

ST. JOE 1978



LEAD

Present Status—Lead enjoys strong demand in the United States and around the world. Domestic consumption has grown 14% over the past ten years, and the U.S. producers are satisfying 80% of the demand. The source of this growth has been the increase in use of lead for a growing number and variety of batteries. Record production, sales and profitability have resulted for the St. Joe Lead Company in 1978.

Problems—Workplace and environmental standards promulgated during 1978 pose a threat to the very existence of the U.S. lead industry. On September 29, 1978, the Environmental Protection Agency announced its ambient air quality standard, calling for a lead-in-air limit of 1.5 micrograms per cubic meter of air,

averaged over a 90-day period at the fence line of lead operations. On November 13, 1978, the Occupational Safety and Health Administration announced new rules restricting exposure to lead in the workplace. OSHA's new standard calls for reducing the maximum exposure from 200 micrograms of lead per cubic meter of air to 50 micrograms, averaged over an eight hour period.

St. Joe and the industry believe that these two standards cannot be met with present technology, and that the standards are far more stringent than necessary to protect the health of workers and the general public. While St. Joe is active in development of environmentally-preferable methods of producing lead, success in such

efforts requires time and the assurance that existing plants may continue operations until replacement technology can be tested and installed. *Opportunities*—Demand for lead should continue to grow for battery use, and we see nothing in the short term to threaten its inherent advantages over competing battery systems. We see continued increase in the use of the maintenance-free battery, in which St. Joe has an especially favor-

able supplier position. The electric car is on the threshold of becoming a reality, and, initially at least, the lead acid battery will play a crucial role in this development.

In addition, society's need for silence ensures the growing use of lead for sound attenuation both in industry and in the home.





St. Joe Lead Company, the nation's largest lead producer, operates four mine/mill complexes in southeastern Missouri. The aggregate mine capacity of 20,000 tons of ore per day feeds lead concentrate to St. Joe's Herculaneum, Missouri, smelter, the largest lead smelter in the U.S., with a rated capacity of 230,000 tons of refined lead per year. The Lead Company is also responsible for the operation and administration of St. Joe's Pea Ridge iron mine and pelletizing plant located near Sullivan, Missouri.

St. Joe's lead operation had a record year in 1978 with smelter production, sales and profitability reaching new highs.

In 1978 St. Joe's Missouri mines produced 336,888 tons of lead concentrate, compared with 342,573 tons in 1977. Refined lead metal produced in 1978 totaled 240,305 tons, up from 228,780 tons in 1977. Sales reached \$176,747,000, up from \$147,280,000 in 1977. Operating profit amounted to \$79,474,000, compared with \$66,009,000 one year ago.

Battery Demand Up

The sales record achieved by the Lead Company was primarily due to the strong demand for batteries. Sales to the battery industry accounted for over 60% of St. Joe's lead sales. Approximately 20% of St. Joe's sales to the battery industry are for units to be used as original equipment in new cars, while the remaining 80% are for replacement battery applications. 1978 was a good year for the U.S. auto industry with 9,300,000 cars being sold domestically, an increase of 200,000. Replacement battery sales generally increase as the thermometer drops, and the winter of 1977-78, one of the severest on record, helped contribute to increased battery sales and lead consumption.

Broadening Acceptance for Maintenance-Free Battery

In 1978, an estimated 29% of all automotive batteries utilized the maintenance-free lead alloys promoted by St. Joe, up from 13% in 1976 and 20% in 1977. While in 1978 General Motors Corporation equipped all its new domestic cars and light trucks with maintenance-free batteries, virtually all original equipment automotive batteries in 1980 are expected to be of the new type.

In addition to providing superior per-

formance, the maintenance-free battery allows manufacturers the option to trim battery weight, tying in with the auto industry program to improve gas mileage through weight reduction.

St. Joe pioneered the development of the lead-calcium-tin alloys used in most maintenance-free batteries, and subsequently developed precision wrought alloys. Coils of the wrought alloys are used by battery manufacturers to feed battery grid fabrication processes many times faster than conventional cast grid manufacturing techniques. St. Joe is completing in mid-1979 a wrought lead strip plant at Herculaneum designed to produce up to 30,000 tons of lead strip per year.

St. Joe's involvement in the cast and wrought alloy battery grid market represents an increase in the market potential for its lead products. Previously St. Joe supplied lead to the battery industry only for production of the lead oxide active material, accounting for about 50% of the use of lead in batteries. Now, St. Joe supplies lead suitable for the needs of the entire battery.

Growing Sales in Other Markets

Sales of batteries for forklift trucks, golf carts, delivery vans and other "traction



vehicles" that run on electric batteries continue to grow. At present, one third of the sales are for the original equipment market segment and the other two-thirds are for replacement batteries. As the market matures, we expect the replacement market share to increase to 80% or more.

Delays by the U.S. government in implementing regulations limiting lead in gasoline left sales of lead to the gasoline additive market in 1977 above what had been expected earlier. A significant drop did occur in 1978, with consumption of refined lead for additives down to an estimated 190,000 tons from 233,000 tons a year earlier. Further declines are expected, with gasoline additive consumption of refined lead leveling off at 110,000 to 115,000 tons in 1981. Only about 12% of St. Joe's lead sales were made to the gasoline additive segment in 1978, about equal to the lead industry consumption percentage.

Lead Inventories at Low Levels

Supply and demand have been in balance throughout the free world. Some spot shortages have occurred, and eastern bloc countries, particularly the U.S.S.R. and China, have been net buyers. Lead prices in 1978 tended to

reflect the sales increases and inventory declines throughout the world. At the beginning of the year, St. Joe's price for lead was 33¢ per pound; it declined to 31¢ in May, and then rose in several steps to 38¢ by the end of the year. Additional increases in early 1979 have brought the price to its current level of 44¢.

Strong sales in the U.S. market resulted in greatly reduced inventories of finished goods, but minor disruptions of production also contributed. St. Joe's smallest mill at Indian Creek suffered a disruption when the rough ore bin collapsed in October 1978, rendering much of the control equipment inoperable. The mine went back in operation in January 1979.

Pollution Control Problems and Opportunities

The Environmental Protection Agency and the Occupational Safety and Health Administration promulgated during 1978 unrealistically stringent guidelines for allowable levels of lead. We believe that these limits cannot be met with the existing methods of production. If they are enforced, plant closings in both lead producing and consuming industries will likely result. St. Joe is opposing in the courts the implementation of the guidelines imposed by the EPA and OSHA.

Lead kettle being skimmed at the Herculaneum refinery in Missouri.

St. Joe is furthering research in new technologies that promises to greatly reduce the inherent environmental problems of conventional lead production processes. This, we believe, is the proper approach to insure that St. Joe remains a major producer of lead and lead alloys. The price for reducing pollution will not be small, with environmental costs adding substantially to the price of lead in the next few years.

Labor Agreements Signed

At the end of the first quarter of 1978, labor contracts were entered into, covering all our lead mining and smelting operations for a three-year period. The agreement at the Herculaneum smelter runs until April 30, 1981, while the agreement at the mines expires March 31 of that year.