, Except Per Share Figures)

	1964	1963
Earnings a Share	\$ 3.72	\$ 2.77
Cash Dividends a Share	1.25	1.20
Stock Dividend	2%	2%
Income:		
Net sales.....	\$1,358.7	\$1,192.3
Interest, dividends, etc.....	15	13.5
	<u>\$1,373.7</u>	<u>1,205.8</u>
Costs of Doing Business:		
Raw materials, fuel, supplies, etc.....	681.0	605.8
Wages and salaries to employees.....	313.6	284.8
Depreciation, depletion, etc.....	126.3	114.6
Taxes (income, property, etc.).....	127.3	100.1
Interest expense.....	15.5	15.8
Minority interests in subsidiaries.....	1.8	1.7
	<u>1,259.5</u>	<u>1,122.8</u>
Net Income	<u>\$114.9</u>	<u>83.0</u>
Cash Dividends Paid	37.6	35.0
Retained for Future Growth	<u>\$77.3</u>	<u>\$48.0</u>
Per Cent of Sales:		
Gross profit.....	30.8%	28.7%
Selling and administrative expenses.....	9.9	9.9
Research, development, patent, engineering.....	4.9	4.9
Net income.....	8.5	7.0
Plant Additions and Replacements	\$ 218.1	\$ 114.5
Investment in Affiliated Companies	18.3	18.4
Long Term Debt (Exclusive of Current Maturities)	\$ 345.5	\$ 352.8
Shareowners' Equity	871.7	784.2
Equity to debt ratio.....	2.52	2.22
Common Shares (In Millions)	30.9	30.0
Book Value a Common Share	\$ 28.25	\$ 26.17
Working Capital	\$ 294.1	\$ 313.8
Current Assets to Current Liabilities Ratio	2.22	2.55
Employees	52,284	48,133
Shareowners	89,833	80,608

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TO THE SHAREOWNERS

In 1964, the U.S. economy expanded vigorously. And Monsanto Company's rate of gain was even greater.

The company achieved the best year in its history. Sales, income and per-share earnings climbed to record levels, exceeding those of 1963 by substantial margins. And, effective the fourth quarter, the dividend was increased.

Consolidated sales rose 14 per cent and amounted to \$1,358,678,000. Net income increased 38 per cent to \$114,891,000.

Earnings were \$3.72 a share on 30,859,927 shares outstanding, compared to \$2.77 a share on 29,963,825 shares a year earlier.

Capital outlays for plant and equipment also were at their highest levels. For the year, they totaled \$218,105,000, compared to 1963 expenditures of \$114,502,000. Charges against income for depreciation, obsolescence and depletion were \$120,268,000 in 1964 and \$114,606,000 in 1963.

Investments in affiliates amounted to \$13,340,000 in 1964 and \$18,443,000 a year earlier.

The sharp increase in total sales was mainly responsible for the improvement in earnings. But this was not the only significant determinant of the year's outcome. An analysis of the 1964-1963 profit change is shown on this page.

Selling prices again drifted lower. Yet, price softening was less damaging than in 1963 by 20 cents a share. And, for the third consecutive year, its effect was more than offset by a combination of new manufacturing economies and lower raw material costs.

Selling, administrative, research and development costs rose considerably as the natural consequence of growth, intensified technological effort and expanded worldwide marketing programs.

The year-to-year increase in earnings of 95 cents a share is accounted for as follows:

	<u>Earnings a Share</u>	
Year 1963 earnings.....		\$2.77
Additional earnings resulting from:		
Higher sales volume.....	\$1.20	
Manufacturing cost savings.....	.37	
Lower raw material prices.....	.06	
		<u>1.63</u>
Reductions in earnings caused by:		
Lower selling prices.....	\$.25	
Higher selling, administrative, research, development and other expenses.....	.49	.74
Increase in operating results.....		<u>.89</u>
		<u>3.66</u>
Non-operating items:		
Lower income taxes, due primarily to difference in tax rate.....		.12
Higher investment tax credit on property additions.....		.12
Other income and charges — net.....		.03
Unusual write-offs:		
Obsolescence.....	.06	
Self-insurance reserve.....	.07	
Other.....	.03	.10
Effect on earnings of shares issued during the year.....	.11	.06
Year 1964 earnings.....		<u>\$3.72</u>

Italics indicate deduction.

The vitality of the 1964 economy spread to virtually all markets served by Monsanto. Among the most notable were those for fibers, farm chemicals and plastics.

The Chemstrand Company Division, although it operated at capacity, could not fill all orders for *Acrilan* acrylic fiber. To relieve this situation, Monsanto is speeding expansions that will make new capacity available in 1965.

This, however, is but one facet of the greatest worldwide expansion program Monsanto has ever undertaken. Other facilities being built or enlarged in 1964 included those for producing nylon yarns, nylon intermediates, polyester fibers, fertilizer materials, weed killers, detergent intermediates, phosphorus, styrene-based plastics, silicon, adhesives and chemical intermediates. Altogether, Monsanto had expansions under way in 10 nations, including the United States.

In June, several divisional engineering departments were consolidated into a new Central Engineering Department. The new organizational unit enables Monsanto to utilize its valuable engineering resources in managing the company's expansion program efficiently and permits it to deal adequately with the rapid obsolescence of existing technology and the swift advance of new technology. Construction of a building for the new consolidated engineering activity began at the General Offices in St. Louis.

Petrochemical facilities at the Chocolate Bayou Plant, near Alvin, Tex., operated near capacity all year and supplied important raw materials for a number of Monsanto processes.

Late in the year, production of biodegradable raw materials for the new "soft" detergents began at Chocolate Bayou. The new detergents will minimize the foam on rivers and streams caused by residues from present products. Monsanto further strengthened its position as a supplier to the detergent industry with the development of an improved method of detergent manufacture.

The company continues to emphasize its orientation to certain consumer markets — particularly through its Agricultural and Packaging Divisions.

For example, the sale of fertilizer materials and pesticides direct to growers through Monsanto agricultural centers is rapidly being expanded in principal farming areas.

Greater emphasis is being given to the development of worldwide marketing strategies. No longer are overseas markets treated in isolation. Instead, they are integrated into Monsanto's corporate thinking, planning and action. Thus, the many components of the corporation are bound together by the worldwide needs of their customers.

Even the format of this Annual Report acknowledges Monsanto's international scope and philosophy. Operating highlights are reviewed by product group on a worldwide basis for the first time. This puts the book in sharp contrast to earlier reports, which discussed domestic and foreign operations in geographic and organizational segments.

The volume of Monsanto's 1964 overseas business makes obvious the importance of worldwide planning. Monsanto's sales outside the United States, including exports, amounted to \$286 million, which was 21 per cent of the company's total sales.

In 1964, more than 60 nations began negotiating tariff reductions at Geneva. Although the complex bargaining sessions may not end until 1966, their results are sure to affect the long-range development of worldwide chemical markets. It is important that the U.S. chemical industry — one of the nation's leading growth industries — not be penalized in order to obtain concessions abroad. To this end, Monsanto has supplied extensive information and recommendations on domestic and foreign tariffs. A Monsanto employee represents the U.S. chemical industry on the technical advisory staff of the chief U.S. negotiator.

In April, the U.S. Department of Justice filed a civil action against Monsanto, Farbenfabriken Bayer A. G., and Mobay Chemical Company, alleging that the formation of Mobay by Monsanto and Bayer in 1954 constituted a violation of the antitrust laws. The petition asks that the two companies divest themselves of their Mobay interests. It is too early to predict the outcome of this litigation.

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Two long-time Monsanto directors — Dr. Carroll A. Hochwalt and Felix N. Williams — retired in the second quarter. Dr. Hochwalt was vice president of research, development, patents and basic engineering. Mr. Williams was vice president of new commercial activities. Both were also members of the Executive Committee. Few careers have enriched Monsanto so conspicuously as those of these two men.

Monsanto's management recognizes that the achievements reported on these pages are due mainly to the teamwork of industrious, dedicated employees throughout the world. We are indebted to them for their efforts.

Sincerely,

Charles Allen Thomas

Chairman of the Board

Charles H. Sommer

President

February 20, 1965
St. Louis, Missouri

The next Annual Meeting of the shareowners of the Company is to be held at 10 A.M. Thursday, March 25, 1965, at the Company's General Offices, 800 North Lindbergh Boulevard, St. Louis County, Missouri. A formal notice of the meeting, together with a proxy statement and form of proxy, is being mailed to each shareowner.

COMPARATIVE CONSOLIDATED SALES, INCOME AND EARNINGS A SHARE BY QUARTERS

	1964	1963	Per Cent Increase
(In Thousands)			
SALES:			
First quarter..\$	324,414	\$ 273,671	18.5
Second quarter	358,898	312,660	14.8
Third quarter...	326,957	298,069	9.7
Fourth quarter.	348,409	307,870	13.2
	<u>\$1,358,678</u>	<u>\$1,192,270</u>	<u>14.0</u>

INCOME:

First quarter..\$	28,696	\$ 15,556	84.5
Second quarter	35,285	24,721	42.7
Third quarter...	23,023	20,207	13.9
Fourth quarter.	27,887	22,506	23.9
	<u>\$ 114,891</u>	<u>\$ 82,990</u>	<u>38.4</u>

	1964	1963	
Adjusted for 1964 Stock Dividend As Reported			
EARNINGS A SHARE (1):			
First quarter.....	\$.93	\$.51	\$.52
Second quarter.....	1.14	.81	.82
Third quarter.....	.75	.66	.68
Fourth quarter.....	.90	.74	.75
	<u>\$3.72</u>	<u>\$2.72</u>	<u>\$2.77</u>

SHARES OUTSTANDING DECEMBER 31:

1964.....	30,859,927
1963.....	29,963,825

(1) Restated for the first three quarters of 1964 to reflect the shares outstanding on December 31.

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1964 OPERATIONAL HIGHLIGHTS

In previous Annual Reports, sharp distinctions were drawn between the operations of the parent company and its subsidiaries. Each operating division received individual treatment. Developments at home and abroad also were discussed separately.

This 1964 Annual Report breaks with that tradition in an attempt to describe Monsanto's efforts and achievements in a more cohesive manner. Corporate activities are reviewed by product group on a worldwide basis without regard to organizational units.

To supplement this review, a list of Monsanto's worldwide interests begins on page 14. The parent company has these eight divisions: Agricultural Division, Chemstrand Company Division, Hydrocarbons Division, Inorganic Chemicals Division, International Division, Organic Chemicals Division, Packaging Division and Plastics Division.

CHEMICAL FIBERS

Unprecedented worldwide demand for the company's fibers strained capacities as sales climbed 25 per cent to record levels.

Acrilan acrylic fiber strengthened its position in virtually all U.S. markets. Its gains in carpeting, sweaters, jersey and blankets were especially noteworthy. For example, sales to carpet manufacturers increased about 70 per cent.

Overseas markets for *Acrilan* also were more active than ever. The plant in Northern Ireland had a 75 per cent sales increase; its sales to carpet makers more than tripled. In the sweater market, sales gains also were of major proportions.

To remedy a serious shortage of *Acrilan*, a two-part expansion of production facilities was begun at Decatur, Ala. The first part, which neared completion at the end of 1964, represents a one-third increase in Monsanto's domestic capacity for the fiber. The second part, to be completed late in

1965, will push annual production capability to twice its 1964 level.

In 1964, Monsanto started producing *Acrilan* in a new plant at Ashdod, Israel. In Northern Ireland, capacity to make *Acrilan* is being more than doubled.

Chemstrand nylon yarns were successfully marketed in more than 40 countries. Among the outstanding sales increases were those achieved in Australia, Belgium, France, Mexico, Turkey and the United Kingdom.

Nylon yarns fared well domestically, too. Sales improvement was general; purchases by tire and carpet makers were especially heavy. Wide acceptance of an improved tire yarn played a major role in boosting volume.

New *Cumuloft* continuous-filament textured nylon yarns offered carpet producers a number of property improvements, including better dyeing characteristics and greater resistance to soiling. The new Chemstrand yarns thus contributed to a strong 1964 uptrend in the popularity of nylon carpeting.

Growth continues in the stretch nylon field, with Chemstrand's "Actionwear" program making great strides. Increased use of the stretch concept has been particularly significant in woven fabrics — a trend that is expected to continue.

At year-end, construction of Monsanto's two nylon plants overseas was on schedule. One — the first nylon plant to be built in Europe by a U.S. firm — is to go on stream in 1965 at Echternach, Luxembourg. The other, located near Dundonald, Scotland, is to begin producing in 1966.

Facilities to make nylon intermediates from acrylonitrile are scheduled for 1965 completion at Decatur. They will use a new electrochemical process announced in 1963. It was discovered and developed by Monsanto scientists and engineers.

The plant at Lancaster, England, increased its sales of cellulosic fibers and other textile products. Production of acetate fibers is being expanded 15 per cent.

Polyesters will be added to the company's line of man-made fibers in 1965. Production facilities under construction at Decatur are scheduled to turn out test quantities in the first quarter.

Manufacture and sale of *Chemback* synthetic backing for tufted carpeting are scheduled to begin in March, 1965. Initial availability will be 40 million square yards annually.

To capitalize on the versatility of nylon, Monsanto is developing a series of nylon molding materials. Although the product line was still incomplete in 1964, definite sales progress was evident. Production of these materials is moving

at a satisfactory pace and the line is being broadened so that all major formulations can be marketed in 1965.

PLASTICS, RESINS AND COATINGS

Sales rose 16 per cent and manufacturing facilities for most products ran at or near their capacities. Process improvements bettered yields, boosted product quality and lowered costs. Larger sales of specialty products helped soften the impact of price declines affecting certain commodity-type plastics.

Lustrex styrene polymers and tough *Lustran* styrene copolymers and terpolymers were in good demand. Improved molding and extrusion ma-

CONSOLIDATED SALES BY PRODUCT GROUPS

PER CENT INCREASE-DECREASE 1964 OVER

1963	1959
25	97
16	85
6	30
8	19
19	100
4	28
0	19
8	7
6	14
17	4
—	—

Chemical Fibers.....
Plastics, Resins and Coatings.....
Phosphates and Detergents.....
Intermediates and Plasticizers.....
Agricultural Chemicals.....
Rubber and Oil Chemicals.....
Petroleum — Net of purchases.....
Pharmaceuticals, Flavors and Condiments.....
Textile and Paper Chemicals.....
Heavy Chemicals.....
Other.....

PER CENT OF TOTAL

1964	1963	1959
29.1	26.7	23.3
25.2	24.8	21.5
10.1	10.9	12.3
8.7	9.2	11.6
7.4	7.1	5.8
6.6	7.2	8.1
5.0	5.7	6.6
2.7	2.9	4.0
2.5	3.1	3.5
2.1	2.0	3.1
.6	.4	.2
<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

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terials sparked new gains in such end uses as refrigeration, packaging, lighting fixtures, TV sets and housewares.

New capacity for *Lustran* came on stream at Addyston, Ohio, and in England. Capacity for *Lustrex* was increased at two U.S. plants and a new installation was added in Japan.

Strong global demand for styrene monomer in 1964 prompted expansions at Texas City, Tex., and in Australia. Further expansion of monomer capacity is scheduled at Texas City in 1965.

New polyethylenes for cable jacketing and extrusion coating helped Monsanto increase its participation in these important markets. Capacity to extrude polyethylene film was increased at Kenilworth, N. J.

Vinyl chloride polymer consumption continued to rise. Areas of major growth included wire and cable insulation, flooring and new building products. Installation of additional capacity to make this versatile plastic was completed or under way at Springfield, Mass., and in Argentina, Canada, Japan, Mexico and Spain.

Vyram rigid polyvinyl chloride, introduced in 1963, continued to demonstrate its merits in such applications as pipe, containers and building products. Manufacture of *Vyram* was extended to several overseas locations.

Also introduced in 1964, were several building products of rigid vinyl. They include the first full line of plastic guttering, downspouts and accessory equipment offered by a U.S. producer. The rain-carrying system, which never needs painting, represents Monsanto's latest contribution to a maintenance-free home exterior. A major contribution had also been made in 1963 when the company introduced rigid vinyl siding under the Monsanto label. National distribution for the latter product was established in 1964.

Sales of *Saflex* polyvinyl butyral (interlayer for laminated safety glass) and other products based on vinyl acetate were strong in 1964. To accommodate greater internal use and larger external sales of vinyl acetate, a 25 per cent capacity increase was achieved by means of process improvements at Texas City.

The Springfield plant began making *RJ-100* styrene-based resin intermediate to improve a variety of surface coatings. The product is used at home and abroad by makers of exterior house paints, floor enamels, varnishes and water-based wall paints. *RJ-100* makes possible for the first time water-based interior paints that dry to a semi-gloss or gloss finish.

Late in the year, a new plant at Eugene, Ore., started producing formaldehyde, and resin adhesives for plywood and particleboard. In 1965, installation of a phenolic resin unit will be completed at the Chocolate Bayou Plant.

Monsanto's plastic bottles, film and sheeting for packaging use sold well to high-volume users. So did its plastic cups for coin-operated vending machines.

To accommodate customer needs, most of the company's plants making plastic bottles operated seven days a week. Such scheduling also resulted in more efficient utilization of capacity.

Development of an economical process for making containers from rigid polyvinyl chloride was among 1964's notable achievements. This pioneering work by Monsanto enables customers to package in vinyl plastic a variety of products for which suitable plastic packages were not previously available. Such products include mouthwashes, shampoos, hair dressings, polishes and household cleansers — some of which already are sold in the new Monsanto containers. Bottles and jars made by the new process range from clear to opaque.

Monsanto's plastic vending cup line was expanded to include a translucent nine-ounce cup for cold drinks and an insulated seven-ounce model for hot beverages. In 1964, the plant at Melrose Park, Ill., produced its one-billionth cup.

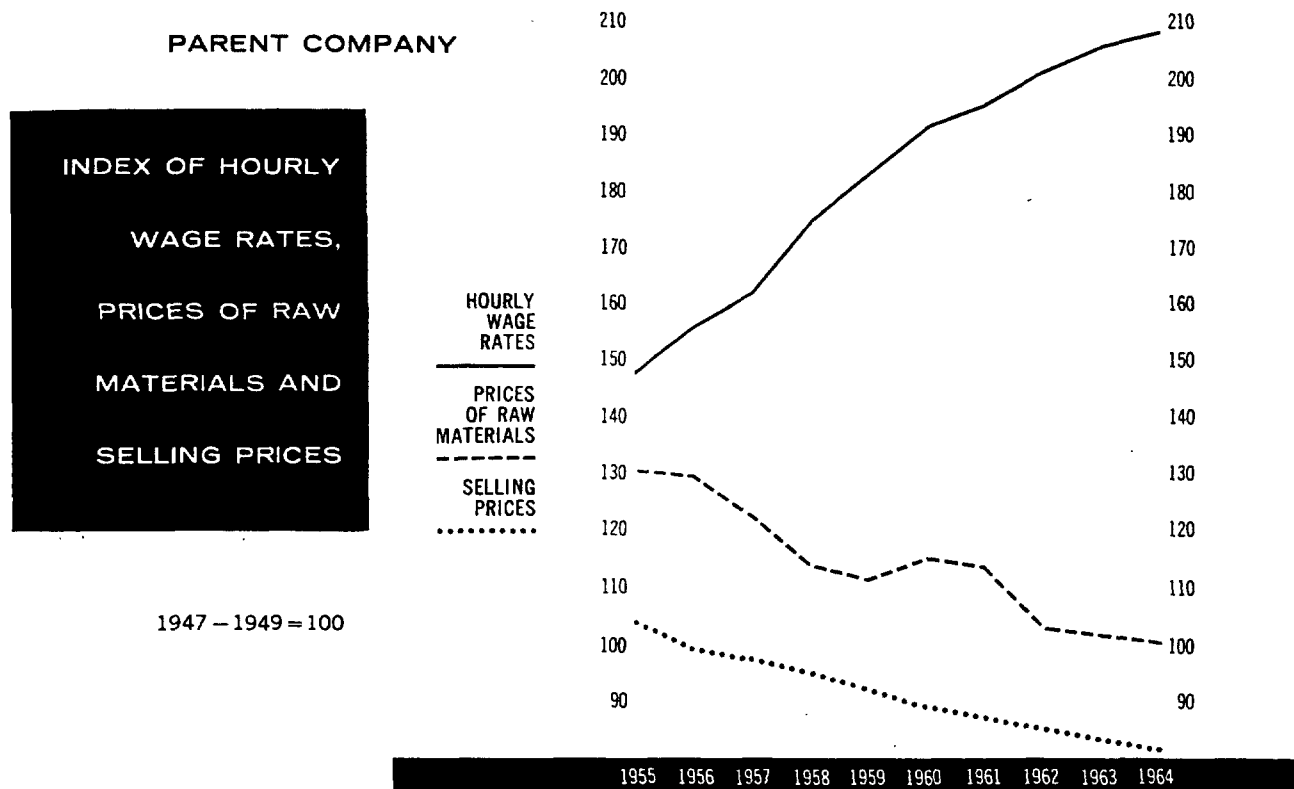
PHOSPHATES AND DETERGENTS

The group had a sales increase of six per cent. Production of phosphorus and its derivatives rose to record levels.

The detergent industry, representing the largest market for Monsanto phosphates, experienced an-

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other year of growth. Liquid detergents utilizing potassium phosphates moved particularly well.

An improved method of detergent manufacture announced by Monsanto in 1964 is based on a new raw material that yields a higher quality detergent builder. At the same time, it eliminates a costly processing step. Monsanto will license the new process to companies purchasing plants and will stress the technology in the international market.

New facilities to make raw materials for biodegradable detergents began operating at Chocolate

Bayou in December. The Monsanto materials are being used to produce a detergent active that serves a major market need. Research and development work on materials useful for other actives is well advanced and such materials are to be marketed in 1965. These biodegradables will help combat the growing problem of foaming on surface waters caused by the residues of present detergents.

A number of products introduced in 1963 won new customer favor in 1964. Among them are a broad line of leavening agents and a phosphate-

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based mixture dropped from airplanes to help control forest fires.

New products in an advanced stage of development include a phosphate compound that makes paints fire-retardant without impairing their film properties, and an organic phosphate with a variety of potential applications in the field of water treatment.

To assure ample phosphorus for future growth, furnaces were enlarged at Columbia, Tenn., and Soda Springs, Idaho. Plans were made to install an additional furnace at Soda Springs. Expansion of facilities to convert phosphorus to phosphoric acid and phosphates is being planned at Augusta, Ga.; Kearny, N. J.; Long Beach, Calif.; St. Louis; and Trenton, Mich.

INTERMEDIATES AND PLASTICIZERS

Sales of the group gained eight per cent.

From Monsanto intermediates, the company and its customers derive other chemicals. In 1964, not only sales but internal consumption of the products increased. A number of expansions helped Monsanto keep pace.

Plasticizers, used mainly to alter the properties of plastics, were in firm demand.

Santicizer 160 primary plasticizer was approved by the U. S. Food and Drug Administration as an ingredient of plastic films, coatings and adhesives for food packaging. The approval, which followed several years of exhaustive testing, opened the way to big-volume use. *Santicizer 160* is the lowest priced plasticizer of its type to have such clearance.

To Monsanto's plasticizer line — already the world's most complete — two new products were added in 1964. One is *Santicizer 406* plasticizer, which is an improved product for use in refrigerator gasketing. The other is *Santicizer 462* plasticizer, which is a low-priced "permanent" type used to formulate plastics and rubber for coating and impregnating papers and fabrics.

Resin raw materials, although made primarily for Monsanto's own use, moved well in 1964 —

particularly to producers of reinforced plastics and surface coatings.

Industry-wide overcapacity again led to softer selling prices on resin raw materials. But Monsanto partially offset the effect by reducing production costs, increasing its own use of the materials and putting strong emphasis on newer, more profitable products. One such product is adipic acid, sales of which have been especially strong.

Using completely new technology, Monsanto began low-cost manufacture of phenol in Australia. The new production unit replaced one based on a process that had become obsolete.

A doubling of bisphenol A capacity began at St. Louis. New facilities there will utilize a Monsanto-developed process to turn out material of unusually high purity. Monsanto customers use the product to manufacture polycarbonate and epoxy resins.

Monsanto's functional fluids — for such markets as aviation and aerospace, heat and power, and metalworking — made new headway. Their use to perform hydraulic, dielectric and heat-transfer functions broadened. Demand from manufacturers of equipment and systems requiring such fluids was especially strong in Europe, South America, Canada and Japan.

A new, relatively inexpensive *Pydraul* fire-resistant industrial hydraulic fluid was introduced. It is the first nonaqueous fire-resistant fluid priced to compete with water-based hydraulic fluids.

Another 1964 newcomer to Monsanto's product line was *Coolanol 15* coolant-dielectric fluid. The material, which is pumpable at temperatures below -100°F, was developed to help control the environment in the Gemini two-man spacecraft. It is expected to find additional uses in space vehicles and missiles.

Therminol low-pressure, fire-resistant fluid for heat transfer was used in the heating system of a Detroit apartment building. The installation, which is the first of its kind, may help open a large new market to *Therminol*. The system is proving less costly to operate and maintain than conventional heating systems based on high-pressure steam.

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AGRICULTURAL CHEMICALS

As total sales of farm chemicals rose 19 per cent, Monsanto's capacity to produce fertilizer materials was especially taxed. Anticipating even stronger demand for plant foods in 1965, the company launched major expansions.

At Luling, La., ammonia capacity is being doubled and ammonium nitrate capacity is being increased 20 per cent. At the same site, Monsanto's first ammonium phosphate unit is being installed. All three projects are to be completed for the 1965 growing season.

By year's end, the company's distribution network had been supplemented by more than 75 Monsanto agricultural centers to sell fertilizer materials and pesticides direct to growers.

Monsanto pesticides gained in established U. S. and European markets and found new markets in Latin America and Asia. Pest problems of other nations received special attention. Eight compounds were tested in 29 foreign countries.

Corn and soybean acreage treated with *Randox* weed and grass killer was more than twice that of the prior year. A plant addition at Muscatine, Iowa, doubled Monsanto's capacity to make *Randox*. *Ranrod* herbicide, a companion product to fight grassy weeds in more diverse soils and climates, was readied for introduction in 1965.

Rogue herbicide became increasingly popular among U. S. rice growers and also began protecting Asian and Latin American rice crops. Capacity to make *Rogue* is being doubled by installation of a production unit at Luling.

Wet weather held domestic use of *Avadex* wild-oat killer below expected levels. Demand picked up, however, in Australia, Canada and Europe.

Niran 10-G insecticide sold at twice the expected volume in its introductory season. The compound offers effective low-cost control of corn rootworm, which now threatens millions of corn acres. The worm is becoming resistant to other types of insecticides.

In October, a 50 per cent increase in parathion insecticide capacity was completed at Anniston,

Ala. Earlier, a parathion formulating plant was opened in El Salvador to serve Central American cotton growers, who use the product to combat the boll weevil. A similar facility is planned in Guatemala.

Animal nutrition products also had a good year. *Santoquin* antioxidant, to preserve the nutritive value of feeds and dehydrated forage for poultry and livestock, performed particularly well in Europe, where it has become the standard product of its type.

Increased sales of *MHA* protein feed supplement were due partly to greater use of the product in rations fed to laying hens.

RUBBER AND OIL CHEMICALS

Sales were up four per cent, reflecting increasing global demand. This was particularly evident in those overseas nations where new industrialization helped expand the markets for rubber products, fuels and lubricants.

Sales of butadiene to synthetic rubber firms increased. Introduction of new polybutadiene rubbers expanded total demand. Sales of styrene monomer for synthetic rubber also were at a high level.

At Monsanto, Ill., larger facilities were installed to make *Santoflex* 13 and *Santoflex* 77 rubber anti-ozonants, both of which were introduced in 1963. The materials protect tires and other rubber products from damage by weather and sunlight. By the close of 1964, six of seven major rubber companies were developing and testing compounds made with *Santoflex* 13.

Testing facilities were established at Monrovia, Calif., to study the effect of heavy doses of ozone and sunlight on rubber compounds.

At Akron, Ohio, production of oscillating-disk rheometers was put on an assembly-line basis. The rheometer is a Monsanto-developed instrument for measuring the stiffness of rubber throughout the curing cycle. Introduced in 1962, it is rapidly becoming a standard measuring device in the rubber industry.

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In 1964, there was an increase in the number of motor oils, gasolines and other petroleum products relying on blended Monsanto additives to help them meet the severe operating conditions imposed by devices for controlling air pollution and by today's powerful engines. Such additives include detergents, rust inhibitors and anti-icers.

To help Monsanto keep pace with mounting worldwide demand for oil chemicals, new manufacturing units are planned for several overseas sites. They will be in addition to facilities already producing in the United Kingdom.

PETROLEUM PRODUCTS

The group's total sales approximated those of 1963. Sales of crude oil and natural gas liquids stayed close to year-earlier levels. Gas sales rose 15 per cent. In 1964, 33 shut-in gas wells went on transmission lines.

Completion of 71 producing wells gave Monsanto a net increase of 43.33 wells. Among them were 19 wildcat producers. The more significant finds included a gas well and an oil well in New Mexico, a gas well in Oklahoma and an oil well in North Dakota.

In North Dakota, development of existing fields was highlighted by new wells that added more than 1,000 barrels to Monsanto's daily oil production. In southern Arkansas, where the company has substantial production, Monsanto is participating in an experimental project to effect secondary recovery of crude oil by steam injection. It is hoped this will lead to substantial reserves of crude heretofore unrecoverable.

An area for future development was staked out in 1964 when Monsanto was licensed to explore 92 square miles of the North Sea off England. In 1965, seismographic tests will be conducted there to aid further evaluation of the oil and gas potential.

Retail sales of gasolines and lubricants were 10 per cent above 1963 levels. Ten new distributorships were established in key market areas of Louisiana, Mississippi, Tennessee and Texas.

PHARMACEUTICALS, FLAVORS AND CONDIMENTS

The group's overall sales increase amounted to eight per cent.

At its St. Louis facilities for making bulk aspirin, Monsanto completed one expansion and began another. The two-part capacity increase will nearly double the company's domestic output of the popular low-priced medicinal. Monsanto, which also manufactures aspirin in the United Kingdom, is among the world's major producers.

Production of calcium saccharin, a special sweetener for persons on low-sodium diets, began in 1964. At St. Louis, Monsanto's saccharin capacity is being doubled and facilities to make cyclamate sweeteners are under construction. Both projects are scheduled for 1965 completion. Monsanto is the only major supplier of all types of nonnutritive sweeteners.

The company's position as a leading producer of food-grade acidulants also is being strengthened. In 1965, a new unit at St. Louis will start making a special fumaric acid that dissolves easily in cold water. The patented product imparts a tartness to such items as powdered beverages and fruit-juice drink concentrates.

In 1964, a food laboratory was established at Monsanto's St. Louis Research Center. Its main purpose is to develop new and improved specialty ingredients for foods.

TEXTILE AND PAPER CHEMICALS

The group's total sales declined six per cent.

In response to a worldwide shortage of acrylonitrile, Monsanto in 1964 completed one expansion, began a second and planned a third. At Texas City, output was increased 30 per cent. At Chocolate Bayou, the company's second acrylonitrile facility neared completion. And another expansion, also to be at Chocolate Bayou, was scheduled for completion by mid-1966. These moves will more than triple Monsanto's total acrylonitrile capacity.

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Scriptset 540 additive, for treating paper surfaces, was used by customers in substantial quantity to give offset printing papers improved water resistance and smoother surfaces, and to manufacture stock for paper cups.

Scriptite 435 resin, which gives paper extra wet strength, was successfully introduced. It is useful in making paper for bags, towels, napkins, tea bags, posters and other products exposed to weather or water.

Other new products undergoing commercial trials in 1964 included a material for producing transparent tracing papers and business forms, and a modifier to improve the performance of starch paper size.

HEAVY CHEMICALS

Several production units were expanded as steadily growing demand helped increase sales of heavy chemicals by 17 per cent.

Sulfuric acid output was close to capacity. A new unit went into production at the El Dorado, Ark., chemical plant. Meanwhile, worldwide sales of Monsanto-designed sulfuric acid plants to other producers more than doubled.

Capacity for vanadium catalyst — a key material in sulfuric acid production — was increased at Monsanto, Ill. In India, manufacture of the catalyst was begun by a Monsanto licensee.

Monsanto's *Santocel* specialty silica products — for flattening surface coatings and thickening resin systems — came into broader use. Facilities for their manufacture were expanded at Everett, Mass.

On Cote Blanche Island, La., the salt mine in which Monsanto owns an interest neared completion. The mine is to be in full operation by mid-1965, when a large production shaft is completed. Monsanto will use some of its salt as a raw material; the balance will be marketed.

OTHER PRODUCTS

Silicon — for the manufacture of electronic devices — is the most important product in the group. Its sales more than doubled.

Monsanto, which offers a complete line of silicon varieties, intensified its research and development efforts on this "space-age" product. One result of this accelerated program was the development of highly complex epitaxial wafers.

At St. Charles, Mo., capacity of the silicon plant was more than doubled. At Ruabon, Wales, another silicon expansion was near completion at the end of the year. The two expansions increase Monsanto's ability to supply the many silicon forms needed in the international market.

RESEARCH, DEVELOPMENT AND ENGINEERING

Concentrated technological effort again helped keep Monsanto in the forefront of an intensely competitive industry.

From the company's laboratories came new developments to enhance corporate profitability. They included not only many new products but a number of process improvements to help trim production costs and boost yields.

In 1964, the company introduced 42 new chemical products. This total does not include the many important new models added to previously existing lines of fibers, plastics and packages. Such product improvements are no less indicative of creativity. They are excluded simply because they represent evolutionary products rather than revolutionary ones.

Also in 1964, Monsanto received a total of 1,362 U.S. and foreign patents.

Expenditures for research, development, patent work and basic engineering totaled \$66.8 million, compared to \$58.4 million in 1963.

The Central Engineering Department formed in 1964 will provide Monsanto's worldwide operations with integrated engineering services that embrace planning and evaluation; design of processes, equipment, facilities and buildings; purchasing; and construction of all major capital projects. To help the new department fulfill its function overseas, Monsanto International Engineering Company Inc. was also formed as a subsidiary in 1964. The latter firm has established offices in London and Brussels.

GROSS ADDITIONS TO PROPERTY AND DEPRECIATION*

(Millions of Dollars)

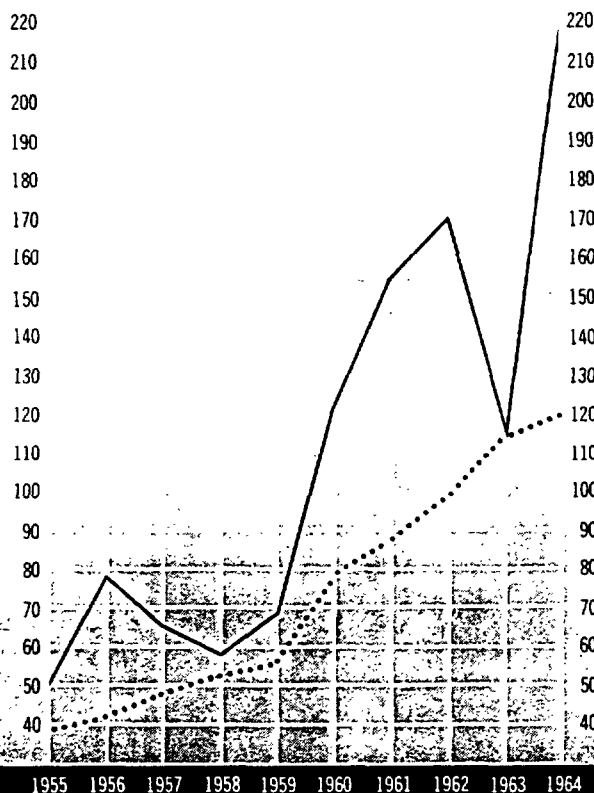
*Depreciation includes:
depreciation, obsolescence,
amortization and depletion.

*Chemstrand and subsidiaries not
included in years prior to 1960.*

PROPERTY
ADDITIONS

DEPRECIATION
PROVISION

.....



There were no major changes in the conduct of Monsanto research in 1964. Yet, the desire to grow from within prompted a modest reorientation of effort. For example, there was greater emphasis on food ingredients, polyester fibers, unusual plastics, and electronic chemicals.

Man's chemistry, skillful as it is, is outmatched by the chemistry of nature. Where man requires great heat and high pressure to accomplish his ends, nature performs her wonders more delicately, with catalysts and template patterns called enzymes. Part of Monsanto's research is devoted to

gaining an understanding of these mechanisms of nature and applying them to industrial purposes.

Increased understanding of the relationship between the structure and properties of polymers led to the discovery of new polymer applications in pigment binders for paper, floor tile and surface coatings.

Probing into the high-temperature region, Monsanto scientists developed organic fibers for use in systems operating at more than 1,000°F. A series of inorganic fibers was compounded for use at temperatures in excess of 3,000°F.

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In support of the U. S. space program, a device was developed to convert energy from the sun into electricity. The device is a cell made of Monsanto's gallium phosphide. It can function at temperatures as high as 675°F, which is some 200 degrees beyond the capability of materials in present use but still short of the research objective.

Significant projects undertaken for the government by wholly owned Monsanto Research Corporation involved successful building and testing of an experimental thermoelectric generator to run at high temperatures; development of promising anti-radiation drugs; and work on fuel cells capable of producing electricity from a variety of fuels and oxidizers (including air).

Mound Laboratory — which the research subsidiary operates at Miamisburg, Ohio, for the Atomic Energy Commission — continued to conduct important research, development and manufacturing activities. In 1964, this key unit in the nation's nuclear programs was named sole distributor of stable gaseous isotopes such as helium-3, uses for which include research at extremely low temperatures. The laboratory also distributes carbon-13, particularly useful as a tracer in medical research.

A new textile technical center began operating in 1964 at Leicester, England.

CORPORATE INSURANCE

In November, Monsanto made a substantial change in its insurance program. Among the important features of a new broad-coverage policy placed on Monsanto's U.S. properties is a deductible of \$2 million for each loss incurred. Retention by the company of the first \$2 million of loss has significantly reduced premium costs. A self-insurance reserve considered adequate has been established to absorb losses assumed by Monsanto under the deductible provisions of this new coverage.

PERSONNEL

Expanding operations required the largest annual addition of technical and professional personnel in Monsanto's history.

Training programs were expanded. A management development program inaugurated in 1964 includes group courses in advanced technical and management concepts. Also implemented was a new plan to identify individuals with exceptional management potential and to accelerate their development.

Courses in advanced technology proved valuable to engineering managers and supervisors. And an expanded three-year training program for marketing people was prepared for 1965 launching. The latter program provides new salesmen with on-the-job training combined with orientation courses and sales training — both basic and advanced.

There was continued emphasis on in-plant training, individual performance reviews, job rotation, and management and academic leaves for advanced education at universities.

Monsanto gave financial aid to universities and educational organizations in support of fellowships, scholarships and departmental operations. More than 150 departments of U.S. schools received such aid in 1964.

To the mutual benefit of Monsanto and its organized employees, work contracts covering more than one year were agreed to at 11 locations. Five three-year agreements were reached; six negotiations resulted in two-year agreements.

Three work stoppages occurred in 1964. One, where a first contract was under negotiation, lasted five weeks. Neither of the other two ran more than a week.

Monsanto's worldwide employment rose nine per cent, increasing the total number on the payroll to 52,284. Despite this increase in personnel, the company's 1964 injury rate was well below the industry average.

These were among the executive changes in 1964:

Vice President and Director Edward A. O'Neal Jr. was elected to the Executive Committee. Prior to taking over the new post in St. Louis, Mr. O'Neal had been president of the Chemstrand Company Division. As a member of the Executive Committee, he is concerned with the general area of fibers and textiles.

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Vice President Tom K. Smith Jr. transferred from St. Louis to New York to become Chemstrand's new president. Before that, Mr. Smith had been general manager of the Agricultural Division.

Robert R. Rumer, former director of manufacturing for the Agricultural Division, became that division's general manager. (In January, 1965, he was elected a vice president.)

Vice President Marshall E. Young, who had been general manager of the International Division, transferred from St. Louis to Washington to head Monsanto's regional office there. He succeeds Vice President Edward W. Gamble Jr., who will retire shortly, following 15 years of Monsanto service in the nation's capital.

Monte C. Throdahl became general manager of the International Division, having previously

served as its assistant general manager. (He was elected a vice president in January, 1965.)

Treasurer Patrick J. Dowd was elected a vice president.

Irving C. Smith, who had been deputy managing director of Monsanto Europe S.A. at Brussels, became managing director. He replaced Peter Webb, who transferred to the United States to take over an important assignment in commercial development.

Earl J. Wipfler, a former assistant controller, was elected controller. He succeeded Marlette C. Covert, who suffered a fatal heart attack in May.

John M. Depp was appointed director of the newly formed Central Engineering Department. Prior to that, he had been assistant general manager of the Inorganic Chemicals Division.

MONSANTO'S WORLDWIDE INTERESTS

This list, which includes Monsanto's principal equities, reveals the scope and diversity of the company's international activities. No attempt is made to indicate size. Many companies named here are chemical industry leaders in their respective countries. Others are relatively small. Omitted entirely are the more than 100 sales agencies representing Monsanto in virtually all parts of the Free World. Percent ownerships, in some cases rounded to the nearest whole number, are shown parenthetically.

NORTH AMERICA

UNITED STATES:

Chemstrand Research Center Inc. (100%) conducts research in the field of textiles.

Filtered Rosin Products Company (100%) produces gum naval stores and synthetic resins.

Leonard Construction Company (100%) designs and builds chemical plants and other types of plants.

Mobay Chemical Company (50%) is a major producer of urethane chemicals.

Monsanto International Engineering Company Inc. (100%) provides engineering service and counsel to the parent company and overseas units.

Monsanto Research Corporation (100%) does research for government agencies and for Monsanto; produces nuclear sources; operates a government-owned laboratory for the Atomic Energy Commission.

Polythane Corporation (100%) manufactures spandex elastomeric yarns.

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Shawinigan Resins Corporation (100%) makes plastics raw materials.

Wood Treating Chemicals Company (100%) produces wood preservatives.

CANADA:

Monsanto Canada Limited (100%) manufactures chemicals and plastics raw materials.

Monsanto Oils Limited (100%) handles oil and gas exploration and production in Canada.

Plax Canada Limited (50%) produces plastic blownware.

MEXICO:

Monsanto Mexicana S. A. (100%) produces chemicals, plastics raw materials and building products. A major subsidiary makes plastics into consumer products.

CENTRAL AND SOUTH AMERICA

ARGENTINA:

Monsanto Argentina S.A.I.C. (100%) manufactures chemicals and plastics raw materials.

BRAZIL:

Monsanto Comercio e Industria Limitada (100%) performs technical service and development activities in South America.

COLOMBIA:

Fabrica de Hilazas Vanylon S. A. (49%) produces nylon 6 yarns.

GUATEMALA:

Monsanto (Guatemala) S. A. (100%) will formulate insecticides starting in 1965.

PANAMA:

Monsanto Overseas S. A. (100%) handles certain investments and licensing outside the U. S.

PUERTO RICO:

Chemstrand Overseas S. A. (100%) markets Chemstrand products exported to areas outside Europe and handles certain investments outside the U. S.

VENEZUELA:

Monsanto Venezuela Inc. (100%) produces oil.

EUROPE AND MIDDLE EAST

BELGIUM:

Monsanto Europe S. A. (100%) provides management supervision of investments and marketing activities in Europe and the Middle East, and produces polyvinyl butyral plastic interlayer for laminated safety glass.

Sidaplast S. A. (50%) produces biaxially oriented plastic film.

FRANCE:

Societe Monsanto (100%) makes plastics raw materials and paper chemicals.

ISRAEL:

Israeli Chemical Fibres Limited (60%) manufactures *Acrilan* acrylic fiber.

ITALY:

Applicazioni Chimiche Societa Per Azioni (40%) produces acrylic fiber.

LUXEMBOURG:

Monsanto Cie S.A. (100%) will begin making Chemstrand nylon 6, 6 yarns in 1965.

SPAIN:

Aiscondel S.A. (50%) makes consumer products of plastics. Two subsidiaries produce chemicals and plastics raw materials.

SWITZERLAND:

Chemstrand International S.A. (100%) markets Chemstrand fibers and yarns in Switzerland and Austria.

Monsanto Research S.A. (100%) conducts basic research.

Plax A.G. (100%) handles certain investing and licensing matters.

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UNITED KINGDOM:

Chemstrand Limited (100%) manufactures *Acrilan* acrylic fiber and will start making nylon 6, 6 fiber in 1966.

Lansil Limited (100%) produces acetate flake and yarn, textile fabrics and garments.

Monsanto Chemicals Limited (67%) manufactures chemicals, plastics and plastics raw materials. Major subsidiaries produce plastics for construction and packaging.

Polythane Fibres Limited (100%) makes spandex yarns. A subsidiary produces rubber yarns.

WEST GERMANY:

Monsanto (Deutschland) GmbH (100%) markets chemical fibers and provides technical service on chemicals and plastics.

ASIA AND AUSTRALIA**AUSTRALIA:**

Australian Petrochemicals Limited (55%) manufactures plastics raw materials.

Monsanto Chemicals (Australia) Limited (80%) makes chemicals and plastics raw materials. A subsidiary produces fluorocarbons.

INDIA:

Monsanto Chemicals of India Pvt. Limited (83%) markets chemicals and plastics raw materials in India.

JAPAN:

Mitsubishi Monsanto Chemical Company (50%) manufactures chemicals, plastics and plastics raw materials.

Mitsubishi Vonnel Company Limited (38%) makes acrylic fiber.

Monsanto Japan Limited (100%) is a sales and service organization.

SHAREOWNERS OF RECORD

	1964		1963		1962		1961		1960	
	Number of Share-owners	Number of Shares	Number of Share-owners	Number of Shares	Number of Share-owners	Number of Shares	Number of Share-owners	Number of Shares	Number of Share-owners	Number of Shares
Men	30,446	4,691,800	27,863	4,354,601	28,545	4,557,252	28,722	4,723,196	29,953	4,810,770
Women	28,328	3,850,905	24,322	3,603,280	24,657	3,640,656	24,565	3,647,262	24,680	3,682,808
Joint Accounts	17,770	909,442	16,881	876,116	17,375	858,686	17,346	852,952	18,173	923,112
Charitable Institutions	480	204,432	395	144,691	224	87,445	234	125,849	263	130,699
Educational Institutions	136	190,164	127	151,485	117	178,808	111	154,489	107	151,581
Estates and Trusts	9,384	1,669,731	8,065	1,395,227	8,446	1,697,284	8,191	1,875,843	7,755	1,804,416
Insurance Companies	236	1,196,581	211	1,058,065	201	988,887	190	859,916	178	782,364
Brokers and Nominees	1,685	16,629,555	1,640	13,397,722	1,133	9,856,764	1,120	9,090,762	1,063	8,666,965
All Others	1,368	1,517,317	1,104	4,982,638	1,754	7,144,365	1,724	6,693,171	1,637	6,242,474
Total	<u>89,833</u>	<u>30,859,927</u>	<u>80,608</u>	<u>29,963,825</u>	<u>82,452</u>	<u>29,010,147</u>	<u>82,203</u>	<u>28,023,440</u>	<u>83,809</u>	<u>27,195,189</u>

In 1964, 68 per cent of Monsanto shareowners held fewer than 100 shares.

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ACCOUNTANTS' OPINION**HASKINS & SELLS**

CERTIFIED PUBLIC ACCOUNTANTS

BOATMEN'S BANK BUILDING

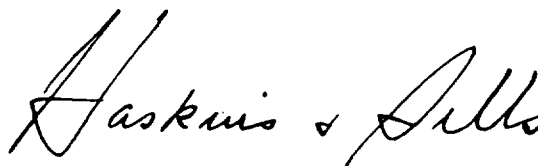
SAINT LOUIS 63102

Monsanto Company:

We have examined the statement of consolidated financial position of Monsanto Company and its subsidiary companies as of December 31, 1964 and the related statements of consolidated income and paid-in surplus and retained earnings for the year then ended. Our examination was 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 statement of consolidated financial position and statements of consolidated income and paid-in surplus and retained earnings present fairly the financial position of Monsanto Company and its subsidiaries at December 31, 1964 and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

February 8, 1965



MAR 000782

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MONSANTO COMPANY

STATEMENT OF CONSOLIDATED FINANCIAL POSITION

ASSETS

	1964	1963
	(In Thousands)	
Current Assets:		
Cash.....	\$ 27,768	\$ 40,896
Marketable securities, at cost which approximates market.....	52,806	84,667
Net receivables.....	239,753	198,703
Inventories.....	214,915	191,579
	<u>535,242</u>	<u>515,845</u>
Investments and Miscellaneous Assets, at Cost or Less:		
Investment in and advances to associates.....	25,250	29,382
Miscellaneous investments and receivables.....	60,650	56,256
	<u>85,900</u>	<u>85,638</u>
Property, Plant and Equipment, at Cost.....	1,698,250	1,520,813
Less accumulated depreciation and depletion, etc.....	822,267	740,535
Net property.....	<u>875,983</u>	<u>780,278</u>
Deferred Charges.....	37,843	32,436
	<u>\$1,534,968</u>	<u>\$1,414,197</u>

The above statement should be read in conjunction with pages 22 and 23 of this report.

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AND SUBSIDIARIES

AT DECEMBER 31, 1964 AND 1963

LIABILITIES

	1964	1963
	(In Thousands)	
Current Liabilities:		
Accounts payable and accruals.....	\$ 154,770	\$ 122,803
Income taxes.....	75,870	69,041
Current portion of long term debt (less \$1,000,000 debentures in treasury)	10,500	10,227
	<u>241,140</u>	<u>202,071</u>
Notes, Debentures, etc.—Less Current Portion Above.....	<u>345,480</u>	<u>352,801</u>
Other Liabilities:		
Deferred income taxes.....	46,375	41,335
Miscellaneous.....	3,436	2,431
	<u>49,811</u>	<u>43,766</u>
Minority Interests in Subsidiary Companies.....	<u>26,858</u>	<u>31,326</u>
Shareowners' Equity:		
Common shares—authorized, 35,000,000 shares, par value \$2 each; outstanding, 30,859,927 shares in 1964 and 29,963,825 shares in 1963	61,720	59,928
Paid-in surplus.....	466,030	406,243
Retained earnings.....	343,929	318,062
	<u>871,679</u>	<u>784,233</u>
	<u>\$1,534,968</u>	<u>\$1,414,197</u>

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MONSANTO COMPANY

STATEMENT OF CONSOLIDATED INCOME

	1964	1963	Increase Decrease
	(In Thousands)		
Net Sales.....	\$1,358,678	\$1,192,270	\$166,408
Cost of Goods Sold.....	940,077	849,669	90,408
Gross Profit.....	418,601	342,601	76,000
Less:			
Selling and administrative expenses.....	134,279	117,714	16,565
Research, development, patent and engineering expenses.....	66,796	58,395	8,401
	201,075	176,109	24,966
Operating Profit.....	217,526	166,492	51,034
Income Charges — Net.....	3,457	6,086	2,629
Income Before Income Taxes.....	214,069	160,406	53,663
Provision for Income Taxes:			
Current.....	87,198	65,043	22,155
Deferred.....	11,980	12,373	393
	99,178	77,416	21,762
Net Income.....	\$ 114,891	\$ 82,990	\$ 31,901

The above statement should be read in conjunction with pages 22 and 23 of this report.

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AND SUBSIDIARIES

STATEMENT OF CONSOLIDATED PAID-IN SURPLUS AND RETAINED EARNINGS

	1964	1963
	(In Thousands)	
PAID-IN SURPLUS		
Balance at Beginning of Year.....	\$406,243	\$360,856
Additions:		
Excess of approximate market value of common capital stock distributed as a stock dividend over the par value thereof.....	48,263	31,549
Excess of amounts received over the par value of common capital stock issued under stock option plans.....	11,524	13,798
Other.....		40
Balance at End of Year.....	<u>\$466,030</u>	<u>\$406,243</u>
RETAINED EARNINGS		
Balance at Beginning of Year.....	\$318,062	\$298,710
Additions:		
Net income for the year.....	114,891	82,990
One-half of retained earnings at December 31, 1962 of Shawinigan Resins Corporation, a 50 per cent-owned company, which became a wholly-owned subsidiary in April 1963.....		4,062
	<u>432,953</u>	<u>385,762</u>
Deductions:		
Dividends on capital stock of parent company:		
Cash — \$1.25 a share in 1964 and \$1.20 a share in 1963.....	37,606	34,978
Stock — 2%.....	49,471	32,722
	<u>87,077</u>	<u>67,700</u>
One-half of deficit at December 31, 1963 of Polythane Corporation and subsidiaries, 50 per cent-owned companies, which became wholly-owned subsidiaries in May 1964.....	1,947	
	<u>89,024</u>	<u>67,700</u>
Balance at end of year.....	<u>\$343,929</u>	<u>\$318,062</u>

The above statement should be read in conjunction with pages 22 and 23 of this report.

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FINANCIAL REVIEW

The accompanying financial statements (pages 18 through 21) consolidate all active domestic and foreign subsidiaries in which Monsanto Company directly or indirectly has more than a 50 per cent interest.

The equity in the unaudited 1964 net income of 50 per cent-owned companies was \$1,786,000, compared with \$2,059,000 in 1963. Dividends of \$1,112,000 were received from these companies in 1964 and \$1,300,000 in 1963. The equity in the unaudited net assets of such companies at the end of the year was \$27,051,000, which exceeded the carrying value of \$25,250,000 by \$1,801,000. The decline in equity in net assets of associates from 1963 is largely attributable to certain retroactive adjustments which were charged to retained earnings.

The Revenue Act of 1964 provides for the continuation of the credit against Federal income taxes equal to approximately seven per cent of expenditures for machinery and equipment purchased and placed in service during the year, but eliminates, retroactive to January 1, 1962, the provision in the prior law which required a corresponding reduction of the depreciable tax base of such property. Consequently, the entire amount of the investment credit for 1964, \$5,946,000, has been used to reduce the current year's income tax provision. The unamortized balance of deferred income taxes relating to the investment credit for 1963 and 1962 amounting to \$5,044,000 was transferred to the current income tax liability, and net income for the current year was not affected.

The use of the sum of the years digits method for computing depreciation on most of new assets acquired since 1954 was continued in 1964. The excess of depreciation provided by this method over straight line depreciation was \$17,252,000 in 1964 and \$18,646,000 in 1963. For income tax purposes only, the company and one of its subsidiaries in 1962 adopted the guideline lives established for machinery and equipment by the United States Treasury Department. The additional depreciation taken for tax purposes reduces the current income tax liability of these companies. Net income for the year, however, is not affected, since an amount equivalent to the reduction in current taxes payable is charged to income to provide for deferred taxes payable in future years.

Charges against income for depreciation, obsolescence and depletion amounted to \$120,268,000,

of which \$116,596,000 was depreciation and obsolescence and \$3,672,000 depletion. In 1963, such charges were \$111,092,000 and \$3,514,000.

Repair and maintenance charges included in operating expenses were \$80,432,000 in 1964 and \$76,628,000 in 1963.

The company has a number of lease agreements covering the use of tank cars, other transportation equipment, office space, office equipment, etc., which are generally cancellable without penalty. For the most part, the agreements are short term, with a few extending up to 20 years. The annual rental for all leases amounts to approximately \$15,921,000.

In certain prior years, provisions were made for income taxes payable in future years resulting primarily from the excess of depreciation and amortization of facilities constructed under Certificates of Necessity for income tax purposes over depreciation for accounting purposes. For the years 1964 and 1963, \$1,821,000 and \$4,138,000 of such taxes became payable and were charged against the reserve provided in prior years.

Examination of the company's Federal income tax returns has been completed for all years through 1956, and returns for the years 1957 through 1959 are presently under examination by the Internal Revenue Service. Differences in opinion exist between the company and the service on the tax treatment of certain items of income and expense. The ultimate disposition of the items in question is not presently determinable. It is believed that adequate provision has been made in the accounts for possible deficiencies.

Reserves for doubtful accounts were \$5,446,000 in 1964 and \$5,158,000 in 1963.

Inventories are generally stated at the lower of cost or market, determined on the first-in, first-out basis. Annual rate of turnover was 4.6 in 1964 and 4.7 in 1963.

The long term debt of the company and its subsidiaries, exclusive of current maturities, totaled \$345,480,000 at the end of 1964, as shown in the table on page 23.

To assist in financing the company's large program of capital expenditures, arrangements were made in February, 1965, for the parent company to borrow \$100 million for a period up to 10 years.

The company was contingently liable as guarantor of bank loans to 50 per cent-owned companies and others aggregating approximately \$12,300,000

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at December 31, 1964 and \$7,700,000 at the end of 1963.

In 1964, cash dividends of 30 cents in each of the first three quarters and 35 cents in the fourth quarter were paid on the common shares. Also, 604,340 common shares were issued on December 22, 1964 in payment of a two per cent stock dividend.

The company has four stock option plans in effect: the plans authorized by shareowners in 1951, 1960 and 1964 for key employees, and the Third Employees' Stock Plan, authorized by shareowners in 1964 for hourly and salaried employees except participants in the three plans for key employees. The status of the authorized shares of the three key plans and the changes occurring during the year were:

	1951 Plan	1960 Plan	1964 Plan
Outstanding 1/1/64.....	112,636	494,987	
Unoptioned 1/1/64.....		7,174	
Authorized during year..			550,000
Optioned during year....		5,500	401,250
Exercised during year... 74,167	217,567		
Terminated during year..		877	
Outstanding 12/31/64..	39,284*	287,995*	409,050*
Unoptioned 12/31/64..		2,687*	151,950*

*Adjusted for 1964 two per cent stock dividend.

Under the three key plans, 574 options are outstanding, at prices, after adjustment for stock dividends, ranging from \$31.76 to \$84.56 a share.

The following tabulation sets forth information for 1964 on common shares relating to the Third Employees' Stock Plan:

Authorized.....	650,000
Optioned:	
June 23 (27-month options) at	
\$75.00 each.....	297,675
December 23 (21-month options) at	
\$81.50 each.....	—
Exercised.....	28
Terminated.....	11,014
Outstanding 12/31/64.....	286,633
Unoptioned 12/31/64.....	363,339

Subsequent to December 31, 1964, but prior to January 25, 1965, the expiration date for the December offering, options for an additional 12,291 shares were accepted by employees.

The option prices are equal to 95 per cent of the fair market value on the dates the options were offered. Payments by the employee over the option period are made by payroll deductions on which the company credits interest at a rate of five per cent.

LONG TERM DEBT (Exclusive of Current Maturities)

	1964 (In Thousands)	1963
Parent company:		
3¼% sinking fund debentures, due 1968.....	\$ 7,500	\$ 8,750
2.65% debentures, due 1971 (less in treasury, \$1,000,000 in 1964 and \$2,000,000 in 1963)....	20,000	20,000
3½% sinking fund debentures, due 1972.....	9,500	10,000
3½% promissory notes, due 1972.....	41,012	48,212
4¾% promissory notes, due 1993.....	100,000	100,000
3¾% income debentures, due 2002.....	91,000	91,000
4¼% income debentures, due 2008.....	50,000	50,000
Shawinigan Resins Corporation:		
4½% debentures, due 1976.....	3,720	4,060
Monsanto Chemicals Limited (British subsidiary):		
6% debentures, due 1977/82.....	7,769	7,980
5% debentures, due 1982.....	9,061	9,307
Monsanto Cie, S.A. (Luxembourgian subsidiary):		
Bank loan.....	3,000	1,669
Other subsidiaries.....	2,918	1,823
Total.....	<u>\$345,480</u>	<u>\$352,801</u>

MONSANTO COMPANY

HISTORICAL STATEMENT OF

(In millions)

ASSETS

	1964	1963	1962	1961	1960	10 YEARS AGO 1954	25 YEARS AGO 1939
Current Assets:							
Cash.....	\$ 27.8	\$ 40.9	\$ 34.4	\$ 28.9	\$ 32.8	\$ 39.2	\$ 9.3
Marketable securities.....	52.8	84.7	67.1	18.6	75.1	.9	2.0
Net receivables.....	239.7	198.7	173.9	152.7	124.4	46.2	5.3
Inventories.....	214.9	191.6	170.6	154.5	153.5	68.8	9.3
	535.2	515.9	446.0	354.7	385.8	155.1	25.9
Investments, etc.....	85.9	85.6	84.4	90.5	75.4	33.8	1.2
Property:							
Land.....	27.4	27.7	25.2	23.4	19.2	6.5	1.8
Buildings.....	263.0	237.0	219.3	195.0	181.0	64.8	10.0
Machinery and equipment.....	1,295.2	1,148.2	1,054.5	907.0	795.5	283.0	31.6
Phosphate deposits.....	9.8	9.6	8.6	8.5	8.1	5.0	.7
Producing oil and gas properties....	94.7	89.2	84.8	82.1	79.5	—	—
Undeveloped oil and gas leaseholds.	8.2	9.1	9.6	8.9	9.0	—	—
Accumulated depreciation, etc.....	785.7	707.2	600.9	514.8	449.4	126.5	16.5
Accumulated depletion.....	36.6	33.3	31.2	29.3	27.2	.7	.1
Net property.....	876.0	780.3	769.9	680.8	615.7	232.1	27.5
Deferred Charges.....	37.9	32.4	24.6	16.3	12.7	4.5	.2
	\$1,535.0	\$1,414.2	\$1,324.9	\$1,142.3	\$1,089.6	\$425.5	\$54.8

(1) After deduction of tax notes of \$17.3 million.
Italics indicate deduction.

MAR 000789

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AND SUBSIDIARIES

CONSOLIDATED FINANCIAL POSITION

(In millions)

LIABILITIES

	1964	1963	1962	1961	1960	10 YEARS AGO 1954	25 YEARS AGO 1939
Current Liabilities:							
Accounts payable and accruals.....	\$ 154.8	\$ 122.8	\$ 127.0	\$ 109.3	\$ 86.4	\$ 37.2	\$ 4.6
Income taxes.....	75.8	69.1	42.9	48.8	46.8	(1) 5.9	1.4
Current portion long term debt.....	10.5	10.2	9.3	9.2	9.9	—	—
	241.1	202.1	179.2	167.3	143.1	43.1	6.0
Notes, Debentures, etc.....	345.5	352.8	360.8	269.2	289.2	106.5	—
Other Liabilities:							
Deferred income taxes.....	46.4	41.4	33.5	28.1	31.1	5.0	—
Miscellaneous.....	3.4	2.4	3.5	3.4	3.1	5.8	.2
	49.8	43.8	37.0	31.5	34.2	10.8	.2
Minority Interests in Subsidiaries....	26.9	31.3	30.3	23.1	23.1	19.3	2.3
Shareowners' Equity:							
Preference shares.....	—	—	—	—	—	15.0	10.0
Common shares.....	61.7	59.9	58.0	56.0	54.4	26.4	12.4
Paid-in surplus.....	466.1	406.2	360.9	323.1	286.7	100.5	11.3
Retained earnings.....	343.9	318.1	298.7	272.1	258.9	103.9	12.6
	871.7	784.2	717.6	651.2	600.0	245.8	46.3
	\$1,535.0	\$1,414.2	\$1,324.9	\$1,142.3	\$1,089.6	\$425.5	\$54.8

MAR 000790

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MONSANTO COMPANY

HISTORICAL STATEMENT OF CONSOLIDATED INCOME

(In millions except per share earnings)

	1964	1963	1962	1961	1960	10 YEARS AGO 1954	25 YEARS AGO 1939
Net Sales	\$1,358.7	\$1,192.3	\$1,063.2	\$932.9	\$890.1	\$384.2	\$43.0
Cost of Goods Sold	940.1	849.7	762.2	672.9	632.7	273.9	30.1
Gross Profit	418.6	342.6	301.0	260.0	257.4	110.3	12.9
Less:							
Selling, administrative.....	134.3	117.7	100.1	84.7	79.9	43.2	4.4
Research, development, patent, engineering.....	66.8	58.4	51.6	46.7	46.4	15.5	1.2
	201.1	176.1	151.7	131.4	126.3	58.7	5.6
Operating Profit	217.5	166.5	149.3	128.6	131.1	51.6	7.3
Income Charges — Net	3.4	6.1	8.0	1.5	4.5	5.0	.4
Income Before Income Taxes	214.1	160.4	141.3	127.1	126.6	46.6	6.9
Provision for Income Taxes	99.2	77.4	62.9	58.4	58.8	22.3	1.5
Net Income	\$ 114.9	\$ 83.0	\$ 78.4	\$ 68.7	\$ 67.8	\$ 24.3	\$ 5.4
Per Common Share:							
Adjusted for splits.....	\$ 3.72	\$ 2.77	\$ 2.70	\$ 2.45	\$ 2.49	\$ 1.50	\$.45
Adjusted for splits and stock dividends.....	\$ 3.72	\$ 2.72	\$ 2.60	\$ 2.31	\$ 2.30	\$ 1.26	\$.37

MAR 000791

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AND SUBSIDIARIES

OTHER DATA

(In millions except where italicized)

	1964	1963	1962	1961	1960	10 YEARS AGO 1954	25 YEARS AGO 1939
Plant additions and replacements....	\$218.1	\$114.5	\$168.8	\$153.8	\$121.3	\$ 43.1	\$ 4.1
Depreciation, depletion, etc.....	\$120.3	\$114.6	\$ 97.6	\$ 86.9	\$ 79.0	\$ 25.9	\$ 2.7
Dividends a common share ⁽¹⁾	<i>\$1.25</i>	<i>\$1.20</i>	<i>\$1.05</i>	<i>\$1.00</i>	<i>\$1.00</i>	<i>\$.83</i>	<i>\$.33</i>
Book value a common share ⁽¹⁾	<i>\$28.25</i>	<i>\$26.17</i>	<i>\$24.74</i>	<i>\$23.24</i>	<i>\$22.06</i>	<i>\$14.60</i>	<i>\$3.25</i>
Common shares ⁽¹⁾	30.9	30.0	29.0	28.0	27.2	15.8	11.2
Preference shares.....	—	—	—	—	—	150,000	100,000
Working capital.....	\$294.1	\$313.8	\$266.8	\$187.4	\$242.7	\$112.0	\$19.9
Long term debt (less current matur- ities).....	\$345.5	\$352.8	\$360.8	\$269.2	\$289.2	\$106.5	—
Shareowners' equity.....	\$871.7	\$784.2	\$717.6	\$651.2	\$600.0	\$245.8	\$46.3
Employees ⁽²⁾	52,284	48,133	45,665	38,621	36,266	19,348	6,580
Shareowners.....	89,833	80,608	82,452	82,203	83,809	24,222	9,143

(1) Adjusted for splits.

(2) Includes Monsanto employees in plant operated for U.S. Government (1,624 in 1964).

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MONSANTO COMPANY AND SUBSIDIARIES

SOURCE AND DISPOSITION OF FUNDS

(In Thousands)

Source of Funds:	TOTAL	1964	1963	1962	1961	1960
Net income	\$ 412,712	\$114,891	\$ 82,990	\$ 78,368	\$ 68,656	\$ 67,807
Provisions for:						
Depreciation, depletion, etc.	498,427	120,268	114,606	97,639	86,876	79,038
Deferred income taxes	35,804	11,980	12,373	11,451		
Insurance reserve	2,000	2,000				
Outside financing:						
4¾% promissory notes	99,593			99,593		
Other	4,945	3,276	1,669			
Common shares issued under options	40,245	12,108	14,532	2,639	9,926	1,040
Other — net	<i>13,622</i>	<i>429</i>	<i>5,368</i>	<i>2,366</i>	<i>7,918</i>	<i>2,273</i>
	<u>1,080,104</u>	<u>264,094</u>	<u>220,802</u>	<u>292,056</u>	<u>157,540</u>	<u>145,612</u>

Disposition of Funds:

Dividends on common shares	155,029	37,606	34,978	29,470	27,316	25,659
Plant additions and replacements	776,511	218,105	114,502	168,833	153,818	121,253
Investment in affiliated companies	60,913	13,340	18,443	9,597	9,810	9,723
Retirement of debt	73,590	10,418	13,452	17,877	21,928	9,915
Increase in working capital ⁽¹⁾	95,001	29,845	18,042	14,614	5,021	27,479
Increase — decrease in cash and securities ..	<i>80,940</i>	<i>45,220</i>	<i>21,385</i>	<i>51,665</i>	<i>60,353</i>	<i>48,417</i>
	<u>\$1,080,104</u>	<u>\$264,094</u>	<u>\$220,802</u>	<u>\$292,056</u>	<u>\$157,540</u>	<u>\$145,612</u>

(1) Exclusive of cash and securities.
Italics indicate deduction.

MAR 000793

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DIRECTORS AND OFFICERS

BOARD OF DIRECTORS

CHARLES ALLEN THOMAS, *Chairman* ST. LOUIS
DILLON ANDERSON HOUSTON
DAVID R. CALHOUN ST. LOUIS
JOHN L. CHRISTIAN ST. LOUIS
FREDRICK M. EATON NEW YORK
JOHN L. GILLIS ST. LOUIS
HERBERT HOOVER JR. LOS ANGELES
ROBERT K. MUELLER ST. LOUIS
EDWARD A. O'NEAL JR. ST. LOUIS
EDGAR M. QUEENY ST. LOUIS
CHARLES H. SOMMER ST. LOUIS
ALAN H. TEMPLE NEW YORK

EXECUTIVE COMMITTEE

CHARLES H. SOMMER, *Chairman*
JOHN L. CHRISTIAN ROBERT K. MUELLER
JOHN L. GILLIS EDWARD A. O'NEAL JR.
CHARLES ALLEN THOMAS

FINANCE COMMITTEE

EDGAR M. QUEENY, *Chairman*
DILLON ANDERSON HERBERT HOOVER JR.
DAVID R. CALHOUN CHARLES H. SOMMER
FREDRICK M. EATON ALAN H. TEMPLE
CHARLES ALLEN THOMAS

Transfer Agents

MORGAN GUARANTY TRUST COMPANY OF NEW YORK
THE BOATMEN'S NATIONAL BANK OF ST. LOUIS

Registrars

THE CHASE MANHATTAN BANK
ST. LOUIS UNION TRUST COMPANY

OFFICERS

CHARLES ALLEN THOMAS *Chairman of the Board*
CHARLES H. SOMMER *President*
JOHN L. CHRISTIAN *Vice President*
JOHN L. GILLIS *Vice President*
ROBERT K. MUELLER *Vice President*
EDWARD A. O'NEAL JR. *Vice President*

H. HAROLD BIBLE *Vice President*
EDWARD J. BOCK *Vice President*
JAMES E. CRAWFORD JR. *Vice President*
PATRICK J. DOWD *Vice President*
JOHN R. ECK *Vice President*
ARTHUR W. LUCAS *Vice President*
ROBERT M. MORRIS *Vice President*
EDWIN J. PUTZELL JR. *Vice President*
ROBERT R. RUMER *Vice President*
TOM K. SMITH JR. *Vice President*
MONTE C. THRODAHL *Vice President*
J. RUSSELL WILSON *Vice President*

EARL J. WIPFLER *Controller*
EDWIN J. PUTZELL JR. *Secretary*
PATRICK J. DOWD *Treasurer*

LLOYD R. COLE *Assistant Controller*
JACK W. MUELLER *Assistant Controller*
WALTER C. THILKING *Assistant Controller*
CHARLES E. CASPARI JR. *Assistant Secretary*
JOHN N. EHLERS *Assistant Secretary*
RODNEY HARRIS JR. *Assistant Secretary*
C. BRENT HOLLERAN *Assistant Secretary*
FRANKLIN C. REHFELD *Assistant Secretary*
NORVELL G. JONES *Assistant Treasurer*
J. ROBERT MATLOCK *Assistant Treasurer*
WALTER J. NABER JR. *Assistant Treasurer*
THOMAS M. RASMUSSEN *Assistant Treasurer*
ROLLA H. STOCKE *Assistant Treasurer*

Regional Vice Presidents

ROY L. BRANDENBURGER FRANKLIN J. CORNWELL
MARSHALL E. YOUNG

February 20, 1965

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