control, was completed in January, 1973.

A substantial part of our antimonial lead and lead oxides is sold to battery producers for the automotive after-market. The high production rate of new automobiles is continuing, and sales of replacement batteries are expected to increase in the future.

N L Industries, through its Magnus Bearings operation, has long been the leading producer of solid journal bearings for the railroad industry. This has become largely a stable replacement business for repairs to rail cars with similar equipment. Under recent regulations, all new freight cars, as well as cars undergoing major overhaul, must be equipped with roller bearings. We have been producing roller bearings on a limited basis for several years for the qualification tests of the Association of American Railroads, and production is being expanded.

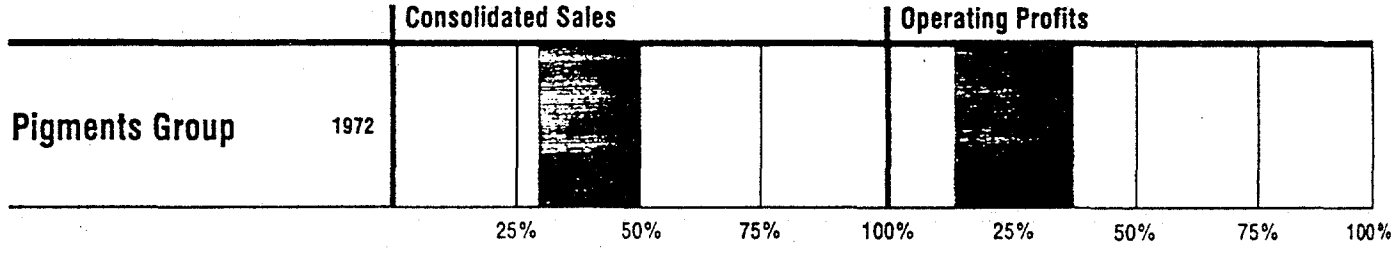
With the electronics industry almost totally converted to solid state circuitry, demand for flux systems and solders designed specifically for solid state printed circuits has been growing, and our line of HY-PURE solders has been outpacing the industry generally.

Precision automated material handling systems for delicate operations, made by our Jonathan Systems operation, were until recently custom-designed exclusively for the military. They are now being offered to commercial producers and are receiving considerable interest.

Titanium Metals Corporation of America (TMCA), a subsidiary jointly owned by the company and Allegheny Ludlum Industries, Inc., reported a profit of $1,398,000 on sales of $65,262,000 for 1972. In the previous year, TMCA had reported a loss of $9,853,000 on sales of $37,277,000. In July, 1972, TMCA acquired the Standard Steel Division of B-L-H, Inc.; results for the year include the sales and earnings of Standard Steel since that date.

TMCA's Timet Division produces titanium sponge, ingot and mill products. Losses from titanium metal operations were substantially reduced from levels of the two previous years. Shipments of titanium mill products rose approximately 13%. Procurement or ordering of aircraft, which represents the major market for titanium metal, began to rise in 1972 after a lull of several years, with some indications for stepped up ordering in the near future. Industrial uses of titanium, the smaller part of the market, are continuing to grow at a rapid rate.

Standard Steel Division produces machined steel rolled wheels and axles for rail cars, seamless rings and a variety of types of forgings for industry, and makes its own specialty high-strength steels. Standard Steel Division's sales were held to 1971 levels primarily because hurricane-induced floods halted production for several weeks. New orders during the year and year-end backlog, however, represented records, and a further increase in shipments and new orders is expected for 1973. Products which have been showing strength include specialized forgings for nuclear power-generating installations, and low-noise mounted wheels designed specifically for urban mass transit systems.




**Titanium Pigment Division,** Sayreville, N.J.
Titanium pigments and chemicals.

**Kronos Titan—GmbH,** Leverkusen, West Germany
Titanium pigments; gellants; lead pigments.

**Canadian Titanium Pigments, Limited,** Montreal, Canada
Titanium pigments; gellants; lead pigments; stabilizers; zirconium and titanium compounds.

**Kronos Titanium Pigments, Limited,** London, England
Titanium pigments.

**Kronos SA/NV,** Brussels, Belgium
Titanium pigments; gellants; lead pigments.

**Kronos Titan A/S,** Fredrikstad, Norway
Titanium pigments; gellants; lead pigments; stabilizers.

**Titania A/S,** Hauge i Dalane, Norway
Ilmenite ore mining.

*__Societe Industrielle du Titane S.A.__ (93%), Paris, France
Titanium and lead pigments.

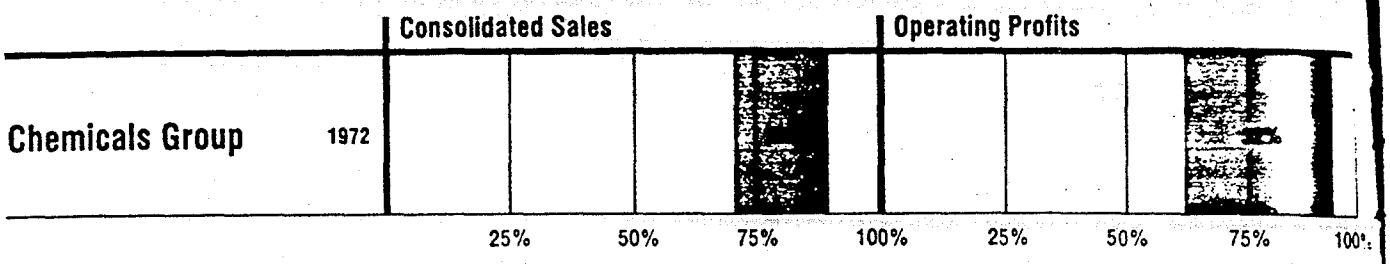
*Affiliates included in consolidation on an equity basis only, therefore not included in consolidated sales or operating profits percentages. Figures in parentheses represent percentage of voting securities owned.



Earnings of the Pigments Group were substantially improved during 1972, as consumer demand for the products of our major pigment-using customers—manufacturers of paint, paper, plastics, rubber and ceramics—picked up.

The industry-wide overcapacity that had plagued the titanium dioxide industry for several years disappeared in the latest year. Current supply and demand are in relatively close balance.

In late 1971, we ended our unprofitable calcium-extended pigment and chloride process operations, which together had represented some 9% of our then theoretical North American capacity. A 17-week strike during 1972 at our St. Louis pigment plant impaired pro-




**Baroid Division,** Houston, Texas
Oil well drilling materials and services. Chemicals for petroleum industry, gellants for grease; water treating chemicals. Well perforation and completion, nuclear well logging.

**Pigments & Chemicals Division,** Hightstown, N.J.
Antimony and lead oxides; chemicals; anti-corrosive pigments; gellants and stabilizers.

**The Baker Castor Oil Company,** Bayonne, N.J.
Castor oils and chemical derivatives, polyurethane products.

**DeLore Products,** St. Louis, Mo.
Barium and calcium pigments.

**Baroid do Brasil, Ltda.,** Salvador, Brazil
Oil well drilling materials.

**Baroid of Canada, Ltd.,** Calgary, Canada
Oil well drilling materials, services.

**Baroid International, S.p.A.,** Rome, Italy
Oil well drilling materials.

**Baroid of Nigeria, Limited,** Lagos, Nigeria
Oil well drilling materials.

**Baroid (U.K.) Limited,** London, England
Oil well drilling materials.

**Oncor SA/NV,** Langerbrugge, Belgium
Anti-corrosive pigments.

**Perubar, S.A.,** Lima, Peru
Barite mining.

**Pigmentos Minerais Industrial e Commercial Pigmina, S.A.,** Salvador, Brazil
Barite mining.

*__Abbey Chemicals Limited__ (70%), London, England
Gellants and stabilizers.

*__Baroid Australia Pty., Limited__ (99%), Sydney, Australia
Oil well drilling materials.

*__Baroid of Libya, Ltd.__ (49%), Benghazi, Libya
Oil well drilling materials.

*__Baroid de Venezuela, S.A.__ (92%), Maracaibo, Venezuela
Oil well drilling materials.

*__Bentone-Chemie GmbH__ (70%), Nordenham, West Germany
Gellants.

*__The Carter White Lead Company of Canada, Limited__ (50%), Montreal, Canada
Lead pigments; oxides; stabilizers.

*__Baroid Trinidad Services, Ltd.__ (50%), Trinidad, West Indies
Oil well drilling services.

*Affiliates included in consolidation on an equity basis only, therefore not included in consolidated sales or operating profits percentages. Figures in parentheses represent percentage of voting securities owned.

The steadily expanding demand for energy, along with an already pinching shortage of oil and gas, has spurred an increase in exploratory and drilling activity throughout the world, particularly in Canada, the North Sea, Nigeria, Southeast Asia and the Middle East.

The upsurge in this activity, accentuated by our own growing penetration of this market, provided an increase in both sales and earnings for our Baroid operations in 1972. This trend is expected to continue. The shortage of energy reserves will require increased exploration and improved technology in stimulating deeper drilling. Both aspects call for greater use of essential drilling fluids and for our specialty engineering services.

The largest part of our Baroid Division's supplies and services to the oil industry is oriented to drilling new wells, but there has been growing acceptance for our ancillary chemicals for the treatment of crude oil on the surface, and for our specialty engineering services, which use sophisticated electronic and physical techniques to make drilling operations more efficient and economical.

One new system allows certain types of drilling operations to be carried out in offshore areas without danger of polluting the surrounding waters. It has already been used successfully in the North Sea, the most active area of new offshore drilling activity today.

Treating chemicals originally developed for oil field use have been amplified into a range of chemicals for use by other industries. BAROCHEM and SURFLO Brand products for industrial water treatment are expected to have a good growth rate because of tighter environmental controls and greater penetration of this market.

In 1972, the sales volume of our Pigments & Chemicals Division increased in pigments, gellants, plastic additives and flame retardants. Although these chemical compounds go into a wide range of end uses, many of those, in turn, are used ultimately within the broad contexts of the automotive and construction industries. In both those industries, current demand is high and is expected to remain so for the future.

The use of flame retardants is growing rapidly as the result of government regulations and consumer concern over safety in inherently flammable materials. N L Industries' antimony-based retardants are highly effective in retarding combustion in flammable plastic materials. Two new and more sophisticated types of antimony-based flame retardants were introduced this year with considerable success.

More stringent heat resistant requirements for wiring used in domestic and industrial construction, as well as in electronic, automotive and other equipment, are prompting demand for such new plastic additives as





*Chemicals for drilling fluids are vital to develop new energy sources.*