

**UNITED STATES TARIFF COMMISSION**

**LEAD AND ZINC**

**Report to the President (No. TEA-IR-8-63)  
Under Section 351(d)(1) of the  
Trade Expansion Act of 1962**



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(TC28047)

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REPORT TO THE PRESIDENT

U.S. Tariff Commission,  
October 1, 1963.

To the President:

Introduction

Following an escape-clause investigation by the Tariff Commission under section 7 of the Trade Agreements Extension Act of 1951, the President, by proclamation dated September 22, 1958, imposed absolute import quotas on unmanufactured lead and zinc, effective October 1, 1958. <sup>1/</sup> Under the terms of the proclamation, U.S. import duties on unmanufactured lead and zinc were not changed, but the quantity of commercial imports of both of these products that could be entered annually was limited to 80 percent of the average annual commercial imports during the 5-year period 1953-57.

Section 351(d)(1) of the Trade Expansion Act of 1962 (76 Stat. 900), provides that--

So long as any increase in, or imposition of, any duty or other import restriction pursuant to this section or pursuant to section 7 of the Trade Agreements Extension Act of 1951 remains in effect, the Tariff Commission shall keep under review developments with respect to the industry concerned, and shall make annual reports to the President concerning such developments.

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<sup>1/</sup> Proclamation No. 3257, 3 CFR, 1958 Supp., p. 39.

Although this is the first report made on lead and zinc under the aforementioned provision, it is similar to and supplements three earlier reports on lead and zinc submitted to the President under Executive Order 10401; <sup>1/</sup> this report deals principally with developments that have occurred since those described in the Commission's report to the President in October 1962. <sup>2/</sup> Additional information relating to lead and zinc is contained in the Commission's 1958 report on its escape-clause investigation, <sup>3/</sup> the aforementioned annual reports, and comprehensive reports to the Congress in 1960 and 1962 made under section 332 of the Tariff Act of 1930 in response to resolutions of the Senate. <sup>4/</sup>

The Commission obtained the information used in this report from its files, from trade associations, from other Government agencies and the United Nations, and through consultations with industry representatives and importers.

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<sup>1/</sup> The first such report on lead and zinc was submitted to the President under Executive Order 10401 on Sept. 30, 1960; subsequent reports to the President were made in October of 1961 and 1962.

<sup>2/</sup> U.S. Tariff Commission, Lead and Zinc; Report to the President (1962) Under Executive Order 10401, TC Publication 71, 1962 (processed).

<sup>3/</sup> U.S. Tariff Commission, Lead and Zinc; Report to the President on Escape-Clause Investigation No. 65 . . . , 1958 (processed).

<sup>4/</sup> U.S. Tariff Commission, Lead and Zinc; Report to the Congress on Investigation No. 332-26 (Supplemental) Under Section 332 of the Tariff Act of 1930 Made Pursuant to Senate Resolution 162, 86th Congress . . . , 1960 (processed), and Lead and Zinc; Report to the Congress on Investigation No. 332-26 (Supplemental 2) Under Section 332 of the Tariff Act of 1930 Made Pursuant to Senate Resolution 206, 87th Congress . . . , TC Publication 58, 1962 (processed).

### Lead and Zinc Articles Covered

This report, like the previous annual reports on lead and zinc, is confined to unmanufactured lead and zinc articles of the types that are now subject to import quotas. These articles include lead-bearing ores and zinc-bearing ores and other materials (such as matte, speiss, flue dust, residues of smelters and refineries, dross, and skimmings) from which metals or chemical compounds are obtained; the most important of these articles are lead or zinc concentrates. Unmanufactured lead articles also include lead bullion (a product of smelters which needs refining), lead waste and scrap, and unwrought unalloyed lead and antimonial lead. Unmanufactured zinc articles include zinc waste and scrap and unwrought unalloyed zinc.

### U.S. Customs Treatment

The new Tariff Schedules of the United States (TSUS), which went into effect on August 31, 1963, specify the rates of duty applicable to the lead and zinc articles here considered. The rates of duty by TSUS item number are enumerated in table 1 in the appendix. The articles classifiable under each item, with certain exceptions, are also subject to absolute import quotas, which have been in effect since October 1, 1958. These are summarized in table 2. <sup>1/</sup>

The effective rates of duty provided for in the new Tariff Schedules with respect to the articles here considered remain virtually unchanged, for they generally reflect tariff treatment before the new schedules went into effect. Under the new schedules, the rate of duty

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<sup>1/</sup> The quotas are specified in part 2 of the appendix to the Tariff Schedules.



(0.67 cent per pound) is imposed on the zinc content after certain allowable deductions, with the net result that on a given importation the total duty assessed by the new method is approximately the same as that under the old. <sup>1/</sup> Formerly, the rate of duty on the zinc content of zinc-bearing ores (0.6 cent per pound) was imposed on the total zinc content without any deductions for processing losses.

The absolute quarterly quotas on commercial imports <sup>2/</sup> of unmanufactured lead and zinc, which were established by presidential proclamation effective October 1, 1958, are also reflected, without significant change, in the Tariff Schedules (in part 2 of the appendix). The individual import quotas for lead or zinc from each specified foreign country are continued unchanged. <sup>3/</sup> The import

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<sup>1/</sup> The Tariff Schedules (in headnotes 2 to 6, inclusive, of part 1 of schedule 6) provide for the determination, on a uniform and simplified basis, of the dutiable copper, lead, and zinc content of ores and other materials. Specific duties are imposed on the copper, lead, and zinc contents of the ores and other materials (as determined by chemical analysis) after certain allowable deductions. The allowable deductions are specified according to the type of plant (copper plant, lead plant, zinc plant, or other plant) at which the materials are initially treated.

<sup>2/</sup> "Commercial imports" in this report refers to imports for consumption exclusive of imports for U.S. Government account and exclusive of imports free of duty under bond for smelting, refining, and export.

<sup>3/</sup> The quarterly lead quota under TSUS for lead-bearing ores and materials from Australia is 570 tons larger than that for lead-bearing ores, flue dust, and mattes of all kinds as provided for in Presidential Proclamation No. 3257; also, the quarterly lead quota under TSUS for unwrought lead and lead waste and scrap from Australia is 570 tons smaller than the quota provided for Australia in Presidential Proclamation No. 3257 for "lead bullion or base bullion, lead in pigs and bars, lead dross, \* \* \*". This difference of 570 tons (which represents 80 percent of the lead content of lead dross imported from Australia during the base period 1953-57) results from the classification of lead dross under TSUS among "other materials" included with lead-bearing ores.

quotas on zinc-bearing ores and materials to be initially treated at zinc plants are based on the total zinc content of such ores and materials, rather than, as for duty purposes, on the zinc content less allowable deductions. The great bulk of the imports of zinc-bearing materials are zinc concentrates initially treated at zinc plants. The use of total zinc content for quota purposes, as previously, avoids an increase in the quotas for such materials.

#### World Production and Consumption

World mine production of both lead and zinc in 1962 was the highest on record. The United States accounted for about 9 percent of the world output of lead and for 13 percent of the output of zinc (table 15).

World smelter production of both primary lead and zinc metal in 1962 was also the highest on record. Production of primary metal does not include metal recovered from scrap; it includes metal produced from ores and other materials such as lead bullion. The United States in 1962 accounted for 14 percent of world production of the lead metal and for 24 percent of the zinc metal.

World consumption of primary lead and zinc metal was also higher in 1962 than in any previous year. The available data on world consumption do not include data for the consumption of either secondary metal derived from scrap, or lead and zinc in ores consumed directly in the manufacture of chemical compounds. In 1962, about 26 percent of world consumption of primary lead metal and about 28 percent of the consumption of primary zinc metal was consumed in the United States.

The United States probably accounts for at least as high percentages of the world consumption of lead and zinc in all forms.

#### U.S. Industrial Consumption

With U.S. supplies of unmanufactured lead and zinc limited by the quotas on commercial imports, the U.S. market prices of these metals (and hence the welfare of the domestic lead and zinc industry) are greatly affected by changes in the U.S. consumption of these metals. <sup>1/</sup> This sensitivity of prices to changes in the level of consumption has been especially manifest since early 1958, when the U.S. Government discontinued purchases of lead and zinc from newly mined domestic ores for stockpiling. Official statistics on industrial consumption of lead and zinc in the United States (as well as U.S. production, commercial imports, and domestic exports) in recent years and the annual averages for 1953-57, the period on which the import quotas are based, are summarized in table 3.

#### Lead

U.S. consumption of lead (in all forms) in 1962, which amounted to 1,109,600 tons, was the largest in any year since the import quotas were imposed; it exceeded the consumption in 1961 by 8 percent. Nevertheless, consumption in 1962 was about 5 percent smaller than the average annual consumption during 1953-57. A higher rate of consumption, which began toward the end of 1962, was maintained during the first half of 1963. Thus, the level of lead consumption during the first

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<sup>1/</sup> The term "U.S. industrial consumption" as used throughout this report refers to the quantities of lead or zinc in all forms put into process by industrial consumers, as reported by them to the U.S. Bureau of Mines.

half of 1963 exceeded that during the corresponding period of 1962. If the higher rate of consumption is maintained throughout 1963, the consumption in that year will almost equal the average annual consumption during 1953-57. Increased quantities of lead are being consumed for automobile batteries and antiknock gasoline compounds--uses that now account for more than half of total consumption.

### Zinc

The U.S. consumption of zinc (in all forms) in 1962, which amounted to 1,346,300 tons, was the largest in any year since 1955. It was 12 percent larger than in 1961 and exceeded slightly the annual average consumption in 1953-57. The consumption of zinc in the first half of 1963 was almost the same as that in the corresponding period in 1962. The larger consumption of zinc during 1962 is attributed principally to the increased use of zinc for die castings in automobiles and in galvanized steel sheets. More than half the zinc consumed in the United States is used in die castings and for galvanizing.

### U.S. Production

The production of lead and zinc derived from ores or concentrates is termed "primary" production, and that from scrap (old or new) is termed "secondary" production. Refined unalloyed lead and zinc metals are produced principally by a small number of primary smelters or refineries that process principally ores or concentrates (or their intermediate products, such as base bullion). Lead and zinc alloys (such as antimonial lead) and lead- or zinc-containing alloys (such as brass) valued chiefly for their content of other metals are produced

principally by a large number of secondary smelters that process non-ferrous metal scrap. Secondary zinc smelters also produce substantial quantities of zinc in the form of zinc dust and in chemical compounds. Larger quantities of zinc in chemical compounds (such as zinc oxide) are also produced directly from zinc ores or concentrates in separate plants.

Primary output of lead and zinc in the United States (which is best indicated in this report by data on the recoverable lead and zinc content of ores or concentrates produced by mines) and secondary lead and zinc production are shown in tables 4 (for lead) and 5 (for zinc). <sup>1/</sup> U.S. production of secondary lead has for many years accounted for the largest part of the total production of lead; in 1962 about two-thirds of the total production was from secondary sources. The major part of U.S. zinc production is from primary sources--in 1962, about two-thirds of the total.

Most of the cost of producing refined lead and zinc in the United States from domestic ores (including all stages of production--mining and concentrating the ores and subsequent smelting and refining) is

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<sup>1/</sup> Data on primary and secondary production of refined lead and antimonial lead by U.S. lead smelters and refineries in recent years are shown in table 6; similar data on primary and secondary production of slab zinc by U.S. zinc smelters are shown in table 7. The differences between the quantities of recoverable lead or zinc produced by U.S. mines as shown in tables 6 and 7, and the lead or zinc contents of refined lead (including antimonial lead) and slab zinc, respectively, produced from domestic ores by primary smelters or refineries is accounted for principally by--

- (a) Time lag between mine production of ores and the production of refined metal therefrom;
- (b) Changes in smelter and refinery stocks of ores and materials in process; and
- (c) Direct consumption of ores, especially of zinc ores, in the manufacture of chemical compounds at other plants.

incurred in the mining and concentrating operations. The mining (including the ore-concentrating) segment of the industries also accounts for the largest part of the total employment. The application for the escape-clause investigation which led to the current import quota restrictions on lead and zinc was filed primarily on behalf of the lead- and zinc-mining industry. Hence an important part of this review examines recent changes in U.S. mine production of lead and zinc.

#### Mine output of lead

U.S. mine production of recoverable lead in 1962, which amounted to 237,000 tons, was the lowest for any year since 1900; it was 9 percent smaller than that in 1961 (261,900 tons), and about 30 percent smaller than the annual average for 1953-57 (339,400 tons). The mine production of lead in the first half of 1963, the last period for which data are available, was about 22 percent smaller than that during the corresponding period in 1962. The low level of production in 1962 is attributable partly to the low market prices of lead during that year (the average for the year, 9.63 cents per pound, was the lowest for any year since 1946); the low output in 1962 and in the first half of 1963 also reflects the shutdown of the lead mines of the St. Joseph Lead Co. in southeastern Missouri, owing to a labor dispute. The mines of this large lead producer were shut down for a period of 8 months-- from the beginning of August 1962 to the end of March 1963. The loss of production attributable to the shutdown (as indicated by the monthly production before and after the shutdown) is estimated at about 71,000 tons of recoverable lead (about 44,000 tons in 1962 and about 27,000 tons in 1963).

Lead is regularly mined in 17 States. At some mines it is an important constituent of ores mined chiefly for zinc or other metals. Three of the largest producing States account for three-fourths to four-fifths of the U.S. production. In 1962 these three States produced 77 percent of the total as follows: Idaho (84,000 tons), Missouri (61,000 tons), and Utah (38,200 tons). Compared with the respective annual average outputs for 1953-57, the production in 1962 in Idaho was 22 percent larger, that in Missouri (partly because of the strike) was 51 percent smaller, and that in Utah was 17 percent smaller.

#### Mine output of zinc

The trend of U.S. mine production of recoverable zinc, unlike that of lead, has been upward since 1958 (table 5). The production in 1962 (505,600 tons), the largest in any year since 1957, was about 9 percent larger than in 1961 (464,400 tons) but still about 3 percent smaller than the annual average for 1953-57 (521,900 tons). The mine production of zinc in the first half of 1963 was about 10 percent larger than that in the corresponding period of 1962.

Zinc is regularly mined in 19 States. It is more widely distributed throughout the country and less concentrated in a few large operations than lead mining. In 1962 the following 10 largest producing States accounted for about 73 percent of the total output: Tennessee (71,000 tons), Idaho (63,000 tons), Colorado (43,000 tons), Montana (38,800 tons), Utah (35,100 tons), Arizona (33,200 tons), Illinois (27,000 tons), Washington (21,600 tons), New Mexico (21,400 tons), and Wisconsin (13,300 tons). The production in 1962 was

larger than the annual average for 1953-57 in 6 of these States, namely, Tennessee (up 67 percent), Idaho (up 7 percent), Colorado (up 10 percent), Arizona (up 27 percent), Illinois (up 39 percent), and New Mexico (up 11 percent). <sup>1/</sup> Production in 1962 was lower than the average for 1953-57 for the other 4 of the 10 States, as follows: Montana (down 41 percent), Utah (down about 8 percent), Washington (down 20 percent), and Wisconsin (down 31 percent). Mine production of zinc in 1962 was also much smaller than the average for 1953-57 in Oklahoma (down 67 percent) and in Kansas (down 79 percent); these States were among the 10 largest producers in 1953-57.

U.S. Government assistance to small producers

In comparing the level of mine production in 1962 and 1963 with that in 1953-57, it should be noted that in the earlier period substantial quantities of lead and zinc metal from newly mined domestic ores were acquired by the U.S. Government for stockpiling. Such a

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<sup>1/</sup> The New Jersey Zinc Co. informed the Tariff Commission that it expects to resume production of zinc concentrates from its zinc mine and mill at Hanover, N. Mex., in the first week of October 1963. The company has been preparing the mine and mill for production and has been assembling the work force since Sept. 1, 1963. At the beginning of the year, the Commission conducted an investigation under sec. 301(c)(2) of the Trade Expansion Act of 1962 in response to a petition from workers at this mine for determination of eligibility to apply for adjustment assistance. In its report to the President in March 1963 the Commission unanimously found that unmanufactured zinc was not, as a result in major part of concessions granted under trade agreements, being imported in such increased quantities as to cause the unemployment of a significant number or proportion of workers at the zinc mine and mill at Hanover, N. Mex. Production was discontinued at this property on Dec. 1, 1962, when the market price of zinc was 11.5 cents per pound; the price increased subsequently and has been 12.5 cents since July 30, 1963. It is expected that the majority of the workers who were laid off in December 1962, when production was discontinued, will be reemployed at the mine and mill in October, 1963.



stimulus to domestic production has been lacking in recent years.

Although subsidy payments, termed "stabilization payments," to small producers have been made under the Lead-Zinc Small Producers Stabilization Act of October 3, 1961 (75 Stat. 766), such payments applied to 3 percent or less of the U.S. mine output of lead and zinc in 1962 and the first half of 1963, as indicated below: <sup>1/</sup>

Item	1962	January-June 1963
<u>Lead</u>		
Total mine output of recoverable lead-----short tons--:	237,000	109,900
Production on which stabilization payments were made-----short tons--:	8,241	3,170
Amount of stabilization payments-----:	\$602,010	\$192,219
<u>Zinc</u>		
Total mine output of recoverable zinc-----short tons--:	505,600	272,300
Production on which stabilization payments were made-----short tons--:	12,909	6,452
Amount of stabilization payments-----:	\$410,571	\$212,903

<sup>1/</sup> Data supplied by the Office of Minerals Exploration, U.S. Department of the Interior. The act provides for stabilization payments to small domestic producers of newly mined lead and zinc. The payments are based on 75 percent of the difference between 14.5 cents per pound and the average market price of lead and 55 percent of the difference between 14.5 cents per pound and the average price of zinc, calculated on a monthly basis. In order to qualify as a "small domestic producer" the applicant must show that he has not produced or sold more than 3,000 tons of lead and zinc combined "during any twelve-month period between January 1, 1956, and the first day of the period for which he seeks payments under this Act." The act was amended by Public Law 88-75, approved July 25, 1963, so as to require that the principal product or products of producers must be lead, zinc, or both. This proviso excludes from the benefits of the law producers of small quantities of lead or zinc incidental to their more valuable production of other metals or minerals.

## Stocks of Lead and Zinc

Lead

U.S. producers' stocks of lead in all forms at primary smelters and refineries declined from 312,400 tons at the end of 1961 to 236,500 tons at the end of 1962, and to 194,500 tons at the end of July 1963, the latest date for which data are available (table 8). Such stocks, however, were still moderately higher than the level of yearend stocks during 1953-57, which averaged 183,200 tons. Most of the recent decline in producers' inventories occurred in stocks of refined lead and antimonial lead (forms accounting for about 60 percent of total stocks). This decline reflects in part the reduced production of refined lead by the St. Joseph Lead Co.'s smelting and refining plant in Missouri, for which the supplies of lead concentrates were reduced as a result of the aforementioned shutdown of its lead mines. <sup>1/</sup>

According to the Office of Emergency Planning (OEP), U.S. Government inventories of lead at the end of June 1963 amounted to about 1,383,000 tons, <sup>2/</sup> compared with 1,302,000 tons at the end of 1961; the total at the end of June includes additional lead acquired since 1961 through the barter program.

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<sup>1/</sup> According to data from the International Lead and Zinc Study Group of the United Nations, producers' stocks of refined lead in the free world outside the United States have declined substantially since 1961; in the period from January 1962 to the end of June 1963 (the latest period for which comparable data are available) these stocks declined by 41 percent.

<sup>2/</sup> According to a press release by the Office of Emergency Planning, dated July 11, 1963, the new stockpile objectives for the metals lead and zinc are zero. These objectives reflect "the approximate calculated emergency deficits for the materials for conventional wars and do not have any arbitrary adjustments for possible increased requirements for other types of emergency." The OEP is also making studies to determine stockpile needs to meet the requirements of general nuclear war and reconstruction. Such objectives have not previously been developed.

Zinc

Producers' stocks of slab zinc at primary and secondary smelters and refineries in the United States have declined since 1960 (table 9). Yearend stocks during 1953-57 averaged 116,300 tons. Stocks declined from 190,800 tons at the end of 1960 to 151,200 tons at the end of 1961, and to 149,600 tons at the end of 1962. Producers' stocks of slab zinc at the end of August 1963, the latest date for which data are available, amounted to about 64,600 tons. Their stocks of Special High Grade zinc at the end of August 1963 were at an unusually low level--74 percent below those at the end of August 1962. The sharp reduction in the stocks reflects a strong demand for this grade of zinc, principally for use in die castings for automobiles. <sup>1/</sup>

The stocks of zinc in domestic and foreign ores and other zinciferous materials at zinc smelters in the United States have also declined since 1960. This decline is indicated by indexes of such stocks from data compiled by the American Zinc Institute (table 10). Although data on the actual quantities of zinc held in these materials are confidential, it is apparent that the total amount of zinc in such stocks at the end of July 1963 was about 23 percent smaller than the average yearend stocks during 1953-57. Zinc in concentrates comprises more than half of all zinc in stocks at U.S. zinc smelters and more than half of these stocks of zinc concentrates were imported. Since quotas

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<sup>1/</sup> According to data from the International Lead and Zinc Study Group of the United Nations, producers' stocks of refined zinc metal in the free world outside the United States has declined since 1961. In the period since March 1963, however, unlike the producers' stocks of lead, the producers' stocks of zinc metal have been increasing; by the end of June such stocks were 48 percent larger than at the end of March 1963.

went into effect, a substantial part of the stocks of foreign concentrates have been held in bond by smelters; such accumulations of stocks in bond at the beginning of each quarter provide the respective owners with increased power to enter zinc under each new quota. Stocks of foreign zinc concentrates held by smelters (including those held in bond) at the end of June 1963 were about 13 percent smaller than those held at the end of June 1962; stocks of domestic zinc concentrates declined by about 9 percent between those dates.

U.S. Government inventories of zinc at the end of June 1963, according to the Office of Emergency Planning, amounted to a total of 1,581,000 tons, the same as at the end of 1961. <sup>1/</sup>

#### U.S. Commercial Imports

Data on commercial imports of unmanufactured lead and zinc in recent years, as compiled by the U.S. Treasury Department for each of the categories for which quotas were established, are summarized in tables 11 (for lead) and 12 (for zinc). The import quotas have not been quite filled in any of the years since they were established in October 1958. <sup>2/</sup> The quotas permitted commercial imports of lead and zinc up to 80 percent of the average quantity of such imports in the

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<sup>1/</sup> See also footnote (2) on p. 13.

<sup>2/</sup> As indicated in table 2, separate import quotas have been established on a quarterly basis for unmanufactured lead and for unmanufactured zinc. The quotas, moreover, are subdivided into (1) lead- or zinc-bearing ores or other materials, and (2) lead or zinc in metallic forms, including scrap. Each of these quarterly quotas is further subdivided by principal country of origin. For technical and other reasons, it is virtually impossible for all of these individual quotas to be entirely filled in each of the four quarters of any given year.

base period, 1953-57. In 1959-62, annual imports of lead ranged from 77 to 80 percent of the base-period average, and annual imports of zinc ranged from 74 to 79 percent of such average.

### Lead

Commercial imports of unmanufactured lead in 1962 contained a total of 340,200 tons of lead. Almost two-thirds of this amount entered in the form of metal (predominantly refined unalloyed lead), and the bulk of the remainder was contained in lead concentrates. The commercial imports of unmanufactured lead in 1962 were equal to 96 percent of the quantities permitted under quotas for the year. Quotas were not filled in that year for lead metal from Australia, Peru, and the "all other" group of countries.

Commercial imports of unmanufactured lead in the first half of 1963 (172,600 tons) were equal to 97 percent of the quantity permitted under quotas; a substantial part of the lead-ore quota for Canada remained unfilled during that period. <sup>1/</sup>

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<sup>1/</sup> A large part of the lead-ore quota, 22.5 percent of the total, is allocated to the Union of South Africa. All of the lead ore imported from that country comes from the Tsumeb mine and is smelted at the El Paso, Tex., smelter of the American Smelting and Refining Co. (ASR Co.). A large lead smelter is under construction at the Tsumeb mine, and it is expected to begin production of lead metal in October 1963, using the ores from that mine. The likelihood that shipments of lead ores from the Tsumeb mine to the El Paso smelter would be discontinued with the completion of the South African smelter aroused great concern among smelter workers and others because the ASR Co. indicated it would be forced, on account of an insufficient supply of lead concentrates, to close down one of its three lead smelters located at El Paso, Helena (Mont.), and Selby (Calif.). In June 1963, however, arrangements were completed whereby the supply of lead concentrates from the Tsumeb mine for the El Paso smelter will continue for at least a year. This has been made possible, despite the operation of the new smelter at Tsumeb, by an increased rate of production, at least temporarily, at the Tsumeb mine.

Commercial imports of unmanufactured lead were equal to 31 percent of industrial consumption of such metal in 1962 and 30 percent in January-June 1963, compared with 38 percent in 1953-57 (table 3). The ratios for 1962 and the first half of 1963 were lower than those for any of the other years under import quota restrictions (1959-61), and reflect the recently increased consumption of lead.

### Zinc

Commercial imports of unmanufactured zinc (in terms of the zinc content of zinc-bearing ores and the gross weight of other materials and refined unalloyed metal) amounted to 510,100 tons in 1962. Nearly 74 percent of this total consisted of zinc in concentrates and the bulk of the remainder consisted of refined zinc metal. Commercial imports of unmanufactured zinc in 1962 were equal to 98 percent of the total quantity permitted under quotas, primarily because the quota for zinc metal from Italy was only about 8 percent filled. Annual imports of zinc metal from Italy have been declining since 1959, while that country's consumption of the metal has increased sharply.

Commercial imports of unmanufactured zinc in the first half of 1963 (254,600 tons) were equal to about 98 percent of the amount permitted under quotas; imports of zinc metal from Italy during this period were nil.

Commercial imports of unmanufactured zinc were equal to 38 percent of U.S. consumption of zinc in 1962 and 37 percent in January-June 1963 (compared with 50 percent in 1953-57); these ratios for zinc (like those for lead for the same periods) are lower than those for any of the

other years during which import quotas were in effect (1959-61), although the annual consumption of zinc in those years was lower.

#### U.S. Exports

Exports of both unmanufactured lead and zinc have been small (table 3). Exports of unmanufactured zinc have exceeded those of unmanufactured lead, and have consisted largely of metal produced from materials imported free of duty under bond for smelting, refining, and export. Imports entered for this purpose are not restricted by quotas.

#### Market Prices

##### U.S. market prices

The U.S. market price of lead (Common grade, New York) averaged 9.6 cents per pound in 1962 (table 4). This was the lowest average for any year since 1946; it was 11 percent lower than the average for 1961 and about a third lower than the average for 1953-57, which was 14.7 cents per pound. The price rose to 10 cents on November 5, 1962, and thereafter, in six additional increments, to 11.75 cents on Sept. 17, 1963 <sup>1/</sup> (table 13).

The recent increases in the price of lead are attributable partly to reduced mine production of lead owing to labor disputes in Missouri and partly to the increased demand for lead, especially in the last quarter of 1962 and the first three quarters of 1963. The labor difficulties resulted not only in curtailed production of refined lead, but also in reduced stocks of this metal.

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<sup>1/</sup> The price change was initiated on Sept. 16, but most sales of lead by domestic producers were not concluded at the new price until the next day.

The U.S. market price of zinc (Prime Western grade, f.o.b. East St. Louis) averaged 11.6 cents per pound in 1962 (table 5); this price was slightly higher than the average for 1961 (11.5 cents) and slightly lower than the average in 1953-57 (11.7 cents). The price of zinc rose to 12 cents a pound on July 2, 1963, and to 12.5 cents on July 30, 1963 (table 14). <sup>1/</sup> The recent increases in the price of zinc reflect a strong demand for all grades of zinc both in the United States and in foreign countries. As previously noted, U.S. producers' stocks of slab zinc have been substantially reduced in recent months.

#### Margin between U.S. and London market prices

Lead and zinc are internationally traded commodities, the prices of which are greatly influenced by worldwide supply-demand factors. Although the market prices of these metals in individual countries differ somewhat owing to transfer charges, import restrictions, and other factors, their general long-term trends are similar. Although the prices on the London Metal Exchange (LME) are generally somewhat lower than those in Western Europe, price changes on the LME are indicative of price changes outside the United States. Monthly averages of the prices of lead and zinc in the United States and on the London Metal Exchange since 1958 are shown in tables 13 (for lead) and 14 (for zinc).

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<sup>1/</sup> U.S. producers' selling prices of the premium grades of zinc have also become firmer at higher levels in recent months. Since July 25, 1963, price premiums have been established for Special High Grade and High Grade zinc (both sold on a delivered basis) at 1 cent per pound and 0.85 cent per pound, respectively, over the price of the Prime Western grade, East St. Louis.



Throughout the period since 1958, during which U.S. import quotas have been in effect, the average spread between the New York and London prices for each of the metals has exceeded the U.S. import duty plus the cost of transporting and insuring the metal from London to New York City. In some months the spread was substantial. In recent months such costs plus duty have amounted to nearly 2 cents per pound for lead and to nearly 1.6 cents per pound for zinc. The average New York price of lead exceeded the average London price by 2.6 cents per pound in 1962 and by 3.2 cents per pound during the first 8 months of 1963, the last period for which data are available (table 13). The average New York price of zinc exceeded the average London price by 3.7 cents in 1962 and by 3.1 cents in the first 8 months of 1963 (table 14). The spread between the New York and London prices was larger in the period September 1961 through August 1963 than in any other period since U.S. import quotas went into effect.

#### The Lead and Zinc Study Group

The International Lead and Zinc Study Group, under the auspices of the United Nations, met in Geneva in October 1962. The Group concluded that free world demand for lead would exceed new supplies in 1962 by about 75,000 tons, whereas there were surpluses of more than

100,000 tons in both 1960 and 1961. <sup>1/</sup> With respect to zinc in the free world in 1962, the Study Group indicated the likelihood of a small surplus of new supplies over demand.

The Study Group did not consider at its October 1962 meeting any proposals for curtailing either lead or zinc production in 1963. However, a Special Working Group, representing 14 countries, met in Geneva in March 1963 to consider possible forms of intergovernmental arrangements or agreements to establish "a reasonable balance between supply and demand for lead and zinc," and to attain five other objectives, namely:

"The avoidance of excessive price fluctuations; the establishment of conditions of which the price of each metal while low enough to encourage the growth of consumption offers a return adequate to bring out needed supplies; the promotion of the wider use of lead and zinc; the encouragement of the optimum development on sound economic lines of the lead and zinc resources of the world; and the promotion of conditions in which barriers to international trade in lead and zinc could be progressively reduced thus enabling producers and consumers to have the widest access to markets."

It was generally agreed that while production controls over all forms of lead and zinc raw materials would be the most effective means of dealing with overproduction, the difficulties of implementing such controls were virtually insurmountable. An agreement based on export controls, although less effective, was considered more practical. A number of countries felt, however, that a system of export controls

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<sup>1/</sup> In these analyses, the Study Group takes account of withdrawals from supplies for Government stockpiles and of net imports by the free world from "centrally planned economies" (Soviet-bloc countries).

would impose on the exporting countries a disproportionate share of the necessary adjustments; these countries were unwilling to consider any agreement other than one based on production controls. This divergence of views will be reported to the Study Group which is expected to meet in October 1963.

APPENDIX

Table 1.--Unmanufactured lead and zinc articles: Rates of duty under the Tariff Schedules of the United States (TSUS), effective Aug. 31, 1963 <sup>1/</sup>

TSUS item number and article description	Trade-agreement rate <sup>2/ 3/</sup>	Statutory rate <sup>3/ 4/</sup>
602.10 - All lead-bearing ores-----	0.75¢ per lb. on lead content.	1.5¢ per lb. on lead content.
602.20 - All zinc-bearing ores-----	0.67¢ per lb. on zinc content.	1.67¢ per lb. on zinc content.
603.25 - Lead dross-----	1.0625¢ per lb. on lead content.	2.125¢ per lb. on lead content.
603.30 - Zinc dross and skimmings-----	0.75¢ per lb.	1.5¢ per lb.
603.50 - Materials, other than the foregoing: Containing, by weight, over 10 percent of any one of the metals copper, lead, or zinc, and to be initially treated at a copper, lead, or zinc plant.	1.7¢ per lb. on copper content + 0.75¢ per lb. on lead content + 0.67¢ per lb. on zinc content.	4¢ per lb. on copper content + 1.5¢ per lb. on lead content + 1.6¢ per lb. on zinc content.
603.55 - Containing, by weight, over 5 troy ounces of gold per short ton, or over 100 troy ounces of precious metals per short ton.	Do.	Do.
624.02 - Lead bullion-----	1.0625¢ per lb. on 99.6% of the lead content.	2.125¢ per lb. on 99.6% of the lead content.
624.03 - Unwrought lead, other than lead bullion-----	1.0625¢ per lb. on lead content.	2.125¢ per lb. on lead content.
624.04 - Lead waste and scrap-----	1.0625¢ per lb. on 99.6% of the lead content.	2.125¢ per lb. on 99.6% of the lead content.
626.02 - Unwrought zinc, other than alloys of zinc-----	0.7¢ per lb.	1.75¢ per lb.
626.10 - Zinc waste and scrap-----	0.75¢ per lb.	1.5¢ per lb.

<sup>1/</sup> All of the articles listed are subject to absolute import quotas pursuant to escape-clause proclamation No. 3257 except for zinc fume (classifiable under item 603.50), and babbitt metal, solder, and type metal (classifiable under item 624.03). For quotas imposed on imports of lead and zinc, see table 2.

<sup>2/</sup> These rates, reduced by trade agreements, apply to articles of all countries except Cuba and those under Communist domination or control as designated by the President, and except Philippine articles, which receive preferential treatment.

<sup>3/</sup> The specific rates of duty on lead and zinc in the ores (items 602.10 and 602.20) and on copper, lead and zinc in certain other materials (items 603.50 and 603.55), and the duty on lead in lead dross (item 603.25) are applicable to the respective quantities of each of such metal contents as are determined by chemical analysis after certain deductions for losses as provided for in headnote 4 of part 1 of schedule 6.

<sup>4/</sup> These rates apply to products of Cuba (designated by the Congress as Communist dominated or controlled) and to products of countries or areas which have been designated by the President as being under Communist domination or control. See sec. 401 of the Tariff Classification Act of 1962 and sec. 231 and 257(e) of the Trade Expansion Act of 1962.

Table 2.--Unmanufactured lead and zinc: Absolute U.S. import quotas established pursuant to escape-clause proclamation, effective Oct. 1, 1958 <sup>1/</sup>

(In short tons)				
Country of origin	Quarterly lead quota		Quarterly zinc quota	
	Item 925.01 - Lead-bearing ores and materials <sup>2/</sup>	Item 925.03 - Unwrought lead and lead waste and scrap <sup>3/</sup>	Item 925.02 - Zinc-bearing ores and materials <sup>4/</sup>	Item 925.04 - Unwrought zinc and zinc waste and scrap <sup>5/</sup>
	<u>Dutiable</u> lead content	<u>Dutiable</u> lead content	<u>Zinc</u> content <sup>6/</sup>	<u>Gross</u> Weight
Australia-----	5,610	11,270	7/	7/
Belgium and Luxembourg (total)-----	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup> 3,760
Bolivia-----	2,520	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup>
Canada-----	6,720	7,960	33,240	18,920
Italy-----	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup>	1,800
Mexico-----	<sup>7/</sup>	18,440	35,240	3,160
Peru-----	8,080	6,440	17,560	1,880
Republic of the Congo (formerly Belgian Congo)-----	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup> 2,720
Union of South Africa-----	<sup>7/</sup> 7,440	<sup>7/</sup>	<sup>7/</sup>	<sup>7/</sup>
Yugoslavia-----	<sup>7/</sup>	7,880	<sup>7/</sup>	<sup>7/</sup>
All other (total)-----	3,280	3,040	8,920	3,040
<b>Total</b> -----	<b>33,650</b>	<b>55,030</b>	<b>94,960</b>	<b>35,280</b>

<sup>1/</sup> As provided for in part 2, appendix to the Tariff Schedules (see headnote relating to lead and zinc quotas in subpart A and items 925.01, 925.02, 925.03, and 925.04). The Tariff Schedules of the United States (TSUS), which became effective on Aug. 31, 1963, provide for the same total quantities of lead and zinc subject to quotas as provided for in Presidential Proclamation No. 3257, dated Sept. 22, 1958.

The quotas are applicable to specified articles from the specified countries entered, or withdrawn from warehouse, for consumption in each 3-month period beginning Jan. 1, Apr. 1, July 1, and Oct. 1; they do not apply to any article imported by or for the account of the U.S. Government or any article which is not subject to duty.

<sup>2/</sup> For lead-bearing ores and materials provided for in part 1, schedule 6, of TSUS.

<sup>3/</sup> For unwrought lead and lead waste and scrap provided for in part 2G of schedule 6 of TSUS (except babbitt metal, solder, and type metal).

<sup>4/</sup> For zinc-bearing ores and materials provided for in part 1 of schedule 6 of TSUS (except zinc fume).

<sup>5/</sup> For unwrought zinc (except alloys of zinc and zinc dust) and zinc waste and scrap provided for in part 2H, schedule 6, of TSUS.

<sup>6/</sup> Total zinc content of ores and materials to be initially treated at zinc plants (as defined in headnote 2(e) of part 1, schedule 6, of TSUS) and the dutiable zinc content of all other zinc-bearing ores and materials.

<sup>7/</sup> Included in "All other (total)."

Table 3.--Unmanufactured lead and zinc: U.S. production, commercial imports for consumption, domestic exports, and industrial consumption, average 1953-57, annual 1958-62, January-June 1962, and January-June 1963

Item	(In thousands of short tons, except as otherwise indicated)						
	Average 1953-57	1958	1959	1960	1961	January- June 1962	January- June 1963
	Lead (lead content)						
U.S. production 1/	832.6	669.2	707.0	716.6	714.7	681.2	347.2
Commercial imports	443.4	529.2	347.1	354.2	354.7	340.2	171.2
Domestic exports	5.9	3.4	4.1	5.8	11.7	7.5	3.3
Industrial consumption	1,171.4	986.4	1,091.1	1,021.2	1,027.2	1,109.6	532.7
Ratio (percent) of commercial imports to industrial consumption	37.9	53.6	31.8	34.7	34.5	30.7	32.1
	Zinc (zinc content)						
U.S. production 2/	805.3	642.3	701.6	701.2	702.4	767.7	377.1
Commercial imports 3/	651.3	661.2	514.1	501.6	479.8	510.1	257.2
Domestic exports	28.3	7.4	23.0	87.3	57.6	44.2	22.7
Industrial consumption	1,309.4	1,142.2	1,278.4	1,158.9	1,207.5	1,346.3	698.2
Ratio (percent) of commercial imports to industrial consumption	49.7	57.9	40.2	43.3	39.7	37.9	36.8

1/ Mine output of recoverable lead plus lead recovered from all types of old and new scrap.

2/ Mine output of recoverable zinc plus zinc recovered in all forms from all types of old and new scrap.

3/ Zinc content of zinc-bearing ores plus gross weight of zinc blocks, pigs, slabs, scrap, dross, and skimmings.

Source: For lead, compiled from data on production, exports, and consumption given in table 4, and from data on commercial imports (using Treasury Department data for period beginning Oct. 1, 1958) in table 11. For zinc, compiled from data on production, exports, and consumption given in table 5, and from data on commercial imports (using Treasury Department data for the period beginning Oct. 1, 1958) in table 12.

Table 4.--Unmanufactured lead: U.S. production, stocks, imports, exports, consumption, and market prices, average 1953-57, annual 1958-62, and by quarters, January 1962-June 1963

Period	(In short tons of lead content, except as otherwise indicated)						Domestic exports $\frac{5}{}$	Industrial consumption $\frac{7}{}$	Average price per pound $\frac{8}{}$		
	Production			Stocks at end of period							
	Primary (mine output) $\frac{1}{}$	Secondary $\frac{2}{}$	Total	Producers' $\frac{3}{}$	Consumers' $\frac{4}{}$	Total				Imports for consumption $\frac{5}{}$	
			Dutiable	Free	Total			Cents			
Average 1953-57-----	339,426	493,139	832,565	183,237	121,833	445,182	46,262	491,444	5,915	1,171,390	14.670
Annual:											
1958-----	267,377	401,787	669,164	303,316	122,900	561,263	46,632	607,895	3,386	986,387	12.109
1959-----	255,586	451,387	706,973	230,328	126,496	368,449	44,810	413,259	4,321	1,091,149	12.211
1960-----	246,669	469,903	716,572	305,841	97,268	357,541	3,214	360,755	5,843	1,021,172	11.948
1961-----	261,921	452,792	714,713	312,402	99,140	354,307	40,415	394,722	11,733	1,027,216	10.871
1962-----	236,956	444,202	681,158	236,547	89,951	369,642	31,765	401,407	7,468	1,109,635	9.631
1962:											
January-March-----	68,395	109,995	178,390	297,938	104,331	95,271	19,329	114,600	610	276,716	9.706
April-June-----	72,882	110,339	183,221	283,643	106,015	98,588	10,210	108,798	2,644	270,349	9.500
July-September-----	51,752	104,560	156,312	268,335	91,973	88,260	675	88,935	979	266,448	9.500
October-December-----	43,927	119,308	163,235	236,547	89,951	87,523	1,551	89,074	3,235	296,122	9.817
1963:											
January-March-----	43,540	101,090	144,630	195,437	98,977	96,037	2,600	98,637	647	286,700	10.432
April-June-----	66,954	104,327	171,281	192,770	95,726	145,096	2,933	148,029	992	285,200	10.571

1/ Recoverable lead content from ores and concentrates produced, and from old tailings, mine dumps, and smelter slag dumps reclaimed.

2/ Lead recovered in all forms from all types of scrap. Quarterly data for 1962-63 are estimated from preliminary monthly data.

3/ Lead in ore and matte and in process at smelters; lead in base bullion at smelters and refineries, in transit to refineries, and in process at refineries; refined in pig lead; and antimonial lead. Data for 1953-57 represent average of year-end stocks.

4/ Lead in refined soft lead, antimonial lead, unmelted white scrap, percentage metals, copper-base scrap, drosses, residues, and so forth. Beginning with January 1956, data also include secondary smelter metal stocks. Data for 1953-57 represent average of year-end stocks.

5/ Lead content of lead-bearing ores and concentrates, flue dust, and mattes; lead bullion or base bullion; lead pigs and bars; type metal and antimonial lead; and reclaimed lead, lead scrap, and lead dross. Data for 1961-63 are preliminary.

6/ Lead content of lead ores, concentrates, mattes, and base bullion; and the gross weight of lead pigs, bars, anodes, lead scrap, and type metal and antimonial lead prior to 1958. Beginning in 1958, exports of type metal and antimonial lead are not separately available and are not included. Data for 1961-63 are preliminary.

7/ As reported to the U.S. Bureau of Mines; represents all unmanufactured lead from primary and secondary sources consumed (put into process by industrial concerns) including lead in lead-containing alloys, lead in ores consumed directly in the manufacture of lead pigments and salts, and lead that went directly (without remelting) from scrap to fabricated products. These data do not include withdrawals for the Government stockpiles. Data for 1962 and 1963 are preliminary.

8/ Average price of common lead at New York.

Source: Production, consumers' stocks, and consumption, from official statistics of the U.S. Bureau of Mines, except as noted; producers' stocks, from the American Bureau of Metal Statistics; imports and exports, compiled from official statistics of the U.S. Department of Commerce; prices, from E & MJ Metal and Mineral Markets.



Table 5.--Unmanufactured zinc: U.S. production, stocks of slab zinc, imports, exports, consumption, and market prices, average 1953-57, annual 1958-62, and by quarters, January 1962-June 1963

Period	Production			Stocks of slab zinc: at end of period:			Imports for consumption 5/			Domestic exports 6/	Industrial consumption 7/	Average price per pound 8/
	Primary (mine output) 1/	Secondary 2/	Total	Producers' 3/	Consumers' 4/	Total	Dutiable	Free	Total			
Average 1953-57-----	521,929	283,337	805,266	116,276	100,334	672,597	56,932	729,529	28,325	1,309,355	11.746	
Annual:											Cents	
1958-----	412,005	230,332	642,337	190,237	89,261	687,189	40,821	728,080	7,378	1,142,165	10.309	
1959-----	425,303	276,254	701,557	154,419	99,577	588,993	43,868	602,861	22,962	1,278,376	11.448	
1960-----	435,427	265,820	701,247	190,810	66,111	504,323	65,911	570,234	87,326	1,158,938	12.946	
1961-----	464,390	237,967	702,357	151,189	90,559	482,149	39,446	521,595	57,625	1,207,469	11.542	
1962-----	505,648	262,017	767,665	149,554	75,498	530,032	67,187	597,219	144,178	1,346,309	11.625	
1962:												
January-March-----	118,270	69,437	187,707	138,686	86,273	130,923	16,577	147,500	10,690	346,416	12.000	
April-June-----	128,880	68,216	197,096	147,068	72,501	144,297	6,150	150,447	12,018	352,547	11.500	
July-September-----	125,132	59,607	184,739	168,943	61,605	127,224	7,428	134,652	12,492	307,617	11.500	
October-December-----	133,366	64,757	198,123	149,554	75,498	127,588	37,032	164,620	8,978	339,729	11.500	
1963:												
January-March-----	138,685	53,242	191,927	154,158	66,352	128,731	6,464	135,195	7,396	323,338	11.500	
April-June-----	133,589	55,144	188,733	105,870	69,763	126,528	11,221	137,749	10,476	358,141	11.500	

1/ Recoverable zinc content of ores and concentrates produced, and of old tailings, mine dumps, and smelter slag dumps reclaimed.

2/ Zinc recovered in all forms from all types of scrap. The final total for 1962 was distributed by quarters on the basis of preliminary monthly data for the aggregate quantity of secondary slab zinc produced and recoverable zinc content of zinc-base, copper-base, aluminum-base, and magnesium-base scrap consumed. Quarterly data for 1963 were estimated as equivalent to 89.0 percent of the quarterly aggregates of the preliminary monthly data; this is the ratio of the final to the preliminary total for 1962.

3/ As reported by the American Zinc Institute. Represents gross weight of zinc blocks, pigs, and slabs at primary and secondary smelters and refineries. Data for 1953-57 represent average of year-end stocks.

4/ Total stocks of slab zinc. Data for 1953-57 represent average of year-end stocks.

5/ Zinc content of zinc-bearing ores and concentrates and the gross weight of zinc blocks, pigs, scrap, dross, and skimmings. Imports of zinc fume are not included. Data for 1961-63 are preliminary.

6/ Zinc content of zinc ores, concentrates, scrap, dross, and skimmings, and the gross weight of zinc blocks, pigs, and slabs. Data for 1961-63 are preliminary.

7/ Slab zinc consumed, the zinc content of ores consumed directly in the manufacture of zinc pigments and chemicals, and the recoverable zinc in all forms of old and new zinc-bearing scrap (with the zinc content of redistilled and remelt zinc subtracted to eliminate duplication) as reported to the U.S. Bureau of Mines. These data do not include withdrawals for Government stockpiles. Data for 1962 and 1963 are preliminary.

8/ Average price of Prime Western Zinc at East St. Louis.

Source: Production, consumers' stocks, and consumption, from official statistics of the U.S. Bureau of Mines, except as noted; producers' stocks, from the American Zinc Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce; prices, from E & MJ Metal and Mineral Markets.

Table 6.--Lead: Smelter and refinery production in the United States from primary and secondary sources, average 1953-57, annual 1958-62

(In short tons of lead content)						
Item	Average 1953-57	1958	1959	1960	1961	1962
Refined lead:						
From domestic ores and base bullion---	333,656	269,082	225,270	228,899	288,078	245,645
From foreign ores and base bullion---	168,265	201,074	115,661	153,537	161,487	130,418
From scrap-----	126,973	116,057	125,379	148,219	140,669	118,468
Total-----	628,894	586,213	466,310	530,655	590,234	494,531
Antimonial lead:						
From domestic ores---	7,554	8,256	6,447	1,216	12,988	14,838
From foreign ores---	8,845	8,190	5,955	1,169	11,978	12,545
From scrap-----	243,166	182,953	204,346	205,487	205,569	229,392
Total-----	259,565	199,399	216,748	207,872	230,535	256,775
Refined lead and anti- monial lead:						
From domestic ores and base bullion---	341,210	277,338	231,717	230,115	301,066	260,483
From foreign ores and base bullion---	177,110	209,264	121,616	154,706	173,465	142,963
From scrap-----	370,139	299,010	329,725	353,706	346,238	347,860
Total-----	888,459	785,612	683,058	738,527	820,769	751,306

Source: Compiled from official statistics of the U.S. Bureau of Mines.

Table 7.--Zinc: Production of slab zinc at primary and secondary zinc smelters and refineries in the United States, by type of material treated and by grade, average 1953-57 and annual 1958-62

Item	Average 1953-57	1958	1959	1960	1961	1962
Slab zinc produced, total-----	996,596	827,851	856,484	868,247	902,032	938,275
By type of slab produced and source of raw materials used:						
Primary slab zinc, total-----	930,288	781,246	798,666	799,516	846,795	879,395
From domestic ores-----	493,689	346,240	348,443	334,101	413,282	448,095
From foreign ores-----	436,599	435,006	450,223	465,415	433,513	431,300
Secondary slab zinc, <u>1</u> /total----	66,308	46,605	57,818	68,731	55,237	58,880
By grade of slab zinc produced:						
Special High-----	334,396	298,442	331,312	357,205	353,466	392,901
Regular High-----	153,310	86,859	71,792	71,332	89,496	94,185
Intermediate-----	25,550	19,388	17,493	15,841	15,368	14,101
Prime Western <u>2</u> /---	483,340	423,162	435,887	423,869	443,702	437,088

1/ Produced from scrap.

2/ Principally Prime Western grade but includes Brass Special and Selected grades.

Source: Compiled from official statistics of the U.S. Bureau of Mines.

Table 8.--Lead: Producers' stocks at primary smelters and refineries in the United States, by kinds, average of yearend stocks, 1953-57, at the end of each year, 1958-62, and at the end of July 1962 and July 1963

Period or date	(In short tons)									
	In ores and matte and in process at smelters (lead content)	At smelters and refineries	In transit to refineries	In process at refineries	Refined pig lead (gross weight)	Antimonial lead (gross weight)	Total			
Average 1953-57	71,771	15,173	2,796	25,950	54,667	12,880	183,237			
At end of--										
1958	72,378	10,917	1,767	19,746	185,913	12,595	303,316			
1959	73,381	16,955	3,085	16,914	108,002	11,991	230,328			
1960	89,502	30,852	887	24,451	149,034	11,115	305,841			
1961	65,877	17,289	190	19,489	198,423	11,134	312,402			
1962	62,394	10,894	35	17,697	139,168	6,359	236,547			
July 1962	67,914	9,590	623	18,394	184,146	7,948	288,615			
July 1963	72,018	6,245	309	20,217	86,507	9,162	194,458			

Source: Compiled from data supplied the U.S. Tariff Commission by the American Bureau of Metal Statistics.

Table 9.--Slab zinc: Stocks at primary and secondary smelters and refineries in the United States, by standard grades, average of yearend stocks, 1953-57, at the end of each year, 1958-62, and at the end of August 1962 and August 1963

Period or date	(In short tons)					
	Special High Grade	High Grade	Intermediate	Prime Western 1/	Total 2/	
Average 1953-57	28,310	17,658	2,355	67,953	116,276	
At end of--						
1958	52,921	9,236	3,874	124,206	190,237	
1959	12,512	4,442	1,928	135,537	154,419	
1960	61,627	12,268	4,400	112,515	190,810	
1961	75,953	6,226	1,868	67,142	151,189	
1962	43,472	6,767	5,116	94,199	149,554	
August 1962	69,486	9,764	5,168	83,439	167,857	
August 1963	18,129	5,028	2,345	39,091	64,593	

1/ Including Select and Brass Special grades.

2/ Excludes stocks held at points other than at smelters. Such stocks at the end of the periods indicated were as follows: 1957--15,643 tons; 1958--17,534 tons; 1959--29,859 tons; 1960--22,441 tons; 1961--21,397 tons; 1962--31,959 tons; and August 1963 (estimated)--26,037 tons.

Source: Compiled from data supplied the U.S. Tariff Commission by the American Zinc Institute, Incorporated.

Table 10.--Zinc in ore and other zinciferous materials; Indexes of stocks held at zinc smelters in the United States at the end of each year, 1958-62, and at the end of July 1962 and July 1963

(Average of yearend stocks during 1953-57=100) <sup>1/</sup>

Date	Zinc contents of stocks			
	Domestic ore	Foreign ore	Other zinciferous materials	Total
At end of--				
1958-----	41.1	120.8	136.1	81.7
1959-----	45.3	120.4	178.3	86.3
1960-----	90.6	125.0	184.8	111.5
1961-----	82.8	115.0	121.3	99.2
1962-----	70.1	107.3	117.7	89.2
July 1962-----	65.0	111.4	113.0	88.2
July 1963-----	59.6	87.6	140.2	76.9

<sup>1/</sup> Index numbers are based on data compiled by the American Zinc Institute, Inc., which represented stocks of zinc ore (including sinter) and of other zinciferous materials held at smelters, at electrolytic plants, and in storage in the United States, suitable for the manufacture of metal, regardless of ownership, and including any Government-owned stocks, but excluding material in the operating circuit; data exclude stocks at mines and at old slag and residue piles or dumps, and material that is awaiting conversion into pigments and is suitable and definitely earmarked for that purpose. Data on actual tonnages of zinc-ore stocks may not be published; permission was granted the U.S. Tariff Commission by the American Zinc Institute, however, to publish such data in terms of index numbers, which reflect changes in stocks.

Source: Compiled from data supplied the U.S. Tariff Commission by the American Zinc Institute, Inc.

Table 11.--Lead: Annual equivalent of quarterly import quotas established on Oct. 1, 1958, and actual imports under the quotas, by countries, 1959-62, January-June 1962, and January-June 1963

Item and country	(In short tons)						
	Annual equivalent of quota	1959	1960	1961	1962	January-June 1962	January-June 1963
Ores (lead content):							
Peru	32,320	32,320	32,320	32,320	32,179	16,160	16,160
Union of South Africa	29,760	29,760	29,760	29,760	29,760	14,880	14,880
Canada	26,880	26,880	26,880	26,880	26,880	13,440	8,741
Australia	20,160	20,160	20,160	20,160	20,160	10,080	10,080
Bolivia	10,080	10,080	10,080	10,080	7,630	4,549	5,040
All other	13,120	5,522	12,624	13,120	13,120	6,560	6,560
Total	132,320	124,722	131,824	132,320	129,729	65,669	61,461
Metal (lead content):							
Mexico	73,760	73,760	73,754	73,760	73,059	36,852	36,880
Australia	47,360	47,360	47,360	47,360	44,861	23,680	23,680
Canada	31,840	31,840	31,840	31,840	31,840	15,920	15,903
Yugoslavia	31,520	31,520	31,520	31,487	31,246	15,759	15,760
Peru	25,760	25,756	25,758	25,755	23,013	10,139	12,871
All other	12,160	12,160	12,160	12,160	6,446	3,182	6,080
Total	222,400	222,396	222,392	222,362	210,465	105,532	111,174
Grand total (ores and metal)	354,720	347,118	354,216	354,682	340,194	171,201	172,635

Source: Quotas, from Presidential Proclamation No. 3257, dated Sept. 22, 1958; imports subject to quotas, from the U.S. Department of the Treasury.

Table 12.--Zinc: Annual equivalent of quarterly import quotas established on Oct. 1, 1958, and actual imports under the quotas, by countries, 1959-62, January-June 1962, and January-June 1963

Item and country	(In short tons)					
	Annual equivalent of quota	1959	1960	1961	1962	January- June 1963
Ores (zinc content):						
Mexico	140,960	140,960	140,960	140,866	140,729	70,249
Canada	132,960	132,960	132,960	110,173	132,960	66,480
Peru	70,240	70,240	70,240	67,535	66,598	35,120
All other	35,680	35,680	35,680	35,680	35,680	17,840
Total	379,840	379,840	379,840	354,254	375,967	187,829
Metal (gross weight):						
Canada	75,680	75,680	75,680	73,157	75,680	37,840
Belgium and Luxembourg	15,040	11,425	5,696	12,465	15,040	7,520
Mexico	12,640	9,412	8,601	8,498	12,334	6,300
Belgian Congo <sup>1/</sup>	10,880	10,880	9,618	10,876	10,878	5,282
Peru	7,520	7,517	7,518	7,517	7,515	3,759
Italy	7,200	7,200	3,614	883	551	-
All other	12,160	12,160	11,035	12,160	12,160	6,080
Total	141,120	134,274	121,762	125,556	134,158	67,781
Grand total (ores and metal)	520,960	514,114	501,602	479,810	510,125	254,610

<sup>1/</sup> Beginning June 30, 1960, Republic of the Congo.

Source: Quotas, from Presidential Proclamation No. 3257, dated Sept. 22, 1958; imports subject to quotas, from the U.S. Department of the Treasury.



Table 13.--Lead metal: Average monthly market prices at New York City and at London, January 1959-August 1963 <sup>1/</sup>

(In cents per pound)							
Year and month	New York price of Common lead	London Metal Exchange price <sup>2/</sup>	Difference, New York price minus London price <sup>3/</sup>	Year and month	New York price of Common lead	London Metal Exchange price <sup>2/</sup>	Difference, New York price minus London price <sup>3/</sup>
1959:				1961--con.			
January-----	12.667	8.981	3.686	July-----	11.000	8.107	2.893
February-----	11.560	8.746	2.814	August-----	11.000	8.086	2.914
March-----	11.412	8.689	2.723	September-----	11.000	7.999	3.001
April-----	11.189	8.631	2.558	October-----	11.000	7.828	3.172
May-----	11.897	8.850	3.047	November-----	10.203	7.548	2.655
June-----	12.000	8.708	3.292	December-----	10.250	7.559	2.691
July-----	12.000	8.781	3.219	1962:			
August-----	12.286	9.180	3.106	January-----	10.034	7.388	2.646
September-----	13.000	8.840	4.160	February-----	9.583	7.335	2.248
October-----	13.000	8.827	4.173	March-----	9.500	7.576	1.924
November-----	13.000	9.018	3.982	April-----	9.500	7.559	1.941
December-----	12.523	9.087	3.436	May-----	9.500	7.477	2.023
1960:				June-----	9.500	7.215	2.285
January-----	12.000	9.348	2.652	July-----	9.500	6.726	2.774
February-----	12.000	9.233	2.767	August-----	9.500	6.381	3.119
March-----	12.000	9.533	2.467	September-----	9.500	6.488	3.012
April-----	12.000	9.690	2.310	October-----	9.500	6.619	2.881
May-----	12.000	9.676	2.324	November-----	9.951	6.789	3.162
June-----	12.000	9.172	2.828	December-----	10.000	6.929	3.071
July-----	12.000	8.905	3.095	1963:			
August-----	12.000	8.869	3.131	January-----	10.296	6.781	3.515
September-----	12.000	8.743	3.257	February-----	10.500	6.835	3.665
October-----	12.000	8.406	3.594	March-----	10.500	6.968	3.532
November-----	12.000	8.522	3.478	April-----	10.500	7.233	3.267
December-----	11.381	8.122	3.259	May-----	10.500	7.576	2.924
1961:				June-----	10.713	8.122	2.591
January-----	11.000	7.975	3.025	July-----	11.068	8.140	2.928
February-----	11.000	8.167	2.833	August-----	11.354	8.382	2.972
March-----	11.000	8.242	2.758				
April-----	11.000	8.384	2.616				
May-----	11.000	8.330	2.670				
June-----	11.000	8.087	2.913				

<sup>1/</sup> Changes in the average daily prices in the United States since Jan. 1, 1959, were as follows (in cents per pound):

Date of change	New price	Date of change	New price	Date of change	New price
1959:		1960:		1963:	
Jan. 22-----	12.000	Dec. 13-----	11.000	Jan. 15-----	10.500
Feb. 11-----	11.500	1961:		June 6-----	10.750
Feb. 24-----	11.000	Nov. 1-----	10.500	July 2-----	11.000
Mar. 6-----	11.500	Nov. 13-----	10.000	July 24-----	11.250
Apr. 1-----	11.000	Nov. 28-----	10.250	Aug. 20-----	11.500
Apr. 21-----	11.500	1962:		Sept. 16-----	11.750
May 8-----	12.000	Jan. 5-----	10.000		
Aug. 24-----	13.000	Feb. 1-----	9.750		
Dec. 14-----	12.500	Feb. 9-----	9.500		
Dec. 21-----	12.000	Nov. 5-----	10.000		

<sup>2/</sup> Average of daily mean of bid and ask quotations for prompt lead at the morning session of the London Metal Exchange. Quotations in pounds sterling per long ton were converted to U.S. cents per pound, at the rate of 1 pound sterling=\$2.80.

<sup>3/</sup> In August 1963 the cost of transportation and insurance from London to New York City plus the U.S. import duty of 1-1/16 cents per pound amounted to about 1.95 cents per pound.

Source: E & MJ Metal and Mineral Markets.

Note.--The daily quotations are based on sales on a flat-price basis of domestically refined lead sold to domestic consumers. The daily averages are weighted by the quantity of such sales. The price quotations reflect sales of all grades of lead sold converted to the basis of Common lead at New York.

Table 14.--Prime Western zinc: Average monthly market prices in the United States and at London, January 1959-August 1963 1/

(In cents per pound)										
Year and month	F.o.b. East St. Louis 2/	Delivered New York City	London Metal Exchange price 3/	Difference, New York price minus London price 4/	Year and month	F.o.b. East St. Louis 2/	Delivered New York City	London Metal Exchange price 3/	Difference, New York price minus London price 4/	
1959:					1961--Con.					
January-----	11.500	12.000	9.360	2.640	July-----	11.500	12.000	9.737	2.263	
February-----	11.417	11.917	9.210	2.707	August-----	11.500	12.000	9.559	2.441	
March-----	11.000	11.500	9.390	2.110	September-----	11.500	12.000	9.243	2.757	
April-----	11.000	11.500	9.086	2.414	October-----	11.500	12.000	8.986	3.014	
May-----	11.000	11.500	9.669	1.831	November-----	11.500	12.000	8.696	3.304	
June-----	11.000	11.500	9.801	1.699	December-----	11.975	12.475	8.920	3.555	
July-----	11.000	11.500	10.066	1.434	1962:					
August-----	11.000	11.500	10.662	.838	January-----	12.000	12.500	8.777	3.723	
September-----	11.334	11.834	10.759	1.075	February-----	12.000	12.500	8.598	3.902	
October-----	12.129	12.629	11.421	1.208	March-----	12.000	12.500	8.669	3.831	
November-----	12.500	13.000	11.867	1.133	April-----	11.500	12.000	8.678	3.322	
December-----	12.500	13.000	11.899	1.101	May-----	11.500	12.000	8.555	3.445	
1960:					June-----	11.500	12.000	8.374	3.626	
January-----	12.877	13.377	11.822	1.555	July-----	11.500	12.000	8.263	3.737	
February-----	13.000	13.500	11.107	2.393	August-----	11.500	12.000	8.073	3.927	
March-----	13.000	13.500	11.270	2.230	September-----	11.500	12.000	8.011	3.989	
April-----	13.000	13.500	11.554	1.946	October-----	11.500	12.000	8.254	3.746	
May-----	13.000	13.500	11.512	1.988	November-----	11.500	12.000	8.555	3.445	
June-----	13.000	13.500	11.324	2.176	December-----	11.500	12.000	8.378	3.622	
July-----	13.000	13.500	11.279	2.221	1963:					
August-----	13.000	13.500	10.929	2.571	January-----	11.500	12.000	8.448	3.552	
September-----	13.000	13.500	10.892	2.608	February-----	11.500	12.000	8.694	3.306	
October-----	13.000	13.500	10.989	2.511	March-----	11.500	12.000	8.957	3.043	
November-----	13.000	13.500	10.954	2.546	April-----	11.500	12.000	9.273	2.727	
December-----	12.476	12.976	10.345	2.631	May-----	11.500	12.000	9.502	2.498	
1961:					June-----	11.500	12.000	9.492	2.508	
January-----	11.529	12.029	9.904	2.125	July-----	12.025	12.525	9.292	3.433	
February-----	11.500	12.000	10.345	1.655	August-----	12.500	13.000	9.545	3.455	
March-----	11.500	12.000	10.572	1.428						
April-----	11.500	12.000	10.489	1.511						
May-----	11.500	12.000	10.299	1.701						
June-----	11.500	12.000	9.880	2.120						

1/ Changes in the daily average prices in the United States f.o.b. East St. Louis since Jan. 1, 1959, were as follows (in cents per pound):

Date of change	New price	Date of change	New price	Date of change	New price
1959:		1960:		1962 (Apr. 2)-----	11.500
Feb. 25-----	11.000	Jan. 8-----	12.532		
Oct. 26-----	12.500	Jan. 11-----	13.000	1963:	
Oct. 29-----	12.612	Dec. 13-----	12.500	July 2-----	12.000
Nov. 2-----	12.500	Dec. 19-----	12.000	July 30-----	12.500
		1961:			
		Jan. 10-----	11.500		
		Dec. 4-----	12.000		

2/ Prime Western zinc is also sold on a delivered basis (in addition to f.o.b. East St. Louis basis); the delivered price ranges from 1/4 to 1/2 cent per pound above the East St. Louis price. The delivered price is 1/2 cent above the East St. Louis price where freight from East St. Louis exceeds 1/2 cent per pound (freight from East St. Louis to New York City exceeds 1/2 cent per pound).

3/ Average of daily mean of bid and ask quotations for Good Ordinary brands (equivalent to U.S. Prime Western grade) per pound for prompt delivery at morning session of London Metal Exchange. Quotations in pounds sterling per long ton were converted to U.S. cents per pound at the rate of 1 pound sterling=\$2.80.

4/ In August 1963 the cost of transportation and insurance from London to New York City, plus the U.S. import duty (7/10 cent per pound), amounted to about 1.58 cents per pound.

Source: E & MJ Metal and Mineral Markets.

Note.--The daily quotations are prices at which slab zinc was sold on a flat-price basis by primary producers in the United States, weighted by quantities sold. The price quotations reflect sales of all grades of zinc sold, converted to the basis of Prime Western zinc f.o.b. East St. Louis. Effective July 25, 1963, other grades of zinc commanded the following premiums over the Prime Western grade (in cents per pound): High grade (sold on contract delivered to consumers' plants), 0.85 cent and Special High grade (sold on contract delivered to consumers' plants), 1.0 cent. During various periods, however, premiums have been nominal.

Table 15.--Lead and zinc: Mine output, smelter output of primary metal, and consumption of primary metal in the United States and in the world, average 1953-57, annual 1958-62

Period	(Mine and primary smelter output and consumption in thousands of short tons)										Ratio (percent) of		
	Mine output			Primary smelter output			Consumption of primary metal			United States to world--			
	United States 1/	World 2/	United States 3/	United States 4/	World 4/	United States 5/	World 6/	United States 5/	World 6/	Mine output	Smelter output	Consumption	
Average 1953-57-----	339	2,091	2,430	502	1,793	2,295	761	1,491	2,252	14.0	21.9	33.8	
Annual:													
1958-----	267	2,323	2,590	469	2,026	2,495	707	1,707	2,414	10.3	18.8	29.3	
1959-----	256	2,304	2,560	341	2,069	2,410	672	1,836	2,508	10.0	14.1	26.8	
1960-----	247	2,368	2,615	382	2,178	2,560	582	1,971	2,553	9.4	14.9	22.8	
1961-----	262	2,363	2,625	450	2,215	2,665	696	1,996	2,692	10.0	16.9	25.9	
1962-----	237	2,528	2,765	376	2,289	2,665	733	2,067	2,800	8.6	14.1	26.2	
Average 1953-57-----	522	2,672	3,194	930	1,976	2,906	987	1,746	2,733	16.3	32.0	36.1	
Annual:													
1958-----	412	2,948	3,360	781	2,229	3,010	868	2,074	2,942	12.3	25.9	29.5	
1959-----	425	2,955	3,380	799	2,321	3,120	956	2,220	3,176	12.6	25.6	30.1	
1960-----	435	3,155	3,590	800	2,480	3,280	878	2,432	3,310	12.1	24.4	26.5	
1961-----	464	3,306	3,770	847	2,713	3,560	931	2,567	3,498	12.3	23.8	26.6	
1962-----	505	3,365	3,870	879	2,771	3,650	1,014	2,576	3,590	13.0	24.1	28.2	

1/ Recoverable content of ores and concentrates produced.

2/ Partly estimated; data represent principally lead or zinc content of ores and concentrates produced.

3/ For lead, refined lead from domestic and foreign ores; refined lead produced from foreign base bullion not included. For zinc, primary slab zinc from both domestic and foreign ores.

4/ Partly estimated; includes some production from scrap.

5/ For lead, data do not include tonnages which went to the Government permanent stockpile; data represent mostly primary lead, although a small amount of secondary lead may be included. For zinc, data represent consumption of slab zinc as reported by the U.S. Bureau of Mines.

6/ Partly estimated; includes some consumption of secondary metal.

Source: Mine and smelter output, compiled from official statistics of the U.S. Bureau of Mines; consumption, from American Bureau of Metal Statistics, except as noted.

