

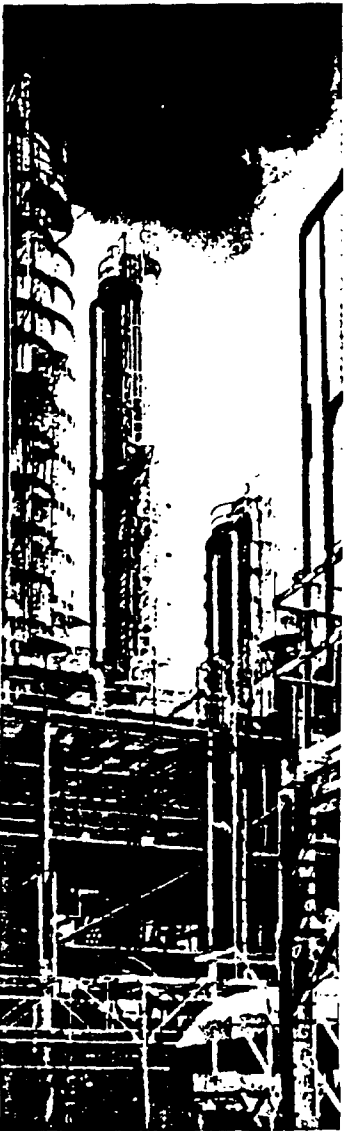
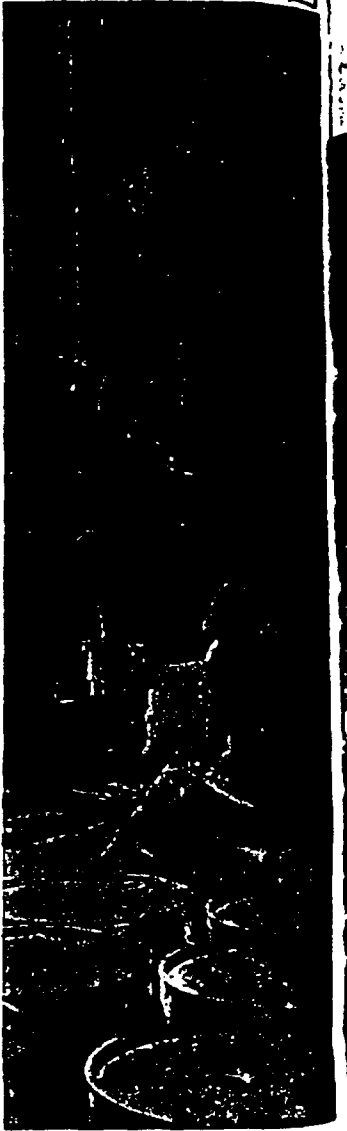
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Annual Report,

The Dow Chemical Company,

for the year 1963

In the story of a year's activity within a major company, certain occurrences carry special significance. Some are important as markers of new directions being taken. Others reveal achievement brilliantly won, or superiority patiently built. And while all necessarily reflect the philosophy guiding the company's actions, some will be particularly illuminating in this regard. This Annual Report summarizes Dow's activity of 1963. A few developments are discussed in more detail than usual, as significant and indicative of Dow's continuing record of progress.

SIXTY-SEVENTH FINANCIAL REPORT

Operations Highlights

(IN MILLIONS)	1963	1962 (UNAUDITED)
Net Sales	\$967.7	\$926.2
Total Income	989.4	946.4
Depreciation, Amortization, and Depletion	99.2	99.6
United States and Foreign Taxes on Income	64.6	58.5
Earnings for the Period	80.7	72.9
Earnings per Share	2.73	2.51
Cash Dividends Declared	47.1	46.6
Common Stockholders' Interest	724.9	698.8
Shares of Common Stock Outstanding	29,523,118	29,060,983
Common Stockholders	98,700	100,300

The Company changed from a fiscal year ended May 31 to a calendar year effective December 31, 1962. Income and surplus statements shown in this report for the year ended December 31, 1962 are for comparison only and have been prepared from the records without audit.

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H. D. Doan

The President's Letter

TO THE STOCKHOLDERS:

When you look at the 1963 earnings shown in this report, keep these facts in mind: Dow's over-all price index dropped four per cent during the year; this was the third straight year of price declines at this rate; each one per cent drop in the index takes away about \$5 million of potential Dow net earnings.

That's what makes our ten per cent gain in earnings a satisfactory accomplishment for 1963.

This gain was brought about by increased effectiveness in Dow's operations. Our past efforts—for the better, faster, easier, more productive, less expensive way to do the job in office, laboratory and plant—have built up real momentum, becoming a habit at all levels of responsibility. The 1963 results, in terms of improved effectiveness, were superb. We can be proud of the 31,500 Dow employees whose individual performance contributed to this.

I want particularly to mention one group of Dow employees. They number about fifty, and they are usually identified as "top management." Each of these men works in a key assignment within Dow, a major assignment such as management of a product department, a production division, a sizable research laboratory, a corporate staff or marketing group.

Notice that I say these men work. Indeed, that is the prime characteristic moving them upward in Dow. All have shown wide capabilities and acquired broad experience within the company—for while their average age is perhaps forty-five, their average Dow service runs close to twenty years.

This top management group is a Dow resource in

depth. Today, these are the men—talented, experienced, enterprising individuals—who run the company's day-to-day operations. They have a large role in our long-range planning. And as they assume greater and greater responsibilities with each step of Dow progress, in a sense they constitute a new and changing management.

This management team we are evolving ranks with the best in the industry. For this, credit must go to those Dow veterans who managed the company to its present position. They took the time, while building Dow, to find and test and train their successors.

One of the greatest of these veteran builders was lost to Dow in the death, on March 27, 1963, of Dr. C. J. Strosacker. A genius in chemical production, a pioneer in research, a manager in the finest sense, Dr. Strosacker was a long-time officer, director and member of the Executive Committee. He was a Dow employee more than fifty-four years and had a major part in developing such important areas of our activities as phenol, petrochemicals and plastics.

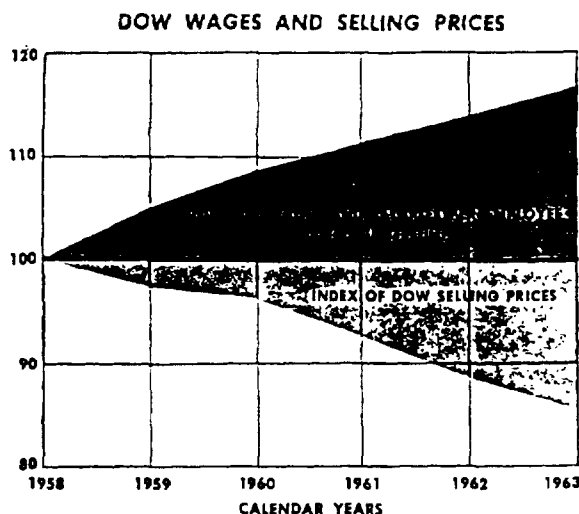
The spirit and character which Dr. Strosacker and his associates implanted in Dow is still with us. It shows in continuous and increasing effectiveness throughout the organization, especially in our top management ranks. It is a major factor in the strengths upon which we base our optimism for the years ahead.

Sincerely,

President

March 12, 1964

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QUARTERLY SUMMARY

	1963		1962	
QUARTER ENDED	SALES IN MILLIONS	EARNINGS PER SHARE*	SALES IN MILLIONS	EARNINGS PER SHARE*
3/31	224.1	.63	221.9	.42
6/30	246.0	.80	239.8	.83
9/30	249.3	.64	231.9	.68
12/31	248.3	.66	232.6	.58
TOTAL	967.7	2.73	926.2	2.51

* Based on shares outstanding at December 31.

Finance and Earnings

Earnings after taxes for the twelve months ended on December 31, 1963, amounted to \$80.7 million, a ten per cent increase over our earnings in calendar 1962. The earnings per share, on stock outstanding at year's end, were \$2.73, an increase of 8.7 per cent. Since dollar sales were only 4.5 per cent above the 1962 level, this increase in earnings is particularly noteworthy. It is due primarily to continued reductions in product costs.

The investment tax credit in 1963 amounted to \$2.2 million, of which forty-eight per cent—equal to about four cents per share after taxes—was credited to current earnings.

You will note from the chart showing the index of selling prices that events of 1963 bore out our prediction of a continued severe decline in prices. We feel, however, that the four per cent rate of decline of the last three years will abate in 1964.

In October of 1963, we sold \$100 million of 4.35 per cent debentures to the public and used the funds received to repay a like amount of long- and short-term debt. Subsequent events have proven the timeliness of this financing.

A statement showing source and application of funds appears as part of this section of the report. The increased working capital shown in the statement represents principally a decrease in short-term debt and an increase in accounts receivable.

In May of 1963, Dow paid a two per cent stock dividend to shareholders. This was the sixth such dividend in the past ten years.

An increase in the cash dividend has been declared

by the Board of Directors, to begin with the payment to be made on April 30, 1964. This establishes the annual cash dividend rate at \$1.80 per share; a rate of \$1.60 has been in effect since August, 1961.

Capital expenditures for the year were \$82 million. This compares to the \$69 million invested in new and expanded facilities in 1962. It is expected that these expenditures will rise again in 1964, to approximately \$100 million.

Sales

Sales of Dow products and services were \$968 million in 1963, a 4.5 per cent increase over our record sales in the 1962 calendar year. Sales to U.S. markets were up moderately and, in a reversal of 1962 experience, overseas markets showed major increases.

Our major product categories brought in these approximate shares of the total sales income:

Chemicals 48%	Bioproducts 9%
Plastics 36%	Metals 7%

The gains in world markets trace to groundwork done in past years and our ability, as European and other overseas economies open new opportunities for us, to move rapidly on such opportunities. Through much of the year our foreign sales showed a growth rate over thirty per cent. At year's end, this growth had settled to a lower but still substantial rate. Our position and outlook for the coming year show promise of continuing satisfactory progress in overseas activity.

In the U.S. marketplace we see no slackening of com-

SOURCE AND APPLICATION OF FUNDS (IN MILLIONS)

Source of funds:	
Earnings for the year	\$ 80.7
Depreciation	99.2
Total cash flow	\$179.9
Increase in long-term debt	40.9
Sale of fixed assets and other receipts	4.8
TOTAL	\$225.6
Application of funds:	
Cash dividends	\$ 47.1
Capital expenditures	82.1
Purchase of treasury stock	8.4
Increase in working capital	84.2
Other	3.8
TOTAL	\$225.6

petition. The pressures are real and constant. But the improving effectiveness developed throughout Dow in recent years, particularly improvements made during 1963, have strengthened our position in several areas.

As indicated in the President's Letter, our over-all price index declined last year. It is worth noting, however, that prices on some major products have moved up from past lows. Where price improvement has not been possible, production efficiencies and reduced manufacturing costs have allowed us to maintain profitability.

Our emphasis in marketing remains on sharpening and extending our ability to anticipate, identify and move rapidly to meet market changes. The pattern of our marketing organization focuses our strengths on the twenty-plus businesses identified as those Dow can most profitably serve. Besides meeting current product and service needs of customers, the pattern enables us to handle new needs as they emerge. Where appropriate, the organization changes—as in 1963 with establishment of the Government Affairs Department, the Consumer Products Department and the Packaging Department—in keeping with present and projected growth of the businesses in which we see opportunity for Dow.

Further opportunity lies ahead as the American economy, moving to higher levels, presents new demands on those who would serve it. Dow's capabilities in marketing, backed by strengths in research and production, are aimed at maximizing on those opportunities.

Chemicals sales reached a new high in 1963. In all lines, competition was a continuing factor, competition

Dow Builds on Strengths and Depth For Bigger Role in Growth Areas

Dow, in setting up three new corporate departments in 1963, emphasized the growing dimensions of its activities—and, more significantly, its estimates and intentions—in certain areas of opportunity.

The three are the Government Affairs Department, the Consumer Products Department and the Packaging Department. Each marks an organizational step for broadened application of Dow strengths and capabilities in service and supply to large and still-expanding markets. Each proceeds from a base of prior Dow experience and a wealth of closely related technical and operating skills.

In recent years, for instance, Dow has been a supplier and contractor for the United States Government to a relatively modest extent. We sold various chemicals to civil and military agencies. We did contract research on high-energy solid fuels. We built and managed the Rocky Flats facility for the Atomic Energy Commission.

Now, with Dr. A.P. Beutel, a Dow director and vice president, as director, the Government Affairs Department is enlarging these roles. Our capabilities make it logical to seek major contracts in the nation's defense and aerospace programs, and in such fields of research as desalination of water, air and water pollution, oceanography, space sciences, solid and liquid dissemination, nuclear sciences and others.

The Consumer Products Department signals growth, in number and in sales volume, of Dow-produced items for the general consumer. This began in 1952 with SARAN WRAP* film. HANDI-WRAP® food wrap was added in 1960. During 1964 Dow will market nationally a new and improved type of SARAN WRAP film, HANDI-WRAP food wrap in rolls and the new HANDI-WRAP Sandwich Bags, Dow Oven Cleaner, and BEN-MONT® gift wraps and accessory products. SARAN WRAP Squares and HANDI-WRAP Refrigerator Bags will also be marketed in some regions.

Market study, product development and market testing continue on still other consumer items. Having built an effective knowledge in depth for this most competitive field, Dow is expanding its activity on that knowledge.

In the Packaging Department all of Dow's activities associated with packaging are being grouped together. Implicit is the potential seen for the broad field of packaging, where the depth of Dow know-how—in plastic coatings, films, sheets, foams, and their converting and combinations with foils and papers, as well as their extrusion, molding, forming and printing—finds constantly widening application. This department will act to extend Dow's role as a supplier of both packaging materials and of finished products.

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Supporting Dow's ability to compete in distant markets is an extensive, effective distribution system.

by imported materials increased for our chlorinated solvents and certain inorganic chemicals.

Sales were particularly strong for alkylene oxides, glycols and glycerine, bromine and bromide products, and phenolic derivatives and their related products. For magnesium hydroxide, growing market opportunities in the pulp and paper field are leading to production expansion.

Our approach to profitable growth by development of new products and new applications to fill special needs in specific markets reflects in the 1963 record. The metal-working industry's acceptance of MAPP[®] gas as a more effective, safer and easily handled fuel for cutting and flame hardening has led to plans for national marketing this year. In the field of water and waste treatment, PURIFLOC[®] 601 flocculant conditions waste sludges more effectively, less expensively; the product has achieved robust sales in its first year in the market.

Dow announcements on ethylenimine and diphenyl oxide derivatives are discussed on page 10 of this report. Other new products introduced during 1963 included an industrial preservative, a new solvent, a strength additive for paper, and two new ingredients for paints.

Developmental work on a line of metallized explosives for the mining industry has advanced to the planning of a commercial plant to manufacture the line. Another promising development, a new process for manufacture of phosphoric acid, is moving into the pilot plant stage.

Dow produced and sold plastics in record volumes in 1963. Profits held firm; volume sales and improved

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Products Moved Fast and To Order In Distribution Phase of Marketing

This report makes frequent mention of marketing, of marketing organization, marketing plans, marketing efforts. To grasp the extent and complexity of this corporate activity, and its importance to profitability, a few details on one aspect may be helpful.

Marketing, by definition, is "an aggregate of functions involved in transferring title and in moving goods from producer to consumer including among others buying, selling, storing, transporting, standardizing, financing, risk bearing, and supplying market information." Dow does all of these things and has developed capabilities and knowledge in depth for marketing similar to its strengths in other areas.

Take transporting and storing of goods as an example.

A good product acquires its full value only when it's placed where a customer can use it. To move goods to customers in 1963, Dow regularly utilized three sea-going ships, twenty barges and 3,500 railroad tank cars. In every average day 240 railroad cars—tank, box, hopper, flat—left Dow shipping locations. And every hour, sixty-five trucks also left Dow shipping points.

Some goods, packaged at Dow producing points, must be moved to temporary storage close to customers, to await their orders. Over 800,000 square feet of warehouse space, in sixty-five market areas, met this need for Dow last year. General chemicals and bioproducts, plastics and metals, as well as consumer products, were involved in this phase of warehousing.

To serve other customers Dow moves materials in bulk from plants to terminals, and then transships in bulk or packages the goods in smaller containers. Over the past year this part of marketing involved twenty-five terminals with storage capacity for over 22.5 million gallons of seventy-five different bulk chemicals. From bulk storage at these terminals, Dow packaged for delivery to customers more than 250,000 55-gallon drums of material plus more than six million smaller containers during 1963.

This distribution network, more than a decade in development, keeps pace with Dow's increasing volume and variety of output and business activity. Effectiveness also keeps pace by the working out of new techniques and adoption of such innovations as electronic data processing for order, inventory, shipment and other information. The 1963 result: record volumes of goods were handled more rapidly, at lower costs and by fewer people.

For customers, the Dow distribution network means convenient and economical access to Dow's productive capacity. For Dow, the distribution network serves to take the competitive advantages of our other capabilities to distant areas—and profitably.

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How utility rights-of-way are cleared of brush by TORDON herbicide spraying is shown in these before and after photos.

plant operations offset price declines for several major products such as polystyrene and polyethylene.

Notable gains were made in our coatings business, involving monomers, latexes and resins for use by the paper, paint, textile, packaging and reinforced plastics industries. With many promising new or improved products at hand, continued growth is indicated here. An example is our new Latex 358 for maintenance paint, which has proved an outstanding performer.

Growth in the construction materials business has been led by our line of foamed plastics. Poultry raisers find STYROFOAM® expanded polystyrene an effective insulation and sheathing material for poultry houses. In general construction, the use of STYROFOAM insulation boards in roofing showed excellent progress.

Among the many materials we produce for the packaging business, ETHAFOAM® expanded polyethylene, a flexible foam, gained strongly in usage. Late in the year, a Packaging Department was established to direct Dow's increasing activity in the field of packaging.

During 1963, U.S. producers turned out more than nine billion pounds of plastics—and more than one billion pounds came from Dow. With more than a dozen of our plastics materials produced at capacity last year, we plan expansions in several lines for 1964.

Bioproducts sales in 1963 showed increases in most major categories.

Herbicides, feed industry products, soil fumigants and fertilizers led the over-all growth in agricultural and industrial bioproducts. For several of our older prod-

ucts, market demands required capacity production. We are building on this established marketing base with a number of new materials.

TORDON® herbicide, especially effective in controlling brush and perennial weeds, found ready acceptance for maintaining right-of-way when introduced in the utility markets in 1963. It is now being marketed to industrial users for plant site maintenance. A new plant to produce TORDON was completed ahead of schedule.

N-SERVE® nitrogen stabilizer is expected to go into limited marketing this year. N-SERVE prolongs the action of ammonium fertilizer, reducing the need for repeat applications during the growing season.

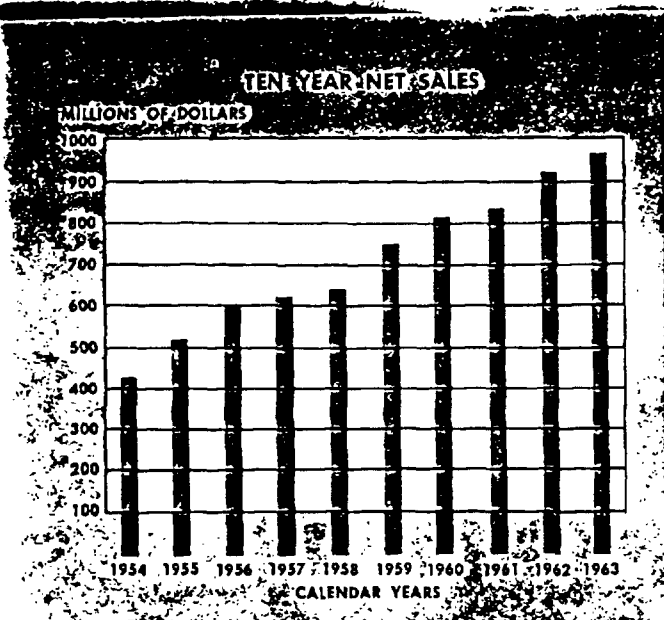
Other new products include SIRLENE® feed additive, a feed and water supplement for farm stock and pets, GELGARD® F fire control polymer, a thickening agent for water in fire-fighting use; and—in development—a medicated mineral for cattle to control hornflies and grubs.

The Pitman-Moore Division increased its sales of human pharmaceuticals in 1963 but, due to production difficulties and market competition, experienced a decrease in sales of biologicals. The live virus measles vaccine which we had expected to reach market in 1963 has been delayed by developmental problems, however, continuing tests confirm the Dow vaccine's excellent properties. We are confident that this product will be a valuable addition to our human health line.

Increased profitability and improvement in our competitive position marked 1963 activity in magnesium. Process improvements boosted magnesium production

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capacity without expansion of our facilities, and also reduced production costs. Additional capacity gains and cost reductions are expected in 1964 and 1965.

Magnesium shipments gained only slightly last year over the 1962 level, but showed the best profit of any peacetime year. Sales to the aluminum industry, for use in alloying, gained substantially. Uses in die casting also increased, particularly in lightweight applications such as power lawn mowers and portable tools.

With continuing process improvement plus ample reserve capacity, Dow has a strong capability for supplying world as well as domestic market needs in magnesium. We are working to expand world consumption of this metal by such means as a program of international licensing of Dow's know-how and technology in magnesium die-casting.

Our metals technology opens opportunities for Dow in the nuclear fuels field, and plans have been announced for a nuclear fuels laboratory. In Europe, joining with the German company Nukem, we have formed a new firm called Alkem to process and fabricate nuclear fuel elements.

Our precolored acrylic fiber, ZEFKROME®, moved into textile markets on a commercial scale in 1963 with good sales results. At year's end both ZEFKROME and our first textile material, ZEFRA® acrylic fiber, were being produced at capacity.

Development of a basic-dyeable acrylic fiber progressed to the building of a semicommercial production plant in 1963. Operation of this unit began in December.

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Research Successes Unlock Potential For Volume Uses of Ethylenimine, DPO

Two developments publicized by Dow during 1963 shed light on the type of challenges met in today's search for "new" chemistry.

The developments concern ethylenimine and diphenyl oxide derivatives. Neither is new to science:

—Ethylenimine, a highly-reactive material, has been known for seventy-five years. Researchers marked it as interesting and promising, but industry used it most sparingly. Ethylenimine simply cost too much for commercial use in volume.

—Diphenyl oxide derivatives carried a different handicap. Readily available because diphenyl oxide is a by-product of Dow's phenol process, the derivatives just weren't reactive enough. They couldn't be worked into advantageous combinations with other materials.

Why devote time to such problem products?

Dow worked on ethylenimine for its extremely broad potential. Research literature shows some 1,600 references to ethylenimine and its derivatives, and their proven or potential uses in medicine, in petroleum refining, in paper making, in textile treatment, in dozens of other ways. Besides, the chemical structure of ethylenimine is such that Dow researchers believed they could find a way to make it by a simpler process and at lower cost.

As for diphenyl oxide derivatives, several of them have desirable properties—resistance to other chemicals, stability at high temperatures, stability on long exposure to air. There are numbers of industrial and commercial products for which such properties are valuable advantages. Dow set out to produce diphenyl oxide derivatives reactive enough to transfer their good characteristics to other materials with which they might be combined.

And, in 1963, Dow announced the results.

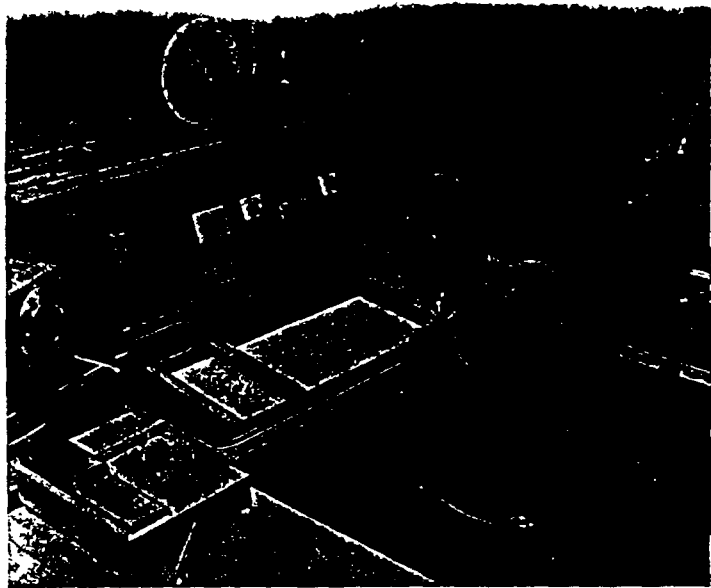
Ethylenimine, at lower-than-ever prices, is currently available from Dow. It's produced in a semicommercial plant in the Texas Division; a full-scale plant should be in operation by early 1965. Now industry is invited to test the potential of low-cost ethylenimine.

Diphenyl oxide derivatives that do react, that will—among other things—improve insulating resins and plastics, are also available from Dow. One such derivative already has volume application. During the year more than 800 firms requested developmental samples to test in their particular processes and products.

Whether these materials will achieve volume uses and good profitability for Dow, remains uncertain. What is certain is that, until Dow evolved new chemistry to solve old problems, the market opportunity and potential represented by ethylenimine and diphenyl oxide derivatives were beyond reach. Knowledge and capability in depth have changed that, to Dow's credit and industry's advantage.



Recent additions to Dow's line of consumer goods are HANDI-WRAP Sandwich Bags and Dow Oven Cleaner.



Typical of the advanced equipment utilized in Dow's research is this nuclear magnetic resonance spectrometer.

General Operations

An over-all view of Dow's operations in 1963 offers two especially noteworthy points:

—To meet increased market needs, our plants ran at generally higher production levels than in the past two or three years. Capacity output was reached and maintained for an encouraging number of products.

—Throughout our operations, gains in effectiveness continued. These gains result from the effort begun some years ago to strengthen Dow's competitive position by meeting the challenge of rising costs. At all locations Dow employees have entered into this effort with imagination and persistence that have led to widespread improvement in all phases of our activities. Such improvements are most easily seen in production units where process changes yield greater output, higher quality, lower costs, increased safety. Just as significant are administrative improvements—organizational changes that end duplication of effort, new procedures that automate office routine to leave people free for more productive assignments.

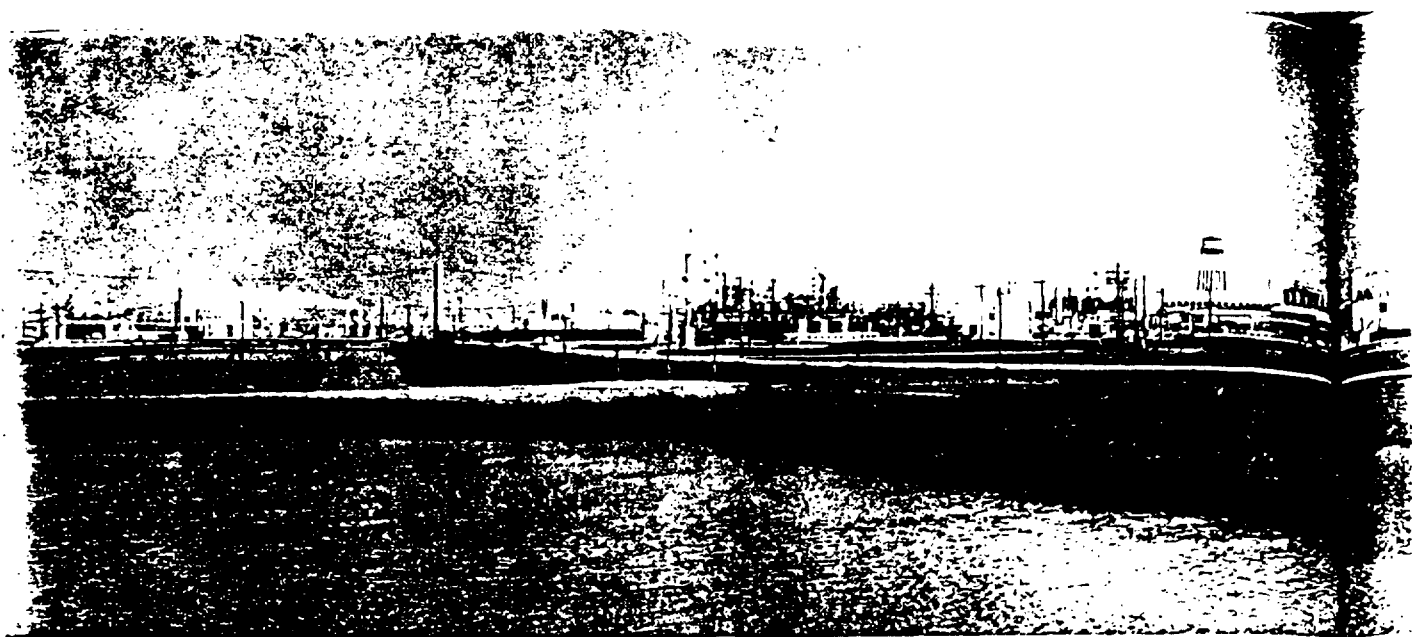
In total, operational improvement achieved within Dow last year significantly improved our sales and earnings. Sales volume support came from the many plants that produced well above rated capacity by better methods rather than by sizable expansion. Profit support came from the numerous cost reductions as well as improved capability for providing superior service in all markets.

Capital investment in new or expanded plants and facilities was \$82 million during 1963. For comparison, similar investment was \$69 million in calendar 1962 and \$115 million in calendar 1961. Our plans for the

New processes in new plants like this have replaced the historic blowing-out units in Dow's bromine production.



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Rising from the coastal prairie along the Gulf of Mexico, these plants and structures are part of the makes D

current year involve investment of about \$100 million for expanding facilities.

Here are some highlights on the year's developments in Dow's major divisions and plants

A realignment involving the Midland Division and our plants at Bay City, Ludington, Allyn's Point, Hanging Rock and Riverside moved to an advanced stage in 1963. Production operations of these plants are extensively tied to Midland Division operations, opening the way for greater efficiency through closer coordination and the centralized handling of some administrative functions. Beginning this year, these units will be operating in the pattern of a consolidated Midland Division.

During 1963 the Midland Division brought on stream a new plant to produce ethyl bromide. Dow has long made this material, an intermediate used in organic synthesis. But the new plant is unique; it's the first in the U. S. to utilize energy from radioactivity as a process medium, to initiate and sustain a chemical change. Dow success in research, design, building and operation of the plant earned an award as one of 1963's top achievements in chemical engineering. The Atomic Energy Commission ranks the process as a major breakthrough in peaceful application of nuclear technology.

Early in 1964, one of Dow's historic landmarks was removed from the Midland scene with the dismantling of the last blowing-out tower ever used in bromine production. The blowing-out process for obtaining bromine from brines was Herbert H. Dow's invention and provided the base upon which The Dow Chemical Company came into being. A new process, yielding bromine of exceptionally high purity, has replaced the older method.

With growing paper industry use of magnesium hydroxide, the Ludington plant sharply increased output of this product in 1963. A capacity expansion for magnesium hydroxide is presently underway at Ludington.

At Allyn's Point, STYRON® polystyrene resin production facilities are being adapted to produce high-impact as well as standard formulations of this plastic. The range of latexes made at this location is also being broadened. Both moves improve Dow's ability to supply customers these basic materials from alternate sources.

Riverside increased output of STYROFOAM products comfortably above 1962 levels. Production of DORVON polystyrene beadboard began during the year, with sales reaching substantial levels at year's end.

New ETHAFOAM uses in the automotive and toy markets led to increased output at the Hanging Rock plant. We expect further sizable market growth for ETHAFOAM.

The Western Division completed a plant for TORDON herbicide at Pittsburg early in 1964, and is adding new facilities for bioproducts research at the Walnut Creek laboratories. The division experienced its first strike last year, at the Torrance plastics plant. Operations were handled by supervisory employees and output of all products, including polypropylene at above-capacity rates, continued through the 46-day strike period. At Kalama, 1963 results proved out the technical advances of the new Dow process by which we produce phenol in this plant.

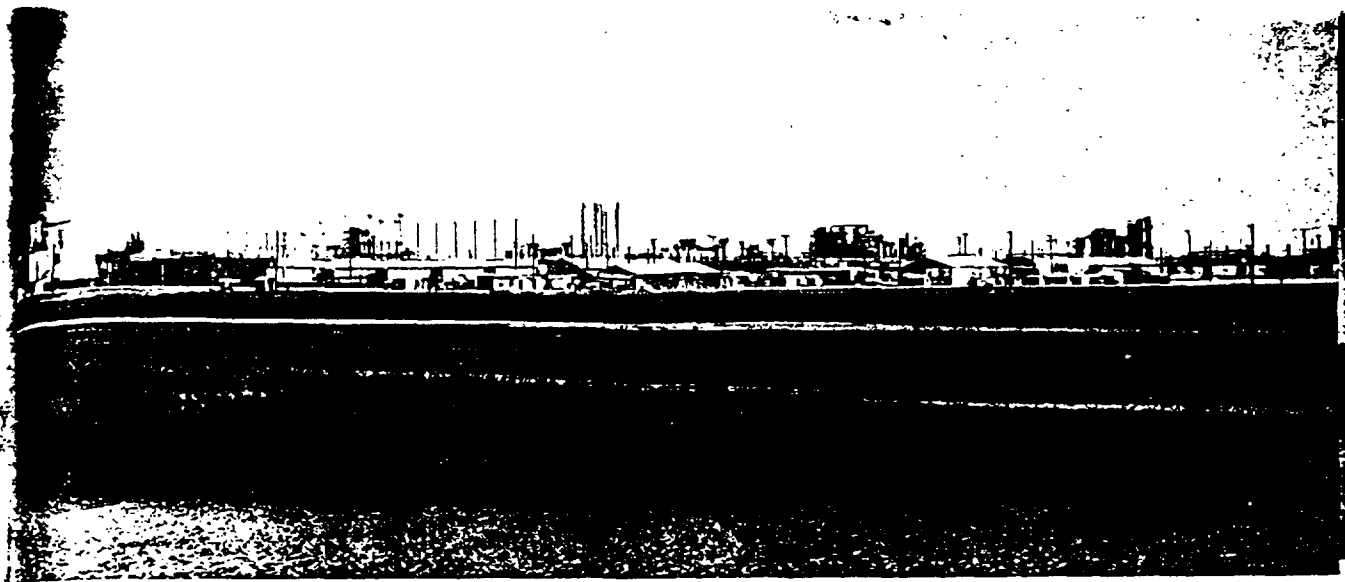
The Texas Division, in the closing months of 1963, produced chemicals at the highly satisfactory rate of ninety per cent of capacity, and had several major

Reviewed Dow's 1963

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... makes Dow's Texas Division one of the world's major production centers for chemicals and plastics.

units at full capacity. During the year, capacity increases were made in eighteen plants of the division; over-all output was more than fifty per cent above 1962 poundage produced.

A significant factor in Texas capacity and production increases is the major role assigned the division in Dow's overseas marketing programs. Export sales absorbed one fifth of our Texas production during 1963.

Technological improvement in the magnesium process is continuing to provide higher output so that growing sales are met without putting additional facilities into service. A semicommercial unit is supplying our ethylenimine needs at present; in view of the potential for this Dow product, construction of a full-sized plant has been authorized for the Texas Division.

The Louisiana Division, by a number of process improvements, substantially boosted capacity of several plants during the year. The division also expanded its research facilities and completed construction of a chlor-alkali unit. The latter, producing chlorine and caustic soda by the mercury cell process, made its first product shipments in November.

Explosion and fire severely damaged the Louisiana light hydrocarbon plant in early April of 1963. One employee was injured, not critically, in the fire. The property loss was covered by insurance. During rebuilding of the unit, temporary arrangements supplied feedstocks to keep other plants in operation.

Completely rebuilt, with design and equipment changes for maximum safety, the light hydrocarbon plant resumed operation before the year's end. And

early this year a sizable addition was completed and put into service. Employee performance in the speedy rebuilding of this major plant can be rated as outstanding.

Dow's manufacturing operations in the packaging business were designated as the Packaging Division during 1963. The Packaging Division operates the facilities previously known as the Dobeckmun Division—for converting plastic films, foil and paper, and for producing plastic films and formed plastic containers—plus three plants for making blow-molded plastic containers. The latter are at Baltimore, at Chicago and at Tampa, Florida. They were operated for Dow under contract arrangement before Dow assumed direct operation in March, 1963.

Expansion of the Fresno, California, plant was completed in September. This permitted relocation there, for improved efficiency, of work previously handled at Berkeley; the Berkeley plant has been closed.

The Rocky Flats Division moved into exploration of new opportunities during 1963. The division, which operates the Atomic Energy Commission plant near Denver, began research and manufacturing not directly related to the nuclear weapons field. While small in scope, this program points to broader utilization of Dow skills in working with exotic and difficult metals under conditions of extremely close tolerances.

Rocky Flats employees extended their job safety record to more than twenty-four million manhours before a minor injury closed out their six-year achievement. The record stands as one of the best in American industry.

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Zero-Zero Goal Set in Campaign For Work Safety, Loss Prevention

Dow employees have been called on to work for perfection in on-the-job safety throughout Dow.

The Board of Directors last June instituted a company-wide program aimed at substantial improvement in the safety and loss prevention performance of the company. And the Board noted the need for active participation in the program by employees at all levels and locations.

Why this emphasis on safety, on loss prevention?

The American chemical industry has a better safety record than the nation's industry as a whole. In each million manhours of work time, the number of chemical workers incurring disabling injury is well below the national average for all industrial workers.

Dow's record is close to the chemical industry average, lower in most years, somewhat higher in others. Some Dow plants hold remarkably superior safety records of long duration; others don't do as well. Still, on average, a Dow employee is far more likely to be injured off the job than at work.

But this, in the conviction of Dow's management, falls short of being good enough. "Good enough" means:

—Each employee completing each workday, and every workday, without injury or lucky narrow escape from injury by any job-connected accident.

—Operation of all Dow facilities without property loss or damage caused by fire or accidental casualty.

Thus the long-range objective of the new program is for Dow to operate with a zero rate of job injuries to employees and a zero record of property loss. Immediate goal is a consistent year-to-year improvement in these records. There's recognition here that, from the standpoint of accident prevention, personal injury and damage to property are synonymous; any chain of circumstances leading to one is equally likely to cause the other.

The program aimed at these objectives is planned and directed by a new Safety and Loss Prevention Department. N. D. Griswold, a member of the Board of Directors and one of Dow's top engineers, is the department director. Attention goes to all aspects of Dow operations.

Among steps taken and practices established:

Safety belts must be used in all Dow vehicles. Guiding principles for fire protection and fire prevention apply to design of facilities and their operating procedures. All work groups regularly review performance in safety. Training programs emphasize the safety responsibility of managers and supervisors. Detailed plant inspections search out potential hazards.

Early results are encouraging. Dow's 1963 frequency of disabling injuries was twenty-one per cent below 1962's. This is a good first step, but only the first, toward the long-range objective: perfection in safety.

Divisional Operations

Seeking new gas and oil reserves for Dow, Brazos Oil and Gas continued its exploration programs in Texas, Louisiana, California and Michigan last year. Brazos drilled thirty-nine wells of which ten produced gas, thirteen produced oil and sixteen were dry. Three of the gas wells—one each in Texas, Louisiana and California—were discovery wells; an oil well near Rose City, Michigan, was a new producer and more drilling is in process in this area.

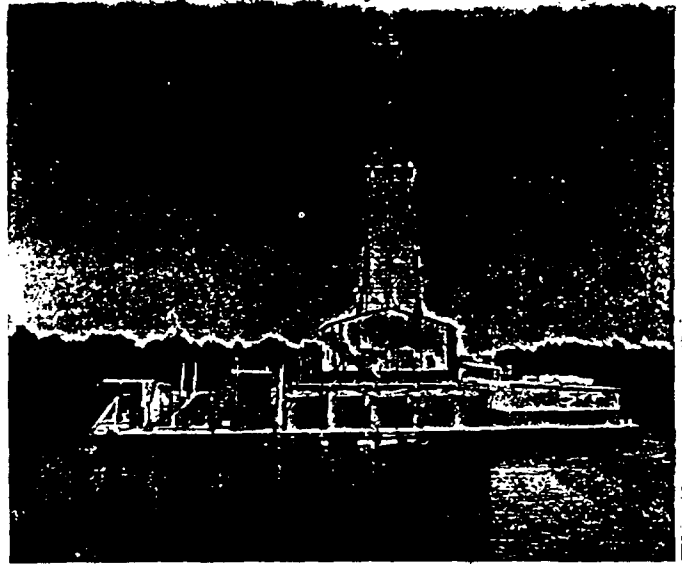
The Brentwood gas field in Northern California, in whose 1962 discovery Brazos was a partner, now supplies fuel gas to the Western Division's plants at Pittsburgh. Brazos participated in a joint project for installing a gathering system at the field plus nine miles of pipeline to transport gas to the Dow plants and other users.

The Dowell Division, providing cementing and stimulation services to the petroleum industry, had a modest sales gain in 1963. Well-drilling by the oil industry sets the pace in Dowell's business field; when drilling declined last year, competition increased and prices deteriorated in the service business. As stimulation sales declined, Dowell—having built a strong position in cementing services—increased cementing sales more than one third to accomplish its net sales gain.

Facilities expansions during the year included the equipping of twenty more stations for cementing work, and the installation of eight new stations, a field laboratory and a marine base. The latter, at Venice, Louisiana, is the second marine base Dowell has built to provide



Growing demand for chemical cleaning of industrial equipment provides an expanded market for D.I.S.



Where canals replace roads in south Louisiana, this Dowell cementing rig floats to the well to be worked

complete service to oil industry operations along the inland waterways of southern Louisiana.

While industry forecasts predict 1964 well-drilling at about the same rate as 1963, the service business pricing structure seems to be on a sounder basis and profit improvement is expected. Dowell's plans call for emphasis to expand cementing service sales, plus sales of stimulation services in retreatment of old wells to maintain their production.

Sales and profits at about the same levels as 1962 were experienced by Dow Industrial Service last year. Most rapidly growing among D.I.S. activities is its work in industrial cleaning. Outlook for this market is bright as D.I.S. introduces new materials, new services and new techniques for meeting customer needs.

An example is the "clean boiler program" offered to industry to maintain steam-generating equipment. The program, based on extensive Dow research and long field trials, utilizes VERTAN® 600 compounded chelants, and has led to encouraging sales of this material.

The general office and the laboratory of D.I.S. were shifted to Midland from Cleveland and Tulsa, respectively. In addition, sales and technical service staffs were realigned for a strengthened approach to major potential markets.

The division's volume of missile cleaning business declined during the year. However, the market remains sizable and D.I.S. capabilities provide an excellent base for expecting new growth in this activity. D.I.S. is in

close liaison with the Government Affairs Department on plans to optimize Dow's position in this market.

THE DOW METAL PRODUCTS COMPANY

An 82-day strike at its major fabrication plant, at Madison, hampered the 1963 performance of The Dow Metal Products Company Division. Despite the strike, plus strong competition and pricing pressures, DMPC brought production rates of aluminum and magnesium finished products to new highs and had sales above its forecasts.

To meet requirements of military contracts and critical needs of customers, supervisory and other salaried employees handled production work at Madison through most of the strike period. This enabled us to avoid crippling losses and maintained DMPC's position as a dependable source of supply.

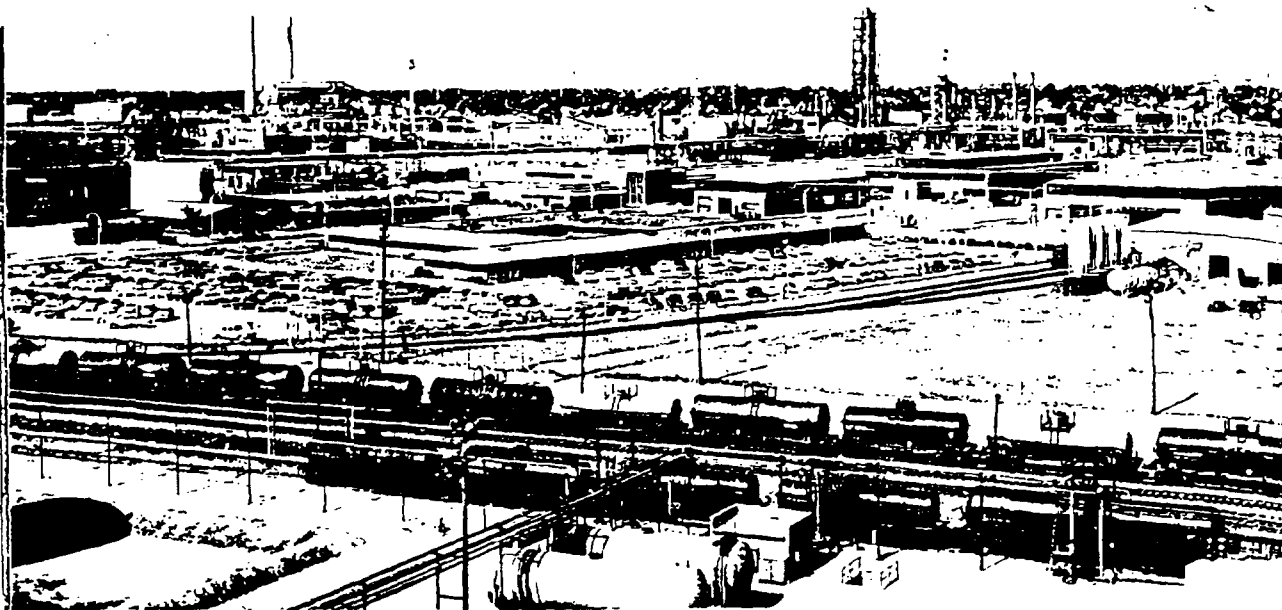
Aluminum products again accounted for the major share of the year's sales increases. Output of heavy extrusions was at capacity; new capabilities were developed for production of high-strength weldable alloy sheet and plate.

Magnesium photoengraving sheet sales increased sharply with introduction of new DOWETCH® products which give the photoengraving industry a fast, one-bite process for engraving magnesium. Other promising markets for magnesium sheet are in memory discs for electronic data processing, and in paint-shipping containers.

Our metals research has been broadened in support of expanding interests in aluminum. Other metals, including beryllium-aluminum alloys, are also under study.

* Registered Dow Chemicals

ST0004332



Principal manufacturing location of Dow Chemical of Canada, Limited, is the growing complex at Sarnia, Ontario.

Subsidiaries

Improved manpower utilization brought significant productivity gains for CLIFFS DOW CHEMICAL COMPANY in 1963. Output of hardwood charcoal briquets ran at top level throughout the year and equipment changes have been made to meet higher market demands expected in 1964.

DOW CHEMICAL OF CANADA, LIMITED, increased domestic sales twelve per cent above 1962 levels during 1963. The company continued its growth program to meet expanding needs of the Canadian economy.

Canada's growing pulp and paper industry created increasing markets for caustic soda and chlorine. Demand for Canada's oil provided a firm need for Dowell's services in western Canada. Building programs furnished outlets for Dow construction materials such as STYROFOAM products, and growing acceptance of plastic packages and containers improved sales of other Dow plastics.

New plants brought into service during the year included units for power, propylene oxide, propylene glycols and VORANOL⁵ polyols at Sarnia; a 2,4-D esters plant at Fort Saskatchewan; and facilities for rigid and flexible plastics containers at Toronto. Benzoic acid capacity at Ladner was expanded. High demand for VORANOL products, used in making polyurethane foams, is reflected in an expansion of the Sarnia unit.

By acquiring Richmond Plastics Ltd., Dow Canada has an added outlet for its plastics resins and a new source of technology valuable in serving the textile industry. This operation, located in Richmond, Quebec, produces monofilaments of polyethylene, polypropylene and SARAN*.

* Registered Dow Trademark
* Dow Trademark Abroad

Associated Companies

DOW CORNING CORPORATION, owned jointly with Corning Glass Works, continued the growth and progress that make this firm the world's leading producer of organosilicon chemicals and silicone products. During the year, a reorganization begun in 1962 was completed. The changes orient marketing efforts for more efficient service to major markets, concentrate development effort on products and processes showing long-range growth potential, and place responsibility for output and short-term product improvement on the plants of Dow Corning's five operating divisions.

Silicone fluids, resins and rubbers show remarkable resistance to such environmental factors as heat, cold and moisture. These properties put silicones in exotic roles, as in the heat shield of the Gemini spacecraft. But the same properties also make silicones standard engineering materials in a host of industrial applications. By research, Dow Corning continues to bring forward new materials whose successful performance further broadens the use for silicones—as well as re-emphasizing the firm's leading position in the field it pioneered.

New facilities brought on stream during 1963 increased capacity for SILASTIC⁷ silicone rubber at Midland, and for silicone sealants at Elizabethtown, Kentucky. Use of these and other rubbery silicone products continues to grow in aerospace, automotive and building fields.

Products marketed for the first time in 1963 included two improved additives for use in manufacturing polyurethane foam, a silicone insulating varnish, and a heat-shrinkable rubber with unusual aerospace applications. A bathtub caulk made of room-temperature vulcanizing SILASTIC silicone rubber has gone into mass-market dis-

⁷ Dow Corning Trade Name

tribution as the first of a line of household products. A new plant at Hemlock, Michigan, is the world's first designed for the exclusive manufacture of medical-grade silicones. It will produce silicone materials and devices for use in medical research and treatment.

ETHYL-DOW CHEMICAL COMPANY, whose ownership we share with the Ethyl Corporation, produces ethylene dibromide for use in gasoline anti-knock fluid. Ethyl-Dow's operations and sales through 1963 were at approximately the same levels as those experienced in the prior year.

DOW BADISCHE CHEMICAL COMPANY, jointly owned with BASF Overzee N.V., produces acrylates, butanols and caprolactam. Production levels on these materials increased during 1963 and, at year's end, an expansion of the caprolactam facilities was put into service.

DOWSMITH INC. is owned jointly by Dow and the A. O. Smith Corporation of Milwaukee. After two years of operations in temporary facilities in Milwaukee, DowSmith has built and occupied a new plant in Little Rock, Arkansas. This plant produces piping, electrical and other products made of glass-reinforced plastic materials and is located for maximum service to major markets in the petroleum and chemical industries. In March of 1964 DowSmith acquired a plant at Ionia, Michigan, for production of automobile bodies of glass fiber reinforced plastics and thus widened the field for profitable application of its expanding technology in end-product uses of reinforced plastics.

Market Results of Knowledge in Depth Still Coming, a Quarter-Century Later

In the chemical industry, competition spurs constant search for better products, processes, procedures. These are keys to marketing advantages of lead time, or quality or price. Such advantages mean profitability.

Dow, in this competition, relies on knowledge in depth. This means awareness of present needs and alertness for future needs of customers; plus know-how, technology and imagination with which to evolve answers to the needs.

Acquiring an effective dimension of knowledge in depth takes time. But once acquired in sufficient measure, knowledge in depth tends to accelerate its own growth. One level of success seems to yield by-product knowledge that speeds and eases solution of problems on the next.

The story of polystyrene furnishes a prime example.

In December, 1938, Dow registered the STYRON® trademark for polystyrene and polystyrene resin. By eight years of research, Dow had transformed polystyrene from a laboratory curiosity to a commercial reality.

True, the reality had severe limits. Dow made only 190,000 pounds of STYRON in 1938. It was of a single formulation. The few customers making up the then-infant plastics molding industry had headaches trying to work the material smoothly in their machines. And their finished goods performed dubiously.

To capitalize on its production knowledge for polystyrene, Dow needed more knowledge. Polymer chemistry knowledge, to invent plastics with properties fitting specific needs. Molding technique knowledge, to match resins to machine capabilities. Product design knowledge, to assure user satisfaction with articles made of polystyrene. Marketing knowledge, to meet customer needs in delivery, technical help and other services.

Dow succeeded. Polystyrene blossomed as a foundation material in a booming plastics industry. In this, Dow's knowledge in depth contributed extensively. Today's record indicates how extensively:

In 1963, the U. S. consumed some 1.25 billion pounds of polystyrene; Dow was by far the largest supplier. Our 1963 line had twenty-eight formulations, more than any competitor offered. And a plant put on stream in Italy last year was the eighth built overseas by Dow or Dow associates to supply foreign customers.

Has Dow exhausted the potential advantages of this particular body of knowledge in depth? Late in 1963, Dow announced plans for a polystyrene plant in Colombia—our first STYRON unit in Latin America. And early this year, Dow introduced four new STYRON formulations.

One forecast for polystyrene predicts the U. S. alone will use four billion pounds in 1980, ten billion in 2000. On the demonstrated strength of a knowledge in depth, Dow should be in that market actively—and profitably.

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Brought on stream in 1963, this polystyrene plant at Livorno, Italy, helps meet growing market needs in Europe.

International Operations

International operations, those beyond the U.S. and Canada, were characterized by strong increases in market demands for Dow chemicals, plastics and bioproducts in 1963. Sales in each major product group ran considerably above 1962 levels, with bioproducts sales growing at the fastest rate. Our international activities accounted for about fourteen per cent of Dow's total sales income, and profit yields continued to be favorable.

Much of our success in building international business results from know-how and capabilities developed in home markets. In particular, marketing experience gained in the U.S. shortens the time required to win acceptance of Dow products by overseas customers.

For some materials, foreign economic and industrial trends largely parallel U.S. conditions. Thus many of our plastics fill overseas needs identical to those they satisfy at home—as foams for construction materials, as films and sheet for packaging, as resins for molding, and as latexes for coatings. Our practice is to enter international markets with export materials and then, when local production will result in substantial sales increases at acceptable profit levels, to establish plants in or near major consumption areas.

Markets quite different from the U.S. also provide opportunities for Dow. Those world areas where paper stock is a high-cost item, for example, present openings for fabricated plastics materials. Dow is taking advantage of such opportunities with both products and technology.

In overseas selling of chemicals, more than is true for other products, ready availability for prompt shipment to customers is a critical competitive factor. For the European market area—which with the United Kingdom accounts for about half of our international business—

the production complex under construction at Terneuzen in The Netherlands will strengthen Dow's position in this respect. Bulk terminals established in Germany, in Africa and in Australia also have improved product availability—with such 1963 results as a doubling of glycol sales.

Specialty chemicals sales reflect knowledge in depth of foreign industries, their business techniques and their prime needs. Notable among our several specialties finding growing markets are the VORANOL polyols used in producing urethane foams, international sales of these products now exceed those in our U.S. markets.

Bioproducts sales overseas are increasing at a faster rate than either plastics or chemicals sales. Two major factors can be seen. First, the plant, animal and human health products developed by Dow for U.S. uses are proving effective in overseas climates and terrains. Second, we have established an overseas staff of bioproducts sales, development and service specialists who are expanding our business and also provide a trained nucleus for expansion into other market areas.

During 1963, our international operations handled the sale of more than 300 different Dow products, on every continent and in more than a hundred different countries. We market our goods directly or through local associates as conditions in each country make desirable, working always for a close Dow-customer relationship and supplementing that with the maximum feasible technical assistance. Results achieved by this approach, plus indications of continuing growth in overseas needs for Dow-produced goods, support a favorable outlook for further profitable expansion of Dow's total business in international markets.

R
ST 100-14335



Dr. Melvin Calvin

Research

Within the Dow research organization, increased emphasis was given during 1963 to tying research resources more closely to other company functions. These moves are resulting in a more complete utilization of existing knowledge, services and facilities. They also contribute to our ability to take advantage of new business opportunity.

The research program continued to produce its desired harvest of new products, twenty-three of which attained a sales volume of \$50,000 or more during the year. During 1963, products which entered the market during the past five years accounted for about ten per cent of Dow's sales.

Among new products showing especially good potential for the future are: ZECTRAN[®] insecticide, sold as "Snail, Slug 'n Bug Killer"; Dow MS-80 blasting agent, a shaped explosive; TYRILFOAM[®] expanded resin, an addition to the Dow line of plastic foams; polyethylenimine, a reactive intermediate chemical; and HANDI-WRAP Sandwich Bags.

The importance of basic research in Dow's over-all program was more formally recognized by reorganization of the independent laboratories under a director reporting to the Director of Research. This move emphasizes the role of those research groups whose work is likely to apply to many divisions and departments of Dow.

Continuing improvements were made in research facilities and equipment to keep pace with changing needs. No major facilities were added during the year but planning is in progress for a new Physical Research Laboratory at Midland and for relocation of the Eastern Research Laboratory on a new site at Wayland, Massachusetts.

® Registered Dow Trademark

Noted Researcher, Nobel Laureate, Elected to Dow Board of Directors

Dr. Melvin Calvin, professor of chemistry at the University of California and 1961 Nobel Laureate in chemistry, was elected a director of The Dow Chemical Company by action of the Board of Directors on January 8, 1964. His election increases board membership to fifteen.

Dr. Calvin brings to his new post a world-wide reputation for contributions to the understanding of photosynthesis, for studies in physical organic chemistry and organic chelate compounds and, more recently, for his work on the problem of the origin of life. He received the Nobel Prize for his contribution to the problem of how carbon dioxide is incorporated into the life cycle of the plant. Among the scientific committees on which he serves is the Committee on Science and Public Policy of the National Academy of Sciences, to which he was appointed in 1962.

In a prior relationship with Dow, Dr. Calvin has been a Dow research consultant since 1946. His work for Dow has included contributions to the synthesis of biologically active compounds, in the study of mechanisms of polymerization and in other phases of basic Dow research.

Dr. Calvin was born in St. Paul, Minnesota, in 1911 and was graduated from Central High School in Detroit in 1927. He received a B.S. degree from the Michigan Technological University in 1931, and a Ph.D. in chemistry from the University of Minnesota in 1935. His postdoctoral studies were at the University of Manchester, in England, from 1935 to 1937.

His career at the University of California began in 1937, as an instructor in chemistry. He became an assistant professor in 1945 and a full professor in 1947. Since 1946, Dr. Calvin has been director of the Bio-organic Division of the Lawrence Radiation Laboratory at the University of California, his work in this capacity leading to the award of the Nobel Prize. His work in photosynthesis has been in progress more than fifteen years; it has evolved knowledge in and the application of other scientific disciplines—chemistry, physics and mathematics—as well as biology.

In addition to the Nobel Prize, Dr. Calvin has received numerous honors, awards and honorary degrees. He has served on both national and international scientific committees, and was a delegate to the International Conference for Peaceful Uses of Atomic Energy in Geneva in 1956.

Herbert D. Doan, Dow president, has commented that Dr. Calvin's election as a director brings to the Dow board one of the most inquiring minds in the scientific community. "Dow has long been a research-oriented company," Mr. Doan said. "The addition of Dr. Calvin's fresh insight and advanced scientific outlook should help us to continue to build upon this tradition."

ST0004336



Brought on stream in 1963, this polystyrene plant at Livorno, Italy, helps meet growing market needs in Europe.

International Operations

International operations, those beyond the U.S. and Canada, were characterized by strong increases in market demands for Dow chemicals, plastics and bioproducts in 1963. Sales in each major product group ran considerably above 1962 levels, with bioproducts sales growing at the fastest rate. Our international activities accounted for about fourteen per cent of Dow's total sales income, and profit yields continued to be favorable.

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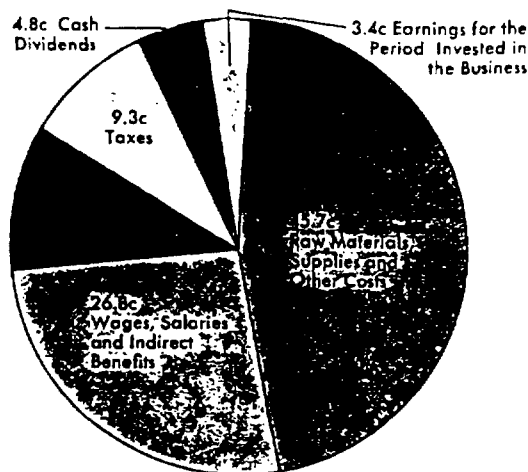
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INCOME DOLLAR DISTRIBUTION

For the Year Ended December 31, 1963



SHARES AND SHAREHOLDERS

	SHARES OUTSTANDING	NUMBER OF STOCKHOLDERS
DECEMBER 31, 1963	29,523,118	98,700
DECEMBER 31, 1962	29,060,983	100,300
INCREASE (DECREASE)	462,135	(1,600)

Increase in shares resulted from:

2% stock dividend	582,917
Sales to employees	14,382
Conversion of 3% debentures	4,256
TOTAL	601,555
Less — Treasury stock increase	139,420
Net increase	462,135

Industrial Relations

A significant phase of Industrial Relations activity during 1963 has been an expansion of internal transfer opportunities for technical and professional employees. This has dual aims: for the employee, there is challenge and encouragement for personal growth and development in a new assignment; for Dow, the opportunity to bring to a challenging assignment an individual of demonstrated ability and potential for still more important future roles. This program is moving well and will continue in coming years.

Since 1962, Dow has participated in the Plan for Progress headed by the national President's Committee on Equal Employment Opportunity. Our entry in this program formalizes the Dow policy, at all locations, of employing and promoting individuals solely on the basis of merit and ability. Significant progress has been made in implementing this policy with action throughout Dow.

Dow employed at the close of 1963 approximately 31,500 persons in the company and its subsidiaries. Employment in our domestic and foreign associated companies increases the total to approximately 39,900 persons.

As part of the year's employee relations activity, fourteen new contracts were negotiated with labor organizations. Noteworthy among these is the agreement with ten unions operating within the Texas Division and Ethyl-Dow plants; it is a five-year contract whose tenure has already reflected favorably in the area's economy. Elsewhere, three work stoppages occurred during negotiations. We had no strikes involving existing contracts.

There were 325 employees who retired during the year. Of this total, nearly 200 were individuals electing

to take advantage of an expanded early retirement program which provides modified benefits to employees retiring before age sixty-five and after ten or more years service. Membership in the Dow Pension and Profit-Sharing Plans increased to 16,412. Assets of the Plans now exceed \$135 million.

The program for increased emphasis on safety and loss prevention is discussed elsewhere in this report. It is notable, however, that ten divisions, plants or major employee groups worked the full year with no disabling injuries. Of these, the Allyn's Point plant extended its record of accident-free operation to nearly fourteen years. The Rocky Flats Division established Dow and AEC safety records by achieving more than twenty-four million manhours of work without a disabling injury before a relatively minor mishap ended the record last July. Winners of the Dow President's Safety Award during 1963 were the Eastern Research Laboratory, the Rocky Flats Division and the James River Division.

Our program of aid to education continued through 1963. In this program, Dow made grants of funds and materials totaling more than one million dollars; this included scholarships, fellowships and grants that assist more than 200 students at sixty-seven colleges and universities.

The Matching Grant Program, in which Dow matches employee gifts to colleges and universities, again attracted a high level of employee participation. There were 1,323 gifts totaling \$46,672.71 matched by Dow. And through the Tuition Refund Plan, Dow refunded \$26,469.94 of tuition costs incurred by 603 employees in job-related evening and correspondence studies.

FINANCIAL STATEMENTS

Report of Independent Public Accountants

HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS

RESIDENT PARTNERS

E. ROBERT BILLINGS, C. P. A.
HAROLD W. SCOTT, C. P. A.
CHAUNCEY A. NORTON, C. P. A.
ROLAND E. KING, C. P. A.

FIRST NATIONAL BUILDING

DETROIT 26

THE DOW CHEMICAL COMPANY:

We have examined the consolidated balance sheet of The Dow Chemical Company and its subsidiary companies as of December 31, 1963 and the related statements of consolidated earnings and surplus 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 consolidated balance sheet and statements of consolidated earnings and surplus present fairly the financial position of the companies at December 31, 1963 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 period.

March 2, 1964

HASKINS & SELLS

ST0004339

Notes to Financial Statements

A Principles of Consolidation

The consolidated financial statements for the year ended December 31, 1963 include the accounts of the Company and all of its domestic and foreign subsidiaries except for those located in Mexico.

The accounts of foreign subsidiaries have been converted generally at official or other appropriate exchange rates.

B Subsidiary Companies Not Consolidated and Associated Companies

At December 31, 1963 the Company's investment at cost, less reserve, exceeded its equity in the combined net assets of subsidiary companies not consolidated, as shown by their unaudited financial statements, by approximately \$300,000. The companies' operations for the year ended December 31, 1963 resulted in a small net loss.

The Company's equity in the combined net assets of associated companies (50% owned), as shown by their unaudited financial statements, exceeded the Company's investment at cost by approximately \$19,000,000 at December 31, 1963. The Company's equity in the combined net income of these companies was approximately \$7,500,000 for the year ended December 31, 1963.

In May 1963, the Company made an offering of Common Stock to its employees and employees of its subsidiary and associated companies at a price of \$55.50 a share, payable on an instalment basis generally through payroll deductions. At December 31, 1963 there were unfilled subscriptions under the offer for 134,681 shares. The subscriptions, which may be canceled at any time at the option of the employee but must be settled by May 1964, have not been recorded in the Company's books and are not reflected in these financial statements. However, partial payments on these subscriptions, aggregating \$4,217,483, are included in current liabilities in the consolidated balance sheet at December 31, 1963.

The promissory notes, which are payable to insurance companies, bear interest at 2.7% and 3.25% per annum, and are due January 1, 1972 and July 1, 1977, respectively, with prepayments due annually.

The 3% convertible subordinate debentures are convertible into Common Stock and are due July 1, 1982.

The 4.35% debentures issued during 1963 are due September 15, 1988, but are redeemable at the option of the Company at specified premium rates. Sinking fund payments to provide for the annual retirement of \$4,000,000 principal amount are required beginning September 15, 1968.

The 4.25% bonds which were issued in the amount of 60,000,000 Swiss francs by a Swiss subsidiary are due November 30, 1971, but are redeemable at the option of the issuer prior thereto under certain conditions at specified rates of premium. The bonds are guaranteed as to principal and interest by The Dow Chemical Company.

Other long-term indebtedness consists of loans payable by various foreign subsidiaries with varying rates of interest and maturities.

C Franking and Interest

As of December 31, 1963 the authorized Common Stock consisted of 50,000,000 shares of \$5 par value each. There were 29,523,118 shares outstanding, after deducting 223,920 shares of treasury stock. As of that date 134,681 shares were reserved for sale to employees under the offering of May 1963, 215,551 shares were reserved for conversion of convertible debentures, and 85,385 shares were reserved for issuance under stock option plans.

At the beginning of the current year 117,487 shares were covered by outstanding options under the option plans. During the year 352 additional shares became available under the Substitute Stock Option Agreement because of the Common Stock dividend. 7,422 shares were purchased by employees and options on 25,032 shares expired. The shares covered by options at December 31, 1963 consisted of 73,903 shares under the Key Employees Stock Option Plan at prices ranging from \$55.38 to \$90.63 a share, which represented the highest prices of the stock on the New York Stock Exchange on the dates the options were granted, and 11,482 shares under the Substitute Stock Option Agreement for former Allied Laboratories, Inc. employees at prices ranging from \$32.66 to \$65.85 a share.

Based on an examination of the Federal income tax returns of certain of the companies for the fiscal years 1956 through 1960, the Internal Revenue Service has asserted tax deficiencies, to which the companies do not agree, aggregating approximately \$14,000,000. The companies are contesting such deficiencies and the amount of their ultimate liability thereunder, if any is not presently determinable; thus no provision therefor has been made in the accounts of the companies or in the accompanying financial statements.

Other contingent liabilities at December 31, 1963 included guarantees of loans of approximately \$16,000,000 for construction of facilities, employees' housing, and other purposes; agreements to make future loans and investments in the amount of \$2,700,000 and for retirement payments to certain officers in a maximum amount of \$1,200,000; and guarantees of rental income from housing projects.

ST0004340

Statement of Earnings

Statements of Surplus

PARENT AND SUBSIDIARY COMPANIES

UNITED STATES CHEMICAL COMPANY AND SUBSIDIARY COMPANIES

UNITED STATES CHEMICAL COMPANY AND SUBSIDIARY COMPANIES

	DECEMBER 31, 1963	1962
LIABILITIES		
Accounts payable	\$ 14,027,605	\$ 14,873,147
Long term debt due within one year (Note D)	3,120,000	4,500,000
Accounts payable	51,829,469	41,946,781
United States and foreign taxes in income	41,731,675	39,394,469
Unpaid and other current liabilities	61,333,335	54,798,652
	\$ 173,882,104	\$ 195,615,649
STOCK DEBT (Note D)		
Preferred stock, 7 1/2%	\$ 7,000,000	\$ 7,000,000
Preferred stock, 7 1/2%	31,500,000	34,500,000
Preferred stock, 7 1/2% convertible	10,077,000	10,276,000
Debt, 4 1/2% (Series subsidiary)	13,872,832	13,872,832
Notes payable under revolving credit agreement	4,333,556	60,000,000
Other		
	\$ 166,783,388	\$ 125,648,832
NET INTERESTS IN SUBSIDIARY COMPANIES	\$ 970,701	\$ 1,242,319
STOCKHOLDERS' INTEREST (Note E):		
Common Capital Stock (1963) — issued,	\$ 148,735,189	\$ 145,727,414
29,747,038 shares	471,091,275	439,422,026
Capital surplus	117,324,183	117,709,315
Earnings surplus	\$ 737,350,647	\$ 702,818,955
Less — Treasury stock — at cost	12,464,233	4,071,548
(1963) — 223,920 shares	\$ 724,886,414	\$ 698,747,407
TOTAL	\$1,048,324,607	\$1,021,493,807

See Notes to Financial Statements

	FOR THE YEARS ENDED DECEMBER 31, 1963	1962	FOR THE YEARS ENDED DECEMBER 31, 1963	1962
		(UNAUDITED)		(UNAUDITED)
SALES AND OTHER REVENUE			CAPITAL SURPLUS	
Net sales	\$967,672,387	\$926,207,614	Balance at beginning of the year	\$419,422,026
Dividends received from associated companies	5,713,916	5,303,180	Additions:	
Interest income	3,273,745	2,248,178	Excess of approximate market value over par value of Common Stock issued as a stock dividend	10,894,501
Fees from operation of Government-owned plants	1,329,000	1,007,300	Excess of selling price over par value of Common Stock issued to employees	596,965
Other income	11,381,623	11,674,132	Excess of face value of debentures over par value of Common Stock issued on conversion	177,681
	\$995,370,691	\$944,442,624	Balance at end of the year	\$471,091,275
COSTS AND OTHER CHARGES				
Cost of sales*	\$612,122,026	\$583,918,826	EARNED SURPLUS	
Provision for depreciation, amortization, and depletion	99,192,283	99,364,172	Balance at beginning of the year	\$117,709,315
Provision for pension and profit-sharing plans	10,965,534	11,911,273	Earnings for the year	80,694,715
Selling and administrative expenses*	110,475,065	105,733,314	TOTAL	\$198,404,230
Interest expense	7,833,403	9,156,005	Deductions — Dividends:	
Other income charges	3,414,827	4,763,732	Cash	\$ 47,070,861
Minority interest in income of subsidiary companies	52,828	29,001	Common Stock (1962, 917 shares at approximate market value of \$18 per share)	33,809,186
Provision for United States and foreign taxes on income	64,600,000	58,474,304	TOTAL	\$ 80,880,047
	\$908,635,976	\$873,552,647	Balance at end of the year	\$117,524,183
EARNINGS FOR THE YEAR	\$ 80,694,715	\$ 73,889,977		

* Exclusive of items shown separately

See Notes to Financial Statements

See Notes to Financial Statements

ST0004341

Condensed Comparative Statements

FINANCIAL CONDITION

Amounts are expressed in millions of dollars.

FIGURES ARE AS OF DECEMBER 31,

	1963	1962	1961	1960
ASSETS				
Cash and marketable securities	\$ 54.3	\$ 43.3	\$ 48.5	\$ 50.8
Receivables (less reserves)	198.7	147.7	135.6	114.9
Inventories	167.7	165.4	164.6	162.9
LIABILITIES AND EQUITY				
Notes payable	\$ 19.1	\$ 59.5	\$ 101.2	\$ 96.4
Accounts payable and accruals	115.0	96.7	86.2	74.5
Taxes on income	41.8	39.6	25.8	28.2
Cost	\$1,244.6	\$1,254.9	\$1,307.8	\$1,228.1
Depreciation, amortization, and depletion	687.2	677.0	696.0	633.8
Notes and debentures	\$ 166.8	\$ 125.6	\$ 152.7	\$ 140.9
Minority interests	9	1.2	1.3	1.6

EARNINGS

Amounts are expressed in millions of dollars.

FISCAL YEARS ENDED DECEMBER 31,

	1963	1962	1961	1960
Net sales	\$967.7	\$926.2	\$841.7	\$819.8
Other revenue	21.7	20.2	19.1	16.3
Cost of sales	\$612.1	\$583.9	\$533.3	\$509.2
Depreciation, amortization, and depletion	99.2	99.6	99.4	81.9
Selling and administrative expenses ..	110.5	105.7	103.7	103.8
Pension and profit-sharing plans	11.0	11.9	10.5	10.0
Interest expense	7.8	9.1	9.5	7.6
Other income charges	3.5	4.8	3.1	2.0
Taxes on income	64.6	58.5	41.1	50.8
Earnings per share on				
Common Stock (in dollars)	\$ 2.73	\$ 2.51	\$ 2.07	\$ 2.48
Cash dividends per share paid on				
Common Stock (in dollars)	1.60	1.60	1.45	1.40
Cash dividends on Common Stock	47.1	46.6	43.5	39.6
Stock dividend at approximate market value	33.8			44.0
Taxes (major)	91.6	84.1	70.4	75.7
Wages paid	239.2	231.7	224.3	209.8
Cost of employee benefits	25.5	23.7	23.0	22.1
Number of employees at year end (thousands)	31.5	30.6	30.6	30.5
Additions to property	82.0	69.0	115.0	129.0

NOTES: The Company changed from a fiscal year ended May 31 to a calendar year effective December 31, 1962. The balance sheets as of December 31, 1960 and 1961 and the statements of earnings for the three years ended December 31, 1962 are shown for comparison only and have been prepared from the records without audit. The earnings for the years ended May 31, 1961 and 1962 and all calendar years include those of Allied Laboratories and its subsidiaries, merged into The Dow Chemical Company as of December 31, 1960.