

American Smelting & Refining, the biggest of the nonferrous metals processors, is now reaching out for new ore fields and new minerals. It's a plan in which . . .

Asarco Bids To Be A Giant In Mining

For a company with no trouble at all placing among the top 50 U.S. corporations, American Smelting & Refining Corp. is possessed of a surprising modesty.

This quality certainly doesn't come from any lack of accomplishments to crow about. Last year American Smelting (Asarco) had \$540-million in direct sales. And ever since it was created 57 years ago, it has been the world's largest custom smelter and refiner of nonferrous metals.

However, custom smelting now represents only half of its income. Over the past decade, the quiet giant has been building new muscles. Now it's beginning to flex them. It's making a bid to become a top mining company. Its metallurgical research is uncovering new sources and uses for the little-known strategic metals of the future. And its current operations may also be leading it into both chemicals and building materials fields.

• **Why Shy?**—Yet the public is much less aware of American Smelting than of some of the comparable corporate giants. Even potential customers for new products sometimes turn out to know next to nothing about the company whose salesman is calling on them. Occasionally the same story comes from Asarco men recruiting new technical talent.

This may be partly because Asarco is a closely knit corporation that has seldom sought publicity. When it was only two years old, it became one of the Cuggenheim interests. And the



PLANT in Selby, Calif., is conference room for Asarco Chmn. Roger Straus (center), H. S. Reid, plant manager.

LEAD AND COPPER are smelted at Asarco's sprawling layout in El Paso, dominated by world's loftiest stack. Asarco has 26 smelting or refining plants.





LEAD BARS turned out at Selby, biggest lead smelter and refinery in Asarco empire, come mostly from ore purchased abroad.

(Story starts on page 96)

Guggenheim family, despite its importance to U.S. industrial history, is far better known today for its philanthropies than for the business adventures that made them possible.

Such is probably also the case with Roger Williams Straus (cover), chairman and chief executive officer of Asarco today. Straus has been more in the news in other capacities—as U.S. delegate to the ninth United Nations General Assembly, co-chairman of the National Conference of Christians and Jews, trustee of the John Simon Guggenheim and Daniel and Florence Guggenheim Foundations. He is also prominent in Republican Party circles.

This next year will be Straus' last as chief executive of Asarco, for he will have reached the mandatory retirement age of 65. However, his retirement is expected to cause only the slightest of shifts in the company's long-range policy. His successors are expected to follow the company pattern of growth that Straus has mapped out during the 10 years he has spent as operating chief of the company.

Already the line of succession is clear. Kenneth Brownell, now president, is slated to step up to Straus'

Robb, and R. Worth Vaughan, currently executive vice-president, is expected to move up to the presidency.

I. High on the Heap

To describe the exploits of the company Straus heads, it is often necessary to use superlatives. For instance:

- As the world's largest custom smelter, it buys nonferrous ores—lead, zinc, copper, gold, and silver—smelts and refines them, then sells the metals on the world market for its own account. A substantial chunk of its business has been what's known as "toll": processing ores for others for a fee.

- It's the world's largest producer of lead. With world production at 2.4-million tons, Asarco is responsible for almost 20% of smelter output, about 15% of sales.

- In zinc, it contributes about 10% of world supply, 15% of U.S. consumption. It may be the biggest single seller of the gray metal.

- It's easily the world's largest seller of silver. Last year it disposed of almost 75-million ounces on world markets. (Total U.S. consumption of silver—for industry, jewelry, coinage—came to 108-million ounces.)

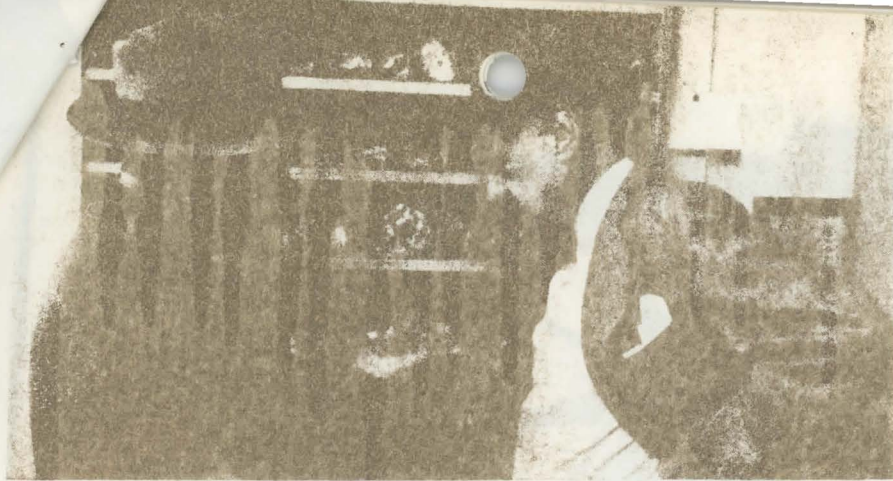
- Through secondary operations, Asarco is dominant in such uncommon metals as bismuth, cadmium,



ZINC FUMING furnace, which Selby workmen are tapping here, reheats lead slag and releases zinc in a fume that is captured.

INSPECTION of Selby facilities is made by Straus (in bow tie). He is away from New York nine months a year.





ORE SAMPLES are familiar material to Straus, who worked 20 years in American Smelting ore department. He examines a specimen with Jack Dingle, ore sampling department foreman at Selby.

selenium, germanium, indium, tellurium, thallium—all increasingly vital to an age of atoms, electronics, and transistors.

• Its product list includes agricultural chemicals, fertilizers, insecticides—and one of its copper smelters turns out greater tonnages of sulfuric acid than of copper.

All in all, Asarco offices high above the streets of lower Manhattan are headquarters for nearly 30 mines in the U.S., Mexico, Canada, Peru, Australia, and Nicaragua; 26 smelting or refining plants, and a scrap and alloys division with 14 plants of its own.

It also guides the destinies of affiliates, some of them as mighty in their fields as Asarco itself. Revere Copper & Brass, Inc., in which it has a 36% controlling stock interest, is the largest U.S. non-integrated fabricator of non-ferrous metals. General Cable Corp., owned 41% by Asarco, is the leading independent cable and wire maker.

II. Born a Giant

American Smelting & Refining was born big. It was frankly conceived as a consolidation of all U.S. nonferrous smelters.

The key man was Henry H. Rogers, 19th century financial titan who had worked with John D. Rockefeller to set up the gigantic Standard Oil trust and set out to do the same thing with the nonferrous metals industry.

Rogers shaped Asarco in 1899 out of 16 smelters, 18 refineries, and a number of small mines. But 10 big independent smelters stayed outside. So did the burgeoning mining and smelting empire of the five Guggenheim brothers—who were on hand to bail out the new combine when it ran into trouble two years later. In

return for some of the Guggenheim properties and cash for working capital, Asarco gave them 45% of its stock.

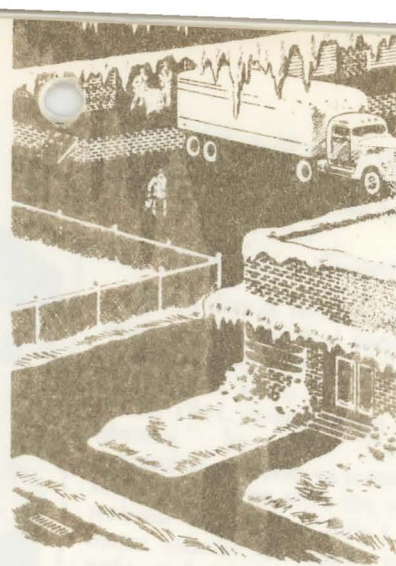
• **Competitors**—Even with new blood, Asarco didn't achieve absolute dominance. In its first 15 years, four vigorous rivals appeared—U.S. Refining & Mining Co., International Smelting & Refining, National Lead Co., and American Metal Co. But in an industry of many small individual holdings, Asarco, with a \$100-million structure, was then firmly in the lead.

In the ensuing 50 years, its proportional power shrank. With more and more industrialization, demand for non-ferrous metals skyrocketed. As the world became electrified, there was particular clamor for copper. Existing mines either died or grew huge—into Anaconda Co., Phelps Dodge Corp., Kennecott Copper Corp., and others. Many of the new giants built their own processing facilities and bypassed Asarco.

Historically, American Smelting had never been a copper company (although it processes significant amounts, including much of Kennecott's production). Nor had it been of any large importance in mining, except for zinc. Mining's richer rewards are accompanied by greater risks—and for many years Asarco preferred the surer, steadier returns of the intermediate position as processor.

• **Vulnerable**—As a result, Asarco began losing business to the integrated facilities of the big miners. Its toll business was becoming almost profitless. When it tried to raise rates, customers threatened to build their own smelters and refineries.

In custom smelting, the profit margin is much thinner with ores purchased from others than with raw material from a company's own mines. Without control of its own sources of supply,



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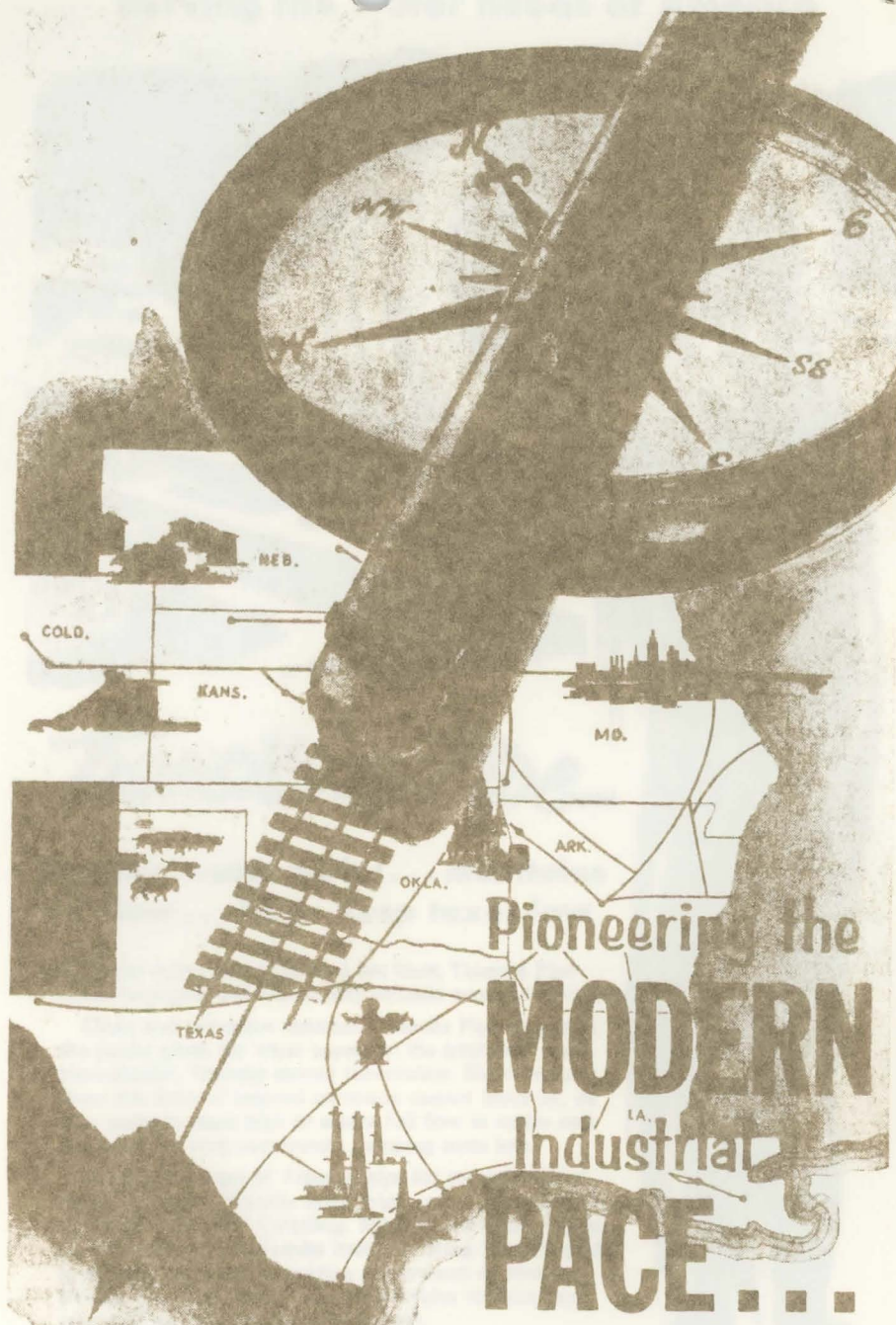
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ROUTE OF THE EAGLES

Asarco felt itself more vulnerable than the big mining companies to wild price shifts in the nonferrous markets.

III. Staying a Giant

When Straus became Asarco's president in 1941, he had been living with such problems ever since he joined the company in 1914.

"By 1941, several things were already obvious," he says. "Certainly the demand for nonferrous metals was going to keep up, even after the war. But we realized that if we didn't have both major sources of supply in our own right, and didn't get maximum utilization out of raw materials, we might be headed for trouble."

In the 15 years since then, Straus has been taking his own advice. Asarco's metallurgical research program is now so outstanding that it can echo, for metals, the legendary claim of meat packers "to get everything out of the pig but the squeal." More important, within 10 years it will be in a powerful position in basic metals, through new or newly developed reserves.

In the last decade, the company has spent \$163-million for new mining properties, most of which have yet to produce. It will probably spend as much again during the decade to come.

And with an active prospecting organization for the first time, Asarco has found and begun to develop major new fields of copper, asbestos, and fluorspar.

• **Copper**—In South America, Asarco controls (with a 57 1/2% stock interest) and operates Southern Peru Copper Corp., with three deposits estimated to hold 12% of the entire free world's copper reserves. By the time it produces the first pound of ore—three years from now—it will have cost the owners \$200-million. The initial investment includes building a 100-mile railroad over the Andes, a \$16-million smelter, almost a whole new seaport, and stripping some 120-million tons of overburden preparatory to open pit mining.

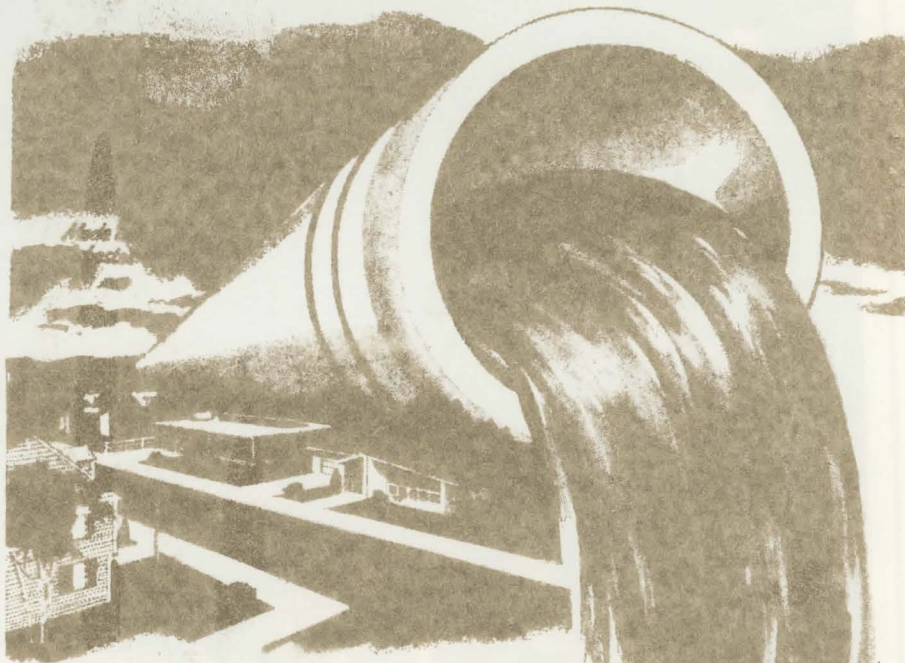
But it should be well worth the trouble. Beginning production will be around 120,000 tons of blister copper a year—at today's prices worth approximately \$90-million. That, with its other holdings, puts Asarco solidly into the copper business.

For instance, its subsidiary, Mt. Isa Mines, Ltd., in the northern Australia desert promises to become one of the world's richest copper deposits. It also contains limitless lead.

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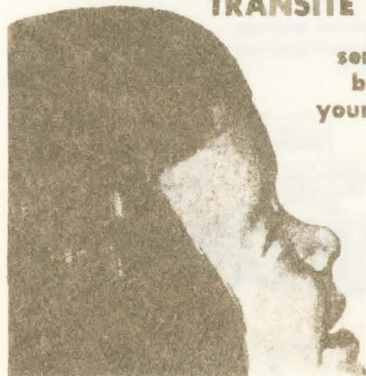
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time ago for its silver that could economically be hauled the 600 railroad miles to a seaport. Copper development was slower because the distance was more of an obstacle.

There are other Asarco copper deposits in Newfoundland, British Columbia, and Southern Arizona. Although officials won't be specific about the total reserves, it's safe to assume the company no longer has to worry.

• **Fluorspar**—A newer interest than copper for Asarco is fluorspar, a basic raw material for the aluminum industry. Synthetic cryolite—for the molten baths in electrolytic cells—is made from it. Fluorspar is also used in steelmaking, glass, and ceramics, as a source for fluorine and hydrofluoric acid. And it will be important in plastics, pharmaceuticals, and rocket fuels.

American Smelting's interest in fluorspar dates from 1953, when it acquired rich Mexican reserves, believed to be the highest grades available in the hemisphere. Although it is now in oversupply, fluorspar is expected to rise sharply in demand in the next decade. Requirements for hydrofluoric acid alone will probably double within a few years.

• **Asbestos**—One of the company's newest ventures is asbestos. Straus and Asarco ventured into asbestos because it is in steady, increasing demand, with more and more applications. There isn't too much around, and prices are on a stable upward curve.

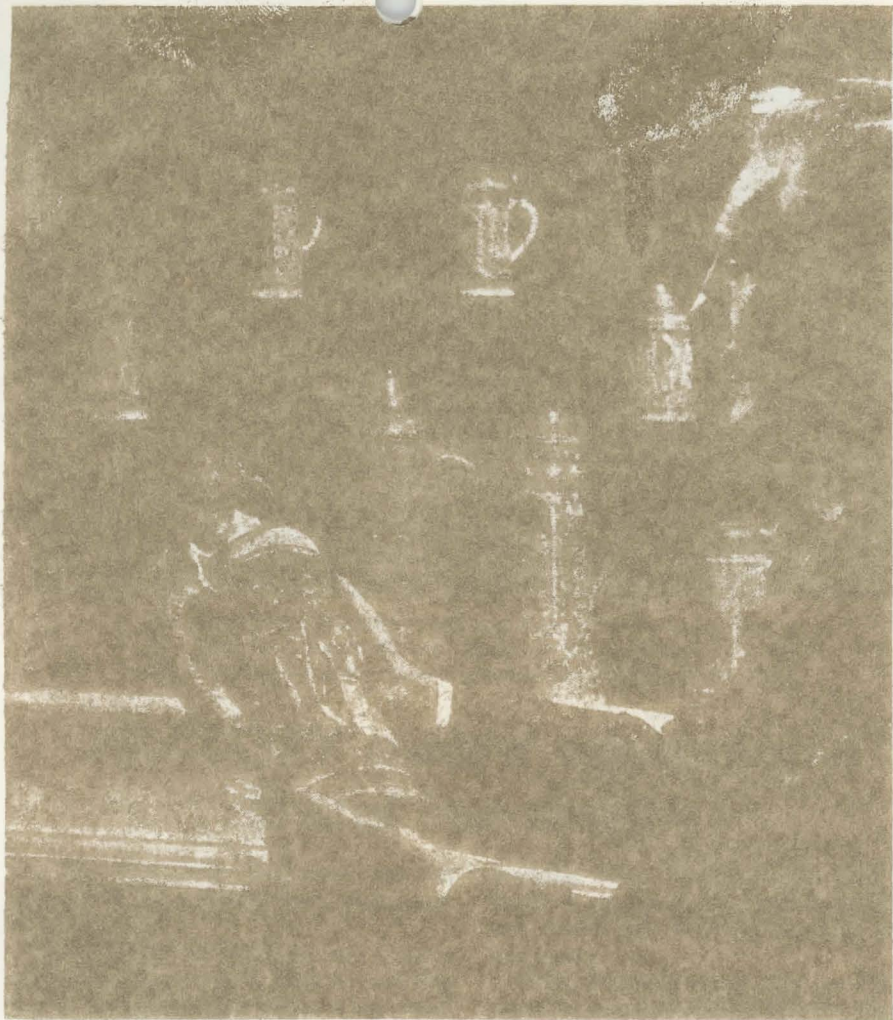
The move into this field was a sort of insurance against the wild cycles in non-ferrous metals, which swing from surplus to shortage with violent price changes.

But its debut into asbestos took a degree of corporate courage. For one thing it is a product entirely outside Asarco's experience, requires entirely new marketing techniques.

More to the point, the particular property involved was one that had already been turned down by all the big asbestos companies. Not only was it locked into the center of a big field controlled by others, but the deposits were buried between 70 and 200 feet below the surface of a lake. But Asarco figured it knew mining and mineral processing, and was willing to gamble. By the time it starts mill production in 1958, it will have laid out some \$35-million.

In the process, it will have drained a lake $1\frac{1}{2}$ miles long by a half-mile wide, built four dams, two dikes, a diversion channel, two large disposal areas, deepened a river, and moved more than 25-million yards of mud, sand, gravel, and clay to get at the mineral fiber.

The proved reserves under Black Lake come to about 45-million tons, although company officials expect there's probably twice as much there. This doesn't make Asarco an immediate



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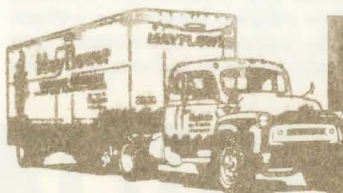
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threat to Johns-Manville Corp., leader in the field, whose reserves are far greater. Nor does Asarco have any current plans to make consumer products of asbestos. Though it hasn't mined or sold an ounce of the mineral fiber yet, it's in the asbestos business to stay, and has exploration teams hunting for more.

• **Lead**—Asbestos will join a product list on which lead has been prominent for years—so prominent, in fact, that the first big antitrust action filed by the Justice Dept. under the Eisenhower Administration named Asarco and the St. Joseph Lead Co. as joint defendants.

Justice charges that the two companies control two thirds of the lead sold in the U.S. and therefore control prices. The sales figure is approximately correct—and it doesn't include Asarco's sales outside the U.S.

But, argues Straus, the real competition is with European smelters, not with domestic producers or processors. Despite the lead mines Asarco owns, at least two of its big smelters (at Selby, Calif., and El Paso) depend mainly on foreign lead sources and must compete with the world.

Back in the 1920's, Asarco and St. Joseph owned criss-crossing lead properties that could be worked economically only as combined operations. So Asarco sold the mines to St. Joseph—and at the same time got a 30-year contract to smelt St. Joseph's output. This, Justice claims, launched a conspiracy to set prices.

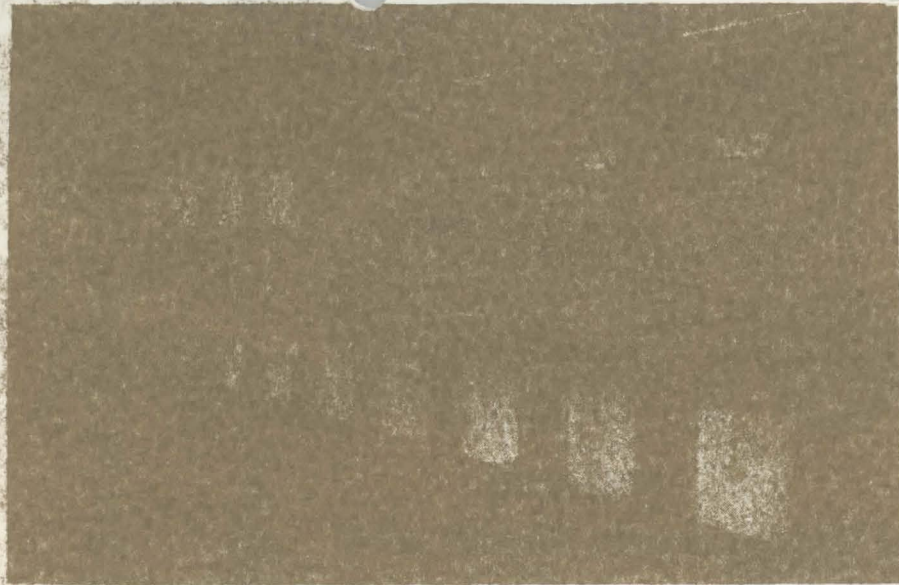
• **Rebuttal**—Strauss says that is nonsense. Lead prices fluctuate widely on a daily basis in response to international demand. It's not unusual for the spread to be 35% up or down within a year's time.

Besides, the lead market is anything but strong now. Government stockpiling props it up. And metals men consider it something of an irony that one arm of the government charges the industry with monopolistically maintaining prices while another arm continues stockpiling primarily for the same purpose.

Straus doesn't like stockpiling anyway, despite its benefits to his company. But he likes it better than tariffs. As the law reads now, duties rise as prices drop on certain metals. And Asarco is particularly vulnerable to tariffs, since so much of their ore comes from outside the country. And all its important new holdings are outside.

• **Silver**—On the surface Asarco would seem to be even more important in silver. Of about 203-million ounces of silver produced in the world last year, Asarco's refineries turned out slightly more than 35%. They also supplied at least half the non-coinage consumption of silver in the U.S.

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comes from the company's own mines. The rest was a by-product of other ores Asarco smelts. But much of the silver Asarco sells belongs to its toll customers. Silver selling is a specialty of its own, and Asarco handles it as a convenience. The situation with gold is similar—last year its mines provided only 34,000 of the 1,006,183 ounces it sold.

IV. Exotic Newcomers

Research is doing almost as much for Asarco's future as new ore deposits. Its big secondary products program, since the end of World War II, now gives Asarco maximum utilization of its ores. One claim about Asarco goes: "The company today doesn't make a dime out of its major operations. All its profits come from by-products." And in a way, that's true.

Copper, zinc, lead are seldom found in a pure state. The ores usually have silver, gold, and the minor metals bound with them. Out of a single charge of ore may come eight or nine different metals. Asarco's learned to get them all.

Most of the secondary metals come in such minute quantities in nature that there's no point in mining for them specifically. But when the tiny quantities are taken out of the vast tonnages of major ores smelted in a year, they become big factors in their own right.

Bismuth and antimony are recovered in lead refining; cadmium and indium in zinc smelting; arsenic, nickel sulphate, selenium and tellurium are obtained from the copper plants. Germanium—before transistors—was considered only a metallic "poison" that had to be removed in lead smelting.

• Examples—Through its research program, Asarco has also added new secondary products—and new possibilities for profit.

It developed this country's first high-purity selenium, and still dominates the market for the strategic metal that goes into almost all electronic units.

It was first to make a copper so pure that no known chemical, spectographic, or physical method can detect impurities.

And its big copper smelter in Garfield, Utah, turns out more sulfuric acid than copper. This output stems from a program to control and harness the acid gases, heavy in sulfur dioxide, released by cooking copper ores. Asarco's sulfuric acid production is now 1,800 tons daily—for fertilizers, atomics, steel, explosives, plastics, and oil processing.

In cadmium, taken from flue dusts and used for, among other things, plating of metals, the company is now the leading supplier. Asarco's huge slag dumps, piled up in 50 years of lead smelting, contribute germanium, already

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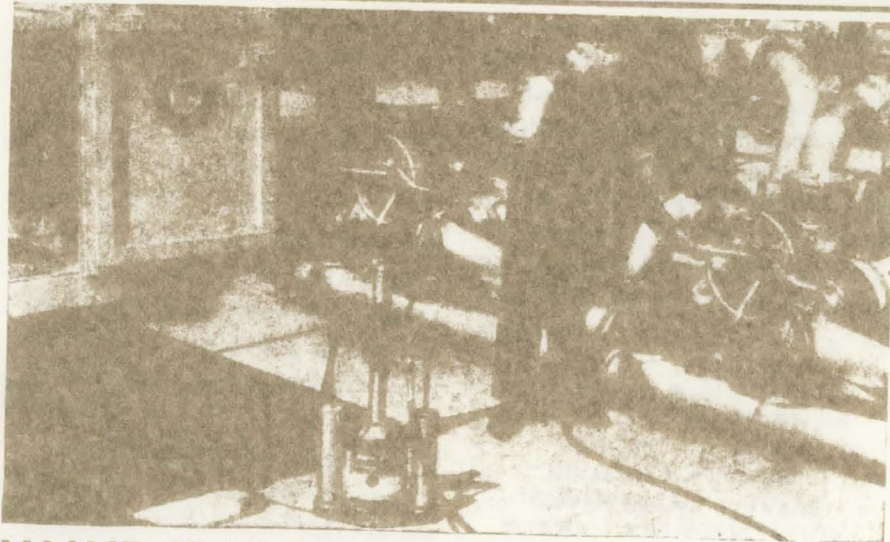
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V. Tories in Finance

Though it's branching out in a number of ways, the company's been able to finance it all without seeking new money. Still conservative in finance, Asarco boasts that it's never sought additional equity capital since its founding (though it has split its stock several times). It has had to borrow substantial amounts from banks only twice in its history—the last time in 1932 at the bottom of the depression.

With all its recent investments, it today still has some \$70-million in cash or government bonds on hand, and no funded debt. It does however, have 500,000 shares of non-callable 7% preferred outstanding.

In fact, says Straus, the main reason Asarco bought into Cerro de Pasco Corp., a copper company with important Peruvian holdings, was because in 1947 it had so much cash laying around. Asarco's 15% holding in Cerro makes it the largest single stockholder. But it's considered purely an investment, and Asarco has no representation on Cerro's board.

• **Control**—Relations with other Asarco affiliates are closer. The entire board of Revere Copper & Brass, with one exception, consists of Revere or Asarco officials. Straus himself is chairman of Revere's executive committee. But, say the American Smelting representatives, they exercise control with a very light hand, concern themselves only with the broadest policy questions—such as Revere's recent move into basic aluminum production as a joint venture with Olin Mathieson Chemical Corp. (BW—Sep. 1'56, p.38).

This step will make Revere integrated in aluminum from basic production through fabrication. Although Asarco itself has integrated mining and processing, it has always resisted taking one more jump into fabrication on its own. It could accomplish this, for example, by merging with Revere—but Straus feels that Revere has flourished mainly because it hasn't been integrated with Asarco. Revere's job is essentially merchandising, he says, and "we're metals men in American Smelting."

American Smelting's current attitude may not be inflexible. "The 7% inter-company dividend tax might change our thinking," Straus suggests, "since it puts a premium on integration, in a way forcing bigness in business."

Straus may concede cheerfully that he's not a merchandiser. It's true that in the basic metals business, Asarco's markets are well lined out. But its Federated Metals Div., with

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VI. Management

Only two years after Straus' 1914 entry into the employ of American Smelting (as a clerk in the auditor's department), he became a director.

"The Guggenheims," he says with a smile, "wanted a stooge on the board, and I was married to a Guggenheim."

His father-in-law, Daniel Guggenheim, was president of the company from 1905 to 1918. Daniel was followed by a brother, Simon Guggenheim, who held the job until 1941—although the Guggenheim family had disposed of most of its Asarco stock by World War I.

Straus succeeded Simon Guggenheim as president. At the same time, Francis H. Brownell, a veteran of the legal department, became chairman and chief executive officer.

Experience in the safety department and then, for 20 years, in the ore department fitted Straus for the top spot. When he steps down next year Kenneth C. Brownell will take Straus' place. The son of Straus' predecessor, he has been with Asarco since 1927, first in the smelters, then in ore purchasing and sales.

Worth Vaughan, executive vice-president, who has climbed through the legal department will become president. And Oscar S. Straus, Roger's son and now vice-president and treasurer, is generally expected to be chairman of the finance committee—the third ranking spot.

• **Family Ties**—The family tradition is strong within the company. It has even been said that AS&R stands for American Sons & Relatives.

Officials concede that it's no deterrent for a job applicant to be the son of an executive. But they insist that the employee must deliver—and that records of departed personnel are full of relatives who didn't. In any case, the board of directors—most of them outsiders—must approve promotion of an executive's son to executive rank himself.

Among the top 30 officials, each has a backstopper or two to step in overnight if necessary. This is the way Straus grooms his own successors.

"I don't run the company," says Straus. "No one man could. It takes at least two men, preferably three."

It's unusual to find all three of Asarco's top men in New York at once. Straus himself spends almost nine months of the year in the field. But whoever is at headquarters can come to decisions without consulting the others. **END**