

LEAD INDUSTRIES ASSOCIATION

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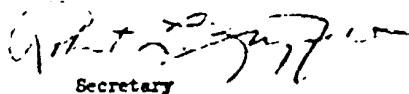
SUBJECT: REPRINT ON LEAD

To Members of the Lead Industries Association:

Enclosed is a reprint of the article on lead from the annual review issue of ENGINEERING AND MINING JOURNAL, February, 1960.

Extra copies are available as long as our supply lasts.

Very truly yours,



Secretary

Enc.



Lead



Robert L. Ziegfeld
Lead Industries Association

THERE WAS a decided improvement in the statistical position of lead in 1959. Consumption increased substantially. U.S. imports were curbed by the first full year of quota operation, and agreement was reached on voluntary production controls throughout the world. As a result, the top-heavy inventories carried at the beginning of the year, particularly by domestic smelters, underwent a major reduction. This improvement took place despite the fact that the effect of production cut-backs abroad was not felt until the year was well under way and that there were sizable increases in imports of manufactured lead products which were not covered by the quotas. A prolonged strike at plants of the largest domestic smelting company and several other lead operations, however, did contribute to limitation of domestic supplies. Even though the market weakened on settlement of the major strike in December, the outlook for 1960 appears to be much more encouraging than at the beginning of 1959.

Supplies. Final figures for 1959 will probably show that lead supplies available to industry in the U.S. were reduced substantially as compared with 1958. Although secondary production increased about 12% to around 450,000 tons, mine production, largely because of strikes, was off from the 60-year low of 1958 to about 250,000 tons. Imports under the quotas were about 350,000 tons, with an additional estimated 60,000 tons entering mainly through baffle for stockpile. Adding a reduction of about 80,000 tons in stocks at primary refineries and deducting exports of 3,000 tons, the total supply of lead in the U.S. was about 1,185,000 tons.

On the other side of the ledger, industrial consumption in 1959 increased more than 10% over 1958, rising to approximately 1,100,000 tons.

Consumers and secondary smelters added about 5,000 tons of lead to their inventories during the year and, with stockpile shipments estimated at 50,000 tons, some 30,000 tons is left unaccounted for. Since 1947 industrial consumption has ranged between a low of 958,000 tons in 1949 and a high of 1,238,000 tons the following year, 1950, and has averaged about 1,135,000 tons. Thus in 1959 consumption was only slightly below the average.

The increase in 1959 consumption compared with 1958 was well distributed over lead's major uses with only cable sheathing showing a substantial decline. Battery consumption increased nearly 60,000 tons and remained the leading consumer by a wide margin. The number of replacement batteries sold hit an all time high of about 27-million, and total batteries sold were second only to 1955 when new car and truck sales were at a record of over 9-million. With new car production in 1960 expected to be substantially higher than

in 1959, and with all new cars using 12-volt batteries as well as a higher

U.S. Lead Supply and Demand

(Short tons)

	1959 estimated	1958
Supply:		
Mine production	250,000	261,377
Secondary production	450,000	401,800
Quota imports ¹		
Ore, recoverable	126,000	202,068
Pigs and bars	222,000	368,452
Other imports (mainly for stockpile):		
Ore, recoverable	10,000	
Pigs and bars	50,000	60,000
Total	1,123,000	1,239,717
Changes in stocks at primary smelters and refineries	90,000 (decr.)	149,138 (incr.)
Total	1,183,000	1,090,579
Exports	3,000	1,359
Total available	1,185,000	1,089,204
Demand:		
Industrial consumption	1,100,000	986,387
Est. stockpile shipments	50,000	85,000
Consumers and secondary smelter stocks	5,000	6,410
Unaccounted for	30,000	24,223
Total	1,185,000	1,099,200

	1959 estimated	1958
White lead	22,700	13,600
Red lead and litharge	82,000	64,900
Storage batteries	370,000	312,700
Cable	65,000	75,000
Building	91,000	48,100
Tetraethyl lead	162,900	159,600
Ammunition	45,000	40,200
Foil	3,800	4,600
Bearing metal	22,700	19,000
Solder	70,000	59,700
Type metal	26,300	26,700
Calking lead	80,000	70,800
Other uses	109,500	91,700
Total	1,100,000	986,400

U.S. Lead Use*

(Short tons)

	1959 estimated	1958
White lead	22,700	13,600
Red lead and litharge	82,000	64,900
Storage batteries	370,000	312,700
Cable	65,000	75,000
Building	91,000	48,100
Tetraethyl lead	162,900	159,600
Ammunition	45,000	40,200
Foil	3,800	4,600
Bearing metal	22,700	19,000
Solder	70,000	59,700
Type metal	26,300	26,700
Calking lead	80,000	70,800
Other uses	109,500	91,700
Total	1,100,000	986,400

*Based on U. S. Bureau of Mines statistics.

¹American Bureau of Metal Statistics, U. S. Bureau of Mines, and Lead Industries Association.

²Import quotas established Oct. 1, 1958.

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percentage of replacements being these heavier batteries, lead consumption by this industry should be substantially larger in 1960, perhaps reaching 385,000 tons.

The quotas on imports which were established by the President in the fall of 1958 at 80% of the average for the years 1953 through 1957 were in operation for the entire year and were largely responsible for the reduction of some 150,000 tons in imports. At this time official statements indicate little likelihood of any change in quotas on lead ores or pig lead. However, since manufactured lead products, like lead oxide, pipe and sheet, are not controlled by quotas, there appears to have been a marked increase in imports of these products estimated at some 20,000 tons. Both domestic lead producers and manufacturers have made strong appeals to Washington to close this loophole, claiming damage to both segments of the industry.

Meanwhile, at Senate instigation, the Tariff Commission initiated a further study of the lead-zinc situation on which it will report early in 1960. It also rejected a request of six lead and zinc smelting companies for widening the scope of the hearings to include a report to the Administration on the grounds that the foregoing study was already being made.

Late in 1958 two international meetings of lead and zinc producing countries, sponsored by the U.N., were held to appraise the situation and determine what, if any, international action might be taken toward rectifying the world over-supply. These culminated in a third such meeting in New York in April 1959, at which voluntary production curtailment was agreed upon. Another meeting is to be held in Geneva in late January 1960 for reappraisal of the situation at that time. Since the zinc market has been very strong recently, the question arises whether increased production of zinc might occur with a consequent possible increase in lead production.

Prices. An accompanying table shows the changes in the New York price for lead throughout 1959. After the imposition of quotas in the last quarter of 1958, the lead price had risen from 11c in September to 13c, where it opened 1959. Starting in January the price worked steadily lower, again reaching 11c, reflecting continued overproduction and not too heavy demand, along with immense inventories in the hands of refiners resulting in hand-to-mouth buying. After the last international conference in the late spring, the price again started

Lead Price Changes

(Cents per lb N. Y.)

Oct. 14, 1958	13 00
Jan. 22, 1959	12 00
Feb. 11	11 50
Feb. 20	11 00
Mar. 6	11 50
Apr. 1	11 00
Apr. 20	11 50
May 8	12 00
Aug. 24	13 00
Dec. 14	12 50
Dec. 21	12 00

upward and reached 13c in August immediately after the largest domestic smelter went on strike. Upon settlement of the strike in December, the price again suffered two 5c breaks and closed the year at 12c. Late December buying at this price was improved, however.

Because of the insulation provided by quotas, the U.S. price and London price showed a greater spread throughout most of the year than the normal tariff and shipping costs. At the year end moderate strength in the London market and the reduction in the New York price brought the two closer together.

Summary of 1959. Although the lead price at the year end was somewhat lower than a year earlier, there are a number of encouraging factors. Manufacturers' inventories are comparatively low, and producers' stocks in the U.S. were reduced drastically. Stocks in the hands of producers abroad increased, but not nearly as much as domestic stocks were reduced, and production cutbacks abroad began to be felt late in the year. Actual industrial consumption has been good throughout the Free World. And during 1959 the intensive industry-wide research and market development programs, initiated in 1958, went into high gear. The industry, working together throughout the Free World, is showing a magnificent determination to put and keep its house in order.

Outlook. A further increase in lead consumption to perhaps 1,150,000 tons in 1960 is expected. Assuming continuation of quotas, that should result in a further reduction of producers' stocks since manufacturers are not in a position to draw much further from their own.

As already mentioned, storage batteries can look forward to another good year. The second largest use, tetraethyl lead, should increase moderately as it did in 1959. It is not expected that cable sheathing will decline further. As a matter of fact a

research project, conducted jointly by the Lead Industries Association and a cable press manufacturer, was concluded in 1959 and resulted in a press of such design that it can continuously extrude cable sheathing of any of the lead alloys commonly used. This should place lead in a better competitive position because of lower costs, better quality, and ability to use a variety of insulating materials.

A generally higher level of industrial activity should result in greater use of such lead products as solder and bearing metals. New lead compounds or materials containing them show promise. Synthetic pearlescent finishes made of lead compounds are finding new applications daily. Among the latest is their use in plastic floor coverings and wallpaper, and they are also being considered for finishes on automobiles, where they have already been used on custom models, and on household appliances. A new steel chalk board is on the market having a lead porcelain enamel surface in several colors. Lead glazed brick and lead porcelain enameled aluminum are both gaining favor as building materials.

The fields of vibration and sound attenuation are receiving much attention by engineers and architects. Lead has long been used in a limited way to reduce the transmission of sound and vibration, but its great potentialities are just now becoming more widely recognized. For example, during the past year it was used for the first time in connection with air conditioning equipment. Research and market development programs now under way are expected to exploit lead's possibilities to the fullest.

Another potential new field of application is as nonsacrificial anodes in impressed current systems for the protection of ships, bridges, piers and other structures from destructive corrosion. A number of such installations employing lead-silver alloy anodes were made in 1959, and several technical publications on this subject appeared.

Use of lead as atomic shielding is bound to show significant growth. In 1959 the first atomic powered commercial ship, the Savannah, was launched, and with it over 500 tons of lead shielding went to sea.

It is impossible in this space to give more than a bare suggestion of how modern technology is affecting the use of lead. Some developments are more or less far in the future, but some, like those mentioned, are close at hand. While the year 1960 looks encouraging to the lead industry and should be a relatively prosperous one, the more distant future looks even more enticing. END