

B A C K G R O U N D D A T A

ON

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COMPILED BY

ARIZONA DEPARTMENT OF MINERAL RESOURCES

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FOR

THE ARIZONA COPPER TARIFF BOARD

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METAL DUTIES - COPPER - BRASS

ACCORDING TO THE TARIFF ACT OF 1930, AMENDED

Source: "Metal Statistics 1962" Published by American Metal Market

The following rates were in effect on January 1, 1962:

Copper - Ore, matte, bars, ingots, pigs, regulus, plates, clippings from new copper and <u>1</u> / scrap, on copper contained	<u>2</u> /	1.7¢ lb.
Composition metal, suitable for processing, without further refining	<u>3</u> /	1.7¢ lb.
Rolls, rods or sheets	1¼¢ lb. and <u>3</u> /	1.7¢ lb.
Seamless tubes and tubing	3½¢ lb. and <u>3</u> /	1.7¢ lb.
Plain wire (Par 316)	12½ % and <u>3</u> /	1.7¢ lb.
Brazed tubes	4½¢ lb. and	1.7¢ lb.
Brass - Old brass clippings, fit only for remanufacture, on copper contained	<u>2</u> /	1.7¢ Lb.
Brass rods, sheets, plates, bars, strips, muntz or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2¢ lb. and <u>3</u> /	1.7¢ lb.
Brass tubes and tubing, seamless	2¢ lb. and <u>3</u> /	1.7¢ lb.
Brass tubes, brazed, angles & channels	6¢ lb. and <u>3</u> /	1.7¢ lb.
Brass and bronze wire	12½ % and <u>3</u> /	1.7¢ lb.

1/ Import tax suspension expired June 30, 1958.

2/ Import tax suspended effective April 1, 1951; extension of suspension expired June 30, 1958, provided copper price is above 24¢. If the copper price goes below 24¢ for one month, the suspension expires - under G.A.T.T. the 2¢ tax is reduced to 1.7¢.

3/ Effective July 1, 1958, subject to provision of previous sentence.

COPPER TARIFF HISTORY

In 1932, the Congress of the United States placed into the Revenue Act of 1932 a section providing for a 4-cents per pound tax on foreign copper imported into this country for domestic consumption. The Act would have automatically expired in June 1934, if it had not been extended for one year by Presidential Proclamation.

In 1935, the same tax was written into the Revenue Bill of 1935, which automatically expired on June 30, 1937. The Revenue Act of 1937 extended the tax for 2 years, beginning July 1, 1937, and in effect until June 30, 1939. Again, in June 1939, the 4-cent excise tax on copper imported into the United States was extended to June 30, 1941.

When it became apparent in the last quarter of 1940 that U. S. production was not adequate to meet the needs of industry, the Metals Reserve Company began making arrangements to buy Latin American copper. The first government contracts were announced on December 19, 1940, and from that time on, the foreign copper contracted for paid no excise tax, as the government had contracted for the full annual production of the Latin American countries. This condition lasted until late in 1946, when all price controls were removed by the OPA order, effective November 10, 1946. With OPA ceilings removed, RFC announced it would begin to pay as soon as practicable the 4-cent excise tax on foreign copper imported. This tax continued in effect until April 30, 1947, when President Truman signed a bill suspending the tax through March 31, 1949. On March 31, 1949, the President again signed a bill suspending the excise tax until June 30, 1950. Meanwhile, on October 30, 1947, the General Agreement on Tariffs and Trade (GATT) made a cut from 4 to 2 cents in the excise tax on copper effective when the tax suspension ended. This, at a time when the purchasing power of 4 cents was already reduced to 2.45 cents, according to the relative consumer price index of 58.4 in 1932 and 95.5 in 1947.

As a result of the reduced demand for copper in the second quarter of 1949,

there was agitation in Congress for withdrawal of the tax suspension, but the year closed without such action having been taken.

Several attempts failed to enact legislation extending the suspension of the excise tax on copper beyond June 30, 1950. Therefore the 2-cent tax became effective on July 1, 1950. Demand for copper increased greatly outside of the United States in 1950, and production and prices rose. The Defense Production Act, which became law early in September gave the President the power to regulate the economy to assure adequate supplies of materials for expanded defense and essential civilian requirements. Pursuant to the Act, the Defense Minerals Administration was established in the Department of the Interior to render Government assistance to industry in expanding supplies of critical minerals. During 1950 it entered into a number of negotiations with private companies for new copper-production projects. For the next few years the copper producers co-operated to the extent of increasing copper production over 25 percent.

The 2-cent copper excise tax was suspended from April 1, 1951 to February 15, 1953. This time the law provided that the Tariff Commission must notify the President within 15 days after the end of any calendar month in which the average price dropped below 24 cents a pound delivered Connecticut Valley, and within 20 days thereafter he had to revoke the suspension. The Korean War had accentuated the demand for copper, and the metal was one of the commodities for which ceiling prices were established by the General Ceiling Price Regulation, effective January 26, 1951. The ceiling on domestic copper was set at 24.5 cents, and at 27.5 cents on imported copper. In spite of this ceiling price of 27.5 cents, and also in spite of the suspension of the 2-cent excise tax, an agreement between the United States and Chilean Governments in May, 1951 provided for payment of an additional 3 cents a pound over the ceiling - 27.5 cents to 30.5 cents!

Rising costs threatened some loss of output from high-cost mines. In December, 1951 the D.M.P.A. (Defense Materials Procurement Agency) moved to prevent such losses by offering to negotiate over-the-ceiling contracts with high-cost mines then in actual production.

When controls were removed on February 25, 1953, the domestic price of copper jumped from the ceiling price of 24.5 cents to 30 cents! Even at that price (30 cents), it was merely midway between the widespread extremes of approximately 24.5 cents for most domestic copper and 36.5 cents for foreign metal before February 25.

The excise tax on copper was again suspended from February 15, 1953 to June 30, 1954, and the Act of Congress had the same provisions for re-imposition of the tax if the price fell to 24 cents.* In 1954, the suspension was extended to June 30, 1955, with the same peril point of 24 cents. On June 24, 1955, the President signed another bill to continue until June 30, 1958 the suspension of the 2-cent per pound import tax on foreign copper. The measure became Public Law 91, 84th Congress - with the peril point still 24 cents.

At the June, 1956 meetings in Geneva on General Agreements on Tariffs and Trade, the United States agreed to lower the duties 15 percent on copper and other metals and minerals in exchange for reductions of tariffs by other countries on United States exports. Excises were to drop 15 percent on copper metal, ores and concentrates - 5 percent for each of 3 years - provided the tariff were re-imposed. For example, if Congress should decide to cancel the suspension then in effect, a tax of 1.8 cents would be re-imposed for the fiscal year 1958; 1.7 cents after June 30, 1958. There was a provision to re-impose the 2-cents tax if the market price for copper dropped to 24 cents. (Here again it would have been more realistic to have set the peril point at 30 cents, before making the 15 percent cut in the tax).

* It would have been more realistic, at this time, to have set the peril point at 30 cents.

The unprecedented demand for copper during World War II, for defense purposes since the War, and for replenishment of supply for peace-time re-construction and new construction, has furnished the domestic copper industry with a market for all the copper it could produce. This situation existed up to the last half of 1956, with only one period of "recession", that in 1949. This accounted for the industry's acceptance of the tariff suspensions. However, since June of 1956, the supply has exceeded the demand for copper, and the deterioration of the domestic market has been rapid. The success of the Government's efforts to increase the productive capacity of the domestic mines since 1950 has been remarkable. The mining industry has co-operated with this effort, and is continuing to co-operate by developing new ore-bodies to keep pace with a normal growth of copper consumption.

When the 24-cent peril point was first established in 1951, it was true that the domestic price was 24.5 cents, but this was a controlled price, and compared with negotiated import prices of 27.5 - 30.5 cents, and even up to 36.5 cents. In fact, when controls were removed in 1953, the domestic price shot up to 30 cents, indicating that 30 cents was the normal price at that time.

The cost of copper production has increased more than 60 percent since 1951, (See Table I) and even if 24 cents had been a fair peril point at that time, then 38 cents would be more realistic at this time (1962).

AD VALOREM COPPER TARIFF HAS BEEN REDUCED
OVER 85 PERCENT FROM THE 1932-1940 PERIOD TO YEAR 1961

From 1932- 1940, when Congress enacted and re-enacted the 4-cent copper tariff every two years (after thorough investigation each time), the price of copper averaged 10.11 cents per pound; so that on an ad valorem basis, the duty was roughly 40 percent. On the basis of a 36-cent average price which has prevailed since May of 1965, the 1.7 cent tariff was less than 5 percent ad valorem, which means

an 87 percent reduction from the ad valorem duties which had been in effect in the 1932-1940 period.

A 4-cent tariff in a 36-cent market would be equivalent to 11 percent ad valorem or a $72\frac{1}{2}$ percent reduction from the tariff in effect in the 1932-1940 period.

Considering the strategic value of copper to this country, and the need for a healthy, going, domestic copper industry, it would seem that an 87 percent reduction of the ad valorem tax was much too liberal, and that $72\frac{1}{2}$ percent reduction should have been sufficiently liberal to satisfy the free-trade advocates.

Moreover, the tax should never be suspended while copper is below 38 cents per pound.

It is to be hoped that under the terms of the new Trade Act, these two things will be borne in mind.

THE NEED FOR CONGRESS TO FOSTER A STRONG
HEALTHY DOMESTIC COPPER INDUSTRY

Over 90 percent of our domestic copper comes from low-grade mines handling huge tonnages. They have but little flexibility of operation, but a definite requirement of prices high enough to keep them in operation under their present cost conditions. They get their lowest costs only when running at full production. They have but limited possibilities as to selective mining. As production comes down because of curtailing to fit markets, their per pound costs go up.

The larger producers have their own smelters located near their mines, but a few custom smelters handle production from the other mines. To avoid speculation as to futures, the custom smelters ordinarily make it a practice to sell each day, at whatever price the consumer is willing to pay, a quantity of copper about equal to their daily intake from smaller producers. Thus their operations largely govern prices. Custom smelters, or refineries, also handle the secondary copper coming from scrap recovery, which increases in quantity as prices go up and thus increases the amount of metal at current bid prices. Thus the producing units of the large mines themselves have but little to say about markets and prices yet they are the ones most influenced by the ups and down.

These large mines are in one-industry communities. For each man employed there are about six in population. They have nothing else to turn to when curtailment cuts their hours of labor. Yet there is no local available labor market when higher production is indicated by demand. When market conditions require a curtailment of production, it is done by shortening the work week, and thus giving every man a job and his family some income, even though it makes a lessened take-home pay for family support. If more drastic curtailment is called for, some miners are laid off. The only cure for such a depressed area is a reasonably stable production program. Whatever part of the domestic market that is taken away from domestic mines is largely paid for by those with fluctuating employment at the large mines because of lessened demand, and the labor at the small mines operating only when metal prices are high.

What the domestic copper mining industry needs to maintain full employment is a tariff sufficient to put the domestic industry on an equitable competitive cost basis with foreign mines when prices are below certain "peril points". The foreign mines with low wage scales, higher average grades of ore, cheap water transportation and other cost advantages are in position to take any or all of the domestic market that they wish, now or in the future.

National security demands a going domestic copper mining industry, rather than dependence upon foreign sources for this metal. This was revealed to us expensively by submarine sinkings during World War I. There is no metal more important to armed conflict than copper.

The weak and declining copper market of 1957-1958 resulted in substantial curtailment in output at most of the properties in the United States, and some mines were actually shut down. A significant point is that virtually all of the curtailment in 1957 was at mines in the United States. Production from foreign mines was actually about 100,000 tons greater in 1957 than in 1956.

The most deplorable evidence of the deterioration of 1957-1958 was the unemployment in the mining communities. In addition to actual layoffs of 6,000 men,

consequent to both curtailment and shutting down, there was widespread shortening of the work week.

The mining communities in Arizona are completely dependent on copper mining, milling and smelting. When a mine is shut down, the damage extends not only to the mine employees but to hundreds of citizens indirectly affected by the shutdown. It has been estimated that a total of 13.5 persons (including the miners and their families as well as service employees and their families) are dependent on the output of one miner. With a normal employment of 15,000 by the copper companies in Arizona, this means that the livelihood of over 200,000 persons is affected. The industry is a major element in the economy of five Western States, and is important to at least five other states. Drastic curtailment of production and suspension of operations have unusually bad effects on the mines themselves, on the mining communities, and the surrounding regions.

The impact of curtailing a typical metal-mining enterprise on the employees and the community is much more serious than with most other kinds of industry. Copper mining is carried on largely in isolated areas, where not only the working forces in the mines and reduction works but the families of the miners, the thousands of men and women engaged in essential business activities and the professions, community life itself, are dependent on the fortunes of the mining business. The mere statistics of mine employment are, therefore, utterly inadequate to measure the population dependent on the mines. Modern and stable towns and villages have been built up, enjoying every sort of civic advantage. Unfortunately, such communities depend on a single industry.

Indirectly dependent on the copper-mining industry, of course, are thousands of people engaged in producing and distributing foodstuffs and miscellaneous merchandise; machinery; supplies and equipment of many kinds. The industry is an important user of fuels, electricity, cement, explosives, steel, electrical machinery, automotive equipment, and power shovels.

Because of the location of most of the copper mines at long distances from manufacturing and consuming centers, the industry generates a great deal of long-haul as well as short-haul freight. The suspension of copper-producing operations consequently reacts seriously not only on the immediate community but on the surrounding region and the economy in general. One not inconsiderable factor is the loss of tax revenue by local, state and Federal governments. In Arizona such taxes constitute a very important proportion of total revenues.

The suspension of operations, even though temporary, of any industrial operation involves expense; but because of characteristics unique to mining operations the "shutdown" or "standby" expense is exceptionally high. This is particularly true of underground mines. The problem of supporting the ground is a continuing one; and constant repair and replacement of timber in haulageways, stations, and shafts is necessary whether the mine is producing or not. Pumps must be run continuously to prevent flooding of the workings. Hoisting machinery and other surface equipment and plant must be kept in repair. These are costly operations; but unless they are carried on, the likelihood is that the cost of future rehabilitation will be so great that valuable ore will be lost beyond retrieve.

Conservation of an Invaluable Natural Resource

It has been urged in some quarters that, if copper can readily be obtained from foreign sources, the United States should be content to import the metal and leave its copper reserves in the ground. This idea rests on a profound misconception of peculiar aspects of the business of mining and the true meaning of conservation. In its best sense, conservation means not hoarding in the ground; but efficient and beneficial discovery, production, and utilization. Only a healthy, vigorous copper-mining industry can and will explore for new ores, develop and equip new deposits, and devote itself to the manifold problems of converting ore bodies of successively lower grade into profitable enterprises. The incentive to do these things is the prospect of maintaining a reasonably prosperous, "going" industry.

The development of an ore deposit and the provision of necessary facilities for production typically are undertakings requiring from five to ten years. Consequently, it is highly important that exploration be not only adequate but forehanded. Advocates of the "hoarding" conception of conservation assume that geologists and engineers know of every pound of copper in the ground; and that the supply can be drawn upon in emergency in the same way as could the gold buried in the vaults at Fort Knox, Kentucky. They are, of course, entirely mistaken.

At this point it may be useful to say a word on the matter of undeveloped resources as distinguished from known reserves. The notion - once too widely current - that the United States is a "have-not" nation in respect to metals, including copper, will not bear careful scrutiny. Competent geologic evidence is convincing that many important deposits must exist that are covered by lava flows, sedimentaries, or detrital material, laid down after the ore was deposited. The search for such deposits is expensive; but techniques are being improved; and, unless the most competent geologists and engineers are all wrong, many large ore bodies will be found.

The discovery, exploitation and prudent use of the Nation's natural resources of copper depend on the existence of a thriving copper-mining industry.

U. S. COPPER PRODUCTION AND CONSUMPTION
FOREIGN COPPER PRODUCTION AND CONSUMPTION

Each Area Now Able to Take Care of Its Own Demands

A study of United States copper production and consumption figures (Table III), by years from 1945 to 1954 inclusive, and from 1955 to 1964 inclusive, brings out some pertinent statistics. The small increase in domestic consumption of refined copper is especially notable.

The average annual domestic consumption from 1945 to 1954 inclusive (10 years) was 1,364,982 tons, and from 1955 to 1964 inclusive (10 years) it was 1,506,687 tons, and increase of only 10.38 percent for the 10 years, or only 1.04 percent increase per year, where one might expect a normal growth-rate of at least 2 percent. The grow-rate in production of refined copper for the two 10-year periods was 3.1 percent per year.

The other thing of note is that the United States has become self-supporting in copper production. This has been the case for the last eight years.

Mine productive capacity has reached 1,400,000 tons of copper per year, (see Table III) and with an estimated added production of 300,000 tons of secondary unalloyed copper, this country is now well prepared to produce all the copper it will need for some time to come. Such capacity should permit economical operation for most of the big producers at an 85 to 90 percent of capacity during a recession or lull in demand.

Meanwhile, a copper tariff high enough to bar out low-cost foreign copper should always be kept in mind, as from now on domestic copper will be mostly high-cost due chiefly to lowering grades of ore and rapidly increasing costs. The new producers, which have brought about this new production capacity, must be kept active, not only for security reasons but for employment stability in a very important industry in our economy.

A study of Table V shows that during the last three years it took an annual average of 62,018,979 man-hours of U. S. labor at \$2.917 per hour to produce 150,622,238 tons of copper ore, with a recovery of 2,325,518,000 pounds of equivalent copper, a labor cost of \$180,783,696 for copper mining, or \$0.0777 per pound of copper.

With foreign ores assaying more than twice the grade of U. S. ores, and foreign labor averaging less than half the U. S. wage-rates, it is easy to calculate a foreign copper mining labor cost of less than half the U. S. labor cost of producing a pound of copper. As the object of a copper tariff primarily is to equate the difference in wage cost per pound of copper, such a tariff should be at least four cents per pound.

In order to insure continuous production of the number one strategic metal, the domestic copper industry must be protected against a flood of low-cost foreign metal. Our foreign aid program has helped the foreign producer to develop his copper production techniques, and he can find a ready market for his product in a rapidly expanding economy throughout the world. The growth-rate of copper consumption throughout Europe has been truly amazing. According to the Copper Institute figures for deliveries of refined copper outside U.S.A., the average annual consumption of copper for the 10-year period (1945-1954) was 950,000 tons and for the 10-year period (1955-1964) it was over two million tons.

EFFECT OF HIGH WAGES ON COST OF ARIZONA
AND UNITED STATES COPPER MINING

The attached table, (Table V), taken from a recent report of the Arizona Department of Mineral Resources, showing copper mining employment, wages and hours in Arizona and the United States, as reported by the Arizona Employment Security Commission and the United States Department of Labor, gives an idea of the effect of high wages on the cost of mining copper. For example, in Arizona, in the base period, 1947-1949, it took an annual average of 24,943,412 man-hours of labor at \$1.432 per hour to produce 38,082,754 tons of copper ore with a recovery of 748,056,267 pounds of equivalent copper; a labor cost of \$35,718,966 for copper mining, or \$0.04775 per pound of copper. The recovery of copper per man-hour was 30.0 lbs.

In the period 1962-1964 it took an annual average of 30,949,916 man-hours of labor at \$3.019 per hour to produce 1,253,422,233 tons of copper ore with a recovery of 81,871,773 pounds of equivalent copper; a labor cost of \$93,437,848 for copper mining or \$0.07455 per pound of copper. This was an increase of 56.1% in the labor cost of copper mining in Arizona. The recovery of copper per man-hour was 40.50 lbs.

Comparative figures for the United States: in the base period 1947-1949; it took an annual average of 62,145,720 man-hours of labor at \$1.431 per hour to produce 82,875,491 tons of copper ore with a recovery of 1,625,975,640 pounds of equivalent copper; a labor cost of \$88,930,525 for copper mining or \$0.05470 per pound of copper. The recovery of copper per man-hour was 26.16 lbs.

In the 1962-1964 period, it took an annual average of 62,018,979 man-hours of labor at \$2.917 per hour to produce 150,622,238 tons of copper ore with a recovery of 2,325,518,000 pounds of equivalent copper; a labor cost of \$180,783,696 for copper mining, or \$0.0777 per pound of copper. This was an increase of 42.0% in the labor cost of copper mining in the United States. The recovery of copper per man-hour was 37.50 lbs.

With modern-day mining practiced all over the world, it is easy to imagine the effect of using a cost-divisor, in South Africa, for instance, amounting to $2\frac{1}{2}$ times the cost divisor used in the United States. And when wages in Africa are known to be much less than 40% of those in the United States, the spread must be at least double the present tariff of 1.7 cents per pound of copper.

For example, if we assume a recovery of 75.0 pounds of copper per man-hour of foreign labor (which assumes a minimum grade of only twice the U.S. ores), and a labor cost of \$1.167 per man-hour (which is 40% of U.S. hourly earnings), we arrive at a cost of \$ 0.01556 per pound of copper by foreign labor. This is 6.2 cents less than U.S. labor costs. As the object of a copper tariff was primarily to equate the difference in wage-rates, a proper tariff could be as much as 5.7 cents, (allowing a half-cent per pound freight on the foreign copper).

The effect of production curtailment in the United States brought about by imports of low-cost copper is also a handicap which domestic producers have to suffer. And when this curtailment results in closing a few of the large high-cost producers, the danger to our national security is obvious.

Foreign producers will acknowledge that their wage-rates often are less than one-fifth of those in the United States, but they will also maintain that they are saddled with additional labor costs in the form of special allowances for housing food hospital and other welfare costs. These are along the line of "fringe benefits", which, in Arizona amount to about twenty-five percent of the payroll and although not included in the above labor cost comparison, they would amount to more than enough to offset the fringe paid by the foreign producers.

Arizona Department of Mineral Resources

October, 1965

TABLE I

Because Inspiration Consolidated Copper Company is a large, well-managed copper producer in Arizona, and because its operations are so well integrated within the State, its record of costs should be typical of the change in production costs that has been suffered by the copper industry in the State.

Therefore, a study has been made of the Inspiration's reports to stockholders for the years 1951 and 1964, and the following table shows a comparison of the production cost for those two years:

Inspiration Consolidated Copper Co.

	<u>1951</u>	<u>1964</u>
Lbs. copper produced	78,249,439	124,122,000
Cost of deliveries, operating expenses, development, maintenance, and repairs, administrative and general expenses and taxes, other than Federal income taxes.	\$11,490,534.55	\$ 27,875,000
Cost per pound of copper produced.	\$ 0.14685	\$.22458
Percent increase in cost per lb. copper. 1951-1964		52.93%

Hence, if a peril point of 24.0 cents per pound of copper was satisfactory in 1951, then in 1964 the peril point should have been raised by at least 63%, or 12.7 cents per pound, making the new peril point at least 36.7 cents.

TABLE II

ARIZONA, UNITED STATES, AND WORLD MINE PRODUCTION OF COPPER, In Short Tons

E. & M. J. DOMESTIC PRICE OF COPPER
By Years 1912 - 1964 Incl.

Source: U. S. Geological Survey: Mineral Resources; U.S.B.M. Minerals Yearbooks

Year	ARIZONA		UNITED STATES		WORLD	E. & M. J.
	Tons	% of U. S. Prod.	% of World Prod.	Tons	% of World Prod.	Tons Price Per Pound
Beginning of Records 1874 - 1,759,221 thru 1911						
1912	182,519	29.2	16.2	624,547	55.5	1,125,656 16.341¢
1913	203,962	33.0	18.6	617,755	56.2	1,099,366 15.269
1914 1/	196,509	34.2	19.0	574,216	55.5	1,034,487 13.602
1915 1/	229,986	30.9	19.6	744,036	63.4	1,173,150 17.275
1916 1/	360,917	36.0	23.2	1,002,938	64.6	1,553,498 27.202
1917 1/	356,083	37.6	22.2	947,717	59.1	1,602,914 27.180
1918 1/	382,428	40.0	24.2	955,011	60.5	1,579,246 24.628
1919	269,050	44.4	24.6	606,167	55.3	1,095,697 18.691
1920	279,128	45.6	26.4	612,275	58.0	1,056,014 17.456
1921 2/	92,517	39.7	15.1	233,095	38.0	613,987 12.502
1912-1921	2,553,099	36.9	21.4	6,917,757	58.0	11,934,015 20.497¢
1922	200,022	41.5	21.4	482,292	48.2	935,374 13.382¢
1923	309,464	41.9	22.3	738,870	54.5	1,355,327 14.421
1924	338,876	42.2	23.0	803,083	54.5	1,472,712 13.024
1925	356,678	42.5	22.6	839,059	53.2	1,576,998 14.042
1926	361,648	41.9	22.7	862,638	54.0	1,596,147 13.795
1927	341,095	41.3	20.5	824,980	49.5	1,666,694 12.920
1928	366,138	40.5	19.2	904,898	47.5	1,903,672 14.570
1929	415,314	41.6	19.3	997,555	46.4	2,150,587 18.107
1930 3/	288,095	40.9	16.2	705,074	39.7	1,775,805 12.982
1931 3/	200,672	37.9	13.0	528,875	34.2	1,545,425 8.116
1922 to 1931	3,178,002	41.3	19.3	7,687,324	48.1	15,978,741 13.867¢

(Continued)

TABLE II (Continued)

Year	ARIZONA			UNITED STATES		WORLD	E.&M.J.
	Tons	% of U. S. Prod.	% of World Prod.	Tons	% of World Prod.	Tons	Price Per Pound
1932 3/	91,246	33.3	8.0	233,111	20.9	1,138,676	5.555¢
1933 3/	57,021	29.9	4.9	190,643	16.4	1,159,000	7.025
1934 3/	89,041	37.5	6.3	237,401	16.8	1,415,353	8.428
1935 3/	139,015	36.0	8.4	386,491	23.5	1,647,939	8.649
1936 3/	211,275	34.4	11.1	614,516	32.4	1,899,263	9.474
1937 —	288,475	34.3	11.2	841,998	32.8	2,567,916	13.167
1938 4/	210,797	37.8	9.3	557,763	24.5	2,274,045	10.000
1939 5/	262,117	36.0	10.6	728,320	29.4	2,481,277	10.965
1940 5/	281,169	32.0	10.5	878,086	32.7	2,688,510	11.296
1941 5/	326,317	34.1	11.2	958,149	33.0	2,903,458	11.797
1932 to 1941	1,956,473	34.7	9.7	5,631,478	27.9	20,175,437	10.566¢
1942 5/	393,387	36.4	12.9	1,080,061	35.5	3,039,041	11.775¢
1943 5/	403,181	37.0	13.2	1,090,818	35.6	3,064,394	11.775
1944 5/	358,303	36.8	12.5	972,549	33.9	2,866,000	11.775
1945 —	287,203	37.2	12.0	772,894	32.2	2,400,000	11.775
1946 —	289,223	47.5	14.1	608,737	29.6	2,056,000	13.820
1947 —	366,218	43.2	14.6	847,563	33.9	2,500,000	20.958
1948 6/	375,121	44.9	14.4	834,813	32.1	2,600,000	22.038
1949 6/	359,010	47.7	14.4	752,750	30.1	2,500,000	19.202
1950 —	403,301	44.4	14.4	909,343	32.5	2,760,000	21.235
1951 —	415,870	44.8	14.3	928,330	32.0	2,900,000	24.200
1942 to 1951	3,650,817	41.5	13.7	8,797,858	33.0	26,685,435	16.699¢

(Continued)

TABLE II (Continued)

YEAR	Tons	ARIZONA		UNITED STATES		WORLD	E.&M.J. Price Per Pound
		% of U. S. Prod.	% of World Prod.	Tons	% of World Prod.		
1952	395,719	42.8	13.1	925,359	30.6	3,020,000	24.200¢
1953	393,525	42.5	12.9	926,448	30.4	3,050,000	28.798
1954 ^{7/}	377,927	45.2	12.2	835,472	27.0	3,100,000	29.694
1955	454,105	45.5	13.3	998,570	29.2	3,420,000	37.491
1956	505,908	45.7	13.4	1,104,156	29.1	3,790,000	41.818
1957	515,854	47.5	13.3	1,086,141	27.9	3,890,000	29.576
1958	485,839	49.6	12.9	979,329	25.9	3,780,000	25.764
1959	430,297	52.2	10.7	824,846	20.5	4,020,000	31.182
1960	538,605	49.9	11.7	1,080,169	23.5	4,590,000	32.053
1961	587,053	50.4	12.1	1,165,155	24.0	4,850,000	29.921
1952 to 1961	4,684,832	47.2	12.5	9,925,645	26.5	37,510,000	31.238¢
1962	644,242	52.4	12.7	1,228,421	24.1	5,090,000	30.600¢
1963	660,977	54.5	12.7	1,213,166	23.3	5,210,000	30.600
1964	690,988 ^{8/}	55.4	12.7	1,246,780 ^{9/}	23.0	5,420,000 ^{10/}	31.960
1962 to 1964	1,996,207	54.1	12.7	3,688,367	23.5	15,720,000	31.059¢
1874 to 1964	ARIZONA ONLY 19,778,651 Tons at 20.9842¢ per pound = \$ 8,300,781,000						

October, 1965

NOTES: 1/ World War I 1914 - 1918.

2/ Post World War I Recession. Lasted about one year.

3/ Depression began in 1930; was at its worst in 1933; gradually improved till 1937.

4/ Recession in 1938. Recovery in 1939 caused by War demand.

5/ World War II began in 1939; copper consumption reached its height in 1944.

6/ In the year 1948 and the early months of 1949, copper was being produced in the United States at the rate of 68,000 short tons per month, imports were at the rate of 18,000 tons of blister copper and 22,000 tons of refined copper, and exports were at the rate of 12,000 tons per month. The price of copper averaged 22.5 cts. during this period, varying from 21 3/8 to 23 3/8 cts.

In March 1949 the copper import tax was suspended, and during the months following the suspension, domestic demand fell drastically, and for four months net domestic consumption of copper was at or below the level of domestic production, even though the latter was severely curtailed. During this period, imports continued at practically the same rate. The price of copper dropped from 23 3/8 cts. to 16 1/2 cts. per pound. Many mines were forced to close down, and the large low-cost producers curtailed production. The average monthly production dropped from a high of 78,000 to a low of 56,000 tons.

7/ Curtailment early in the year, and a series of strikes in August and September caused a loss in production of over 100,000 tons. Reduced consumption in the U. S. was offset by an appreciable rise in the use of copper outside of this country, chiefly Europe. Result: a short supply of copper at the end of the year.

8/ Highest annual production in history of Arizona.

9/ Highest annual production in history of United States.

10/ Highest annual production in history of the World.

TABLE III

U. S. PRODUCTION AND CONSUMPTION OF COPPER

Source: U.S.B.M.

YEAR	MINE PRODUCTION	SECONDARY PRODUCTION*	TOTAL	TOTAL ACTUAL CONSUMPTION	PRODUCTION AS % OF CONSUMPTION
1945	772,894	112,856	885,750	1,379,272	64.2
1946	608,737	136,909	745,646	1,187,009	62.8
1947	847,563	303,092	1,150,655	1,463,294	78.6
1948	834,813	284,026	1,118,839	1,420,584	78.8
1949	752,750	250,089	1,002,839	1,129,686	88.8
1950	909,343	260,704	1,170,047	1,424,434	82.2
1951	928,330	186,462	1,114,792	1,416,865	78.7
1952	925,359	173,904	1,099,263	1,479,732	74.3
1953	926,448	242,855	1,169,303	1,494,215	78.3
1954	835,472	212,241	1,047,713	1,254,729	83.5
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Totals					
1945-54	8,341,709	2,163,138	10,504,847	13,649,820	
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10-Yr. Avg.	834,171	216,314	1,050,485	1,364,982	77.0
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1955	998,570	246,928	1,245,498	1,502,004	82.9
1956	1,104,156	273,060	1,377,216	1,521,389	90.5
1957	1,086,141	248,015	1,334,156	1,347,815	99.0
1958	979,329	255,121	1,234,450	1,250,677	98.7
1959	824,846	261,588	1,086,434	1,463,031	74.3
1960	1,080,169	300,259	1,380,428	1,349,896	102.3
1961	1,165,155	279,511	1,444,666	1,462,830	98.8
1962	1,228,421	301,374	1,529,795	1,599,676	95.6
1963	1,213,166	314,643	1,527,809	1,744,273	87.6
1964	1,246,780	366,197	1,612,977	1,825,281	88.4
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Totals					
1955-64	10,926,733	2,846,696	13,773,429	15,066,872	
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10-Yr. Avg.	1,092,673	284,670	1,377,343	1,506,687	91.4

* Unalloyed Copper

TABLE IV

ESTIMATED ANNUAL COPPER PRODUCTIVE CAPACITY

ARIZONA, UNITED STATES, OTHER FREE COUNTRIES, COMMUNIST COUNTRIES

	TONS COPPER EST. By Arizona Dept. Mineral Resources End of 1961	EST. BY ENG& MINING JOURNAL Increase 1962-1969	TONS COPPER Est. at End of 1969
ARIZONA:			
Morenci	140,000		
New Cornelia	72,000		
Copper Queen	35,000		
Lavender Pit	38,000		
Sub-Total	285,000	15,000	300,000
Ray	72,000		72,000
Miami-Copper Cities	35,000		35,000
Inspiration	47,000	10,000	57,000
San Manuel	82,000	10,000	92,000
Magma	24,000	5,000	29,000
Silver Bell	20,000		20,000
Pima	18,000		18,000
Bagdad	12,000		12,000
Duval (Esperanza & Ithaca Peak(after 1964)	30,000	25,000	55,000
Mission	45,000		45,000
Miscellaneous	30,000		30,000
Sub-Total (Arizona)	700,000	65,000	765,000
OTHER STATES:			
Utah (Utah Copper	225,000	100,000	325,000
Montana (Butte)	130,000	60,000	190,000
Nevada (Ely & Yerington)	95,000	5,000	100,000
New Mexico (Chino)	100,000	15,000	115,000
Michigan (White Pine & Cal. & Hecla)	80,000	20,000	100,000
Miscellaneous	70,000	70,000	140,000
Sub-Total (Other States)	700,000	270,000	970,000
GRAND TOTAL - UNITED STATES	1,400,000	335,000	1,735,000
OTHER FREE COUNTRIES:			
Canada	500,000	164,000	664,000
Chile	650,000	550,000	1,200,000
Peru	205,000		205,000
Western Europe	140,000		140,000
Asia	240,000	50,000	290,000
Africa	1,100,000	186,000	1,286,000
Australia	100,000	70,000	170,000
Other Countries U.S.	65,000	65,000	130,000
Sub-Total - Free Countries other than/	3,000,000	1,085,000	4,085,000
GRAND TOTAL - ALL FREE COUNTRIES	4,400,000	1,420,000	5,820,000
Communist Countries	800,000	200,000	1,000,000
GRAND TOTAL - WORLD	5,200,000	1,620,000	6,820,000

TABLE v

COPPER MINING EMPLOYMENT, WAGES AND HOURS IN U. S. AND ARIZONA

Base Period (1947-1949) Compared with Three-Year Period (1962-1964)

Source: "Employment Earnings," U. S. Dept. of Labor
U.S.B.M. Mineral Yearbooks, "Arizona's Current
Employment Development." Arizona Employment
Security Commission.

	<u>"A"</u>		<u>"B"</u>		<u>"C"</u>		<u>"D"</u>	
	Number		Weekly		Weekly		Hourly	
	Of all Employees		Earnings		Hours		Earnings	
	ARIZONA	U.S.	ARIZONA	U.S.	ARIZONA	U. S.	ARIZONA	U. S.
Base Period								
1947-49 Avg.	10,700	27,100	\$ 64.20	\$ 63.11	44.83	44.10	\$1.432	\$ 1.431
Last Three Years								
1962	13,350	28,500	\$ 129.29	\$120.98	44.28	42.90	\$ 2.920	\$ 2.820
1963	13,393	27,800	133.81	124.48	44.56	43.06	3.003	2.891
1964	13,275	27,000	140.97	130.42	45.00	42.90	3.133	3.040
1962-64 Avg.	13,339	27,767	\$ 134.69	\$125.29	44.61	43.05	\$ 3.019	\$ 2.917

	<u>"E"</u>		<u>"F"</u>		Per Man	
	Annual Man Hours		Annual Earnings		Annual Earnings	
	"A" x "C" x 52		"E" x "D"		"F" ÷ "A"	
	ARIZONA	U.S.	ARIZONA	U.S.	ARIZONA	U.S.
Base Period						
1947-49 Avg.	24,943,412	62,145,720	\$ 35,718,966	\$88,930,525	\$3,338	\$ 3,282
Last Three Yrs.						
1962	30,753,060	63,577,800	89,798,935	179,289,396	6,726	6,291
1963	31,033,188	62,247,536	93,192,664	179,957,627	6,958	6,473
1964	31,063,500	60,231,600	97,321,946	183,104,064	7,331	6,782
1962-1964 Avg.	30,949,916	62,018,979	\$ 93,437,848	\$180,783,696	\$ 7,005	\$ 6,511

(Continued)

TABLE V (Continued)

	"G"		"H"	
	Tons Copper Ores		Pounds Equiv.* From Copper Ores	Copper Produced
	ARIZONA	U.S.	ARIZONA	U. S.
Base Period: 1947-1949 Avg.	38,082,754	82,875,491	748,056,267	1,625,975,640
Last Three Years				
1962	78,868,147	150,216,710	1,230,386,000	2,332,794,000
1963	80,615,132	146,449,540	1,249,982,000	2,271,150,000
1964	86,132,039	155,200,464	1,279,898,700	2,372,611,000
1962-64 Avg.	81,871,773	150,622,238	1,253,422,233	2,325,518,000

* Includes value of gold and silver recovered from copper ore, converted into pounds copper at average price.

	Tons Copper Ore Produced Per Man-Hour "G" ÷ "E"		Lbs. Equiv. Copper Produced Per Man-Hour "H" ÷ "E"		Earnings Per Man-Hour "D"	
	ARIZONA	U.S.	ARIZONA	U.S.	ARIZONA	U.S.
Base Period: 1947-49 Avg.	1.5268	1.3336	29.9901	26.1639	\$1.432	\$1.431
1962-64 Avg.	2.6453	2.4287	40.4984	37.4969	\$3.019	\$2.917
% Incr. in 15 Yrs.	73.26	82.12	35.04	43.32	110.83	103.85
Per Year	4.88	5.47	2.34	2.89	7.39	6.92

EXCESSIVE IMPORTS THREATEN STATUS OF U.S. BRASS MILL INDUSTRY *

Summary of Statement by James M. Kennedy, Chairman Revere Copper & Brass, Inc.

Historically the United States has been a net exporter of brass mill products.

In 1936 we exported 39,600,000 lbs. and imported 600,000 lbs.

In 1947 we exported 58,600,000 lbs. and imported 900,000 lbs.

In succeeding years our export position declined until in 1951, for the first time, we became net importers to the extent of 13,000,000 lbs. Since 1951 imports have climbed steadily to a record of 199,000,000 pounds in 1959, against exports of only 16,000,000 pounds, which in terms of the 1947 balance, means an annual loss of over 240,000,000 pounds to U. S. industry.

In 1960 brass mill shipments will be down an estimated 55 percent from the 1943 level to 812,000 short tons. Obviously, we must not suffer any further tariff concessions. Today we permit and encourage the importation of products for which we have domestic capacity double the yearly domestic market in the foreseeable future.

Labor rates in England, Western Europe and Japan are one-eighth to one-third of ours. This, added to their comparably lower rates of factory overhead, salaried personnel and selling and administrative expense, based on their respective standards of living, accounts for an estimated 25 percent differential in manufacturing costs.

"Foreign man-hour production efficiency is a match for ours, their quality standards are the same. The old theory that the United States can out-produce, per man-hour, any country in the world is, in respect to the brass mill industry, obsolete. After the war innumerable foreign technical teams visited this country and our mills at the invitation of the U. S. Government. They obtained the information they needed to rehabilitate their industries and, with funds supplied by the Marshall Plan and our foreign aid, installed the latest and best equipment.

Little did we realize that this would boomerang and that part of their output would be channeled into this country at prices so low the domestic price level would be consistently forced down in a continuing effort to approximate - since we could not profitably meet - the foreign selling price."

When it comes to the impact of imports of copper manufactures on domestic labor, we do have a measurable impact. Here imports have hurt in three ways:

1. The domestic industry has lost approximately 200,000,000 pounds of brass mill shipments.

2. Its profits have been seriously impaired by lower prices necessitated by low-priced foreign competition.

3. American labor has lost 2,857 jobs in the brass mill industry. (This is computed on the basis of 35 pounds per man-hour and 2,000 hours per year for an annual production, per individual employee, of 70,000 pounds, divided into 200,000,000 pounds).

*METALS - Monthly Supplement - October, 1960

Trade Bill Lacks Minimum Safeguards, Says Veltfort.

The peril-point and escape-clause procedures of the Administration's Trade Bill (H.R. 11970) are inadequate to preserve essential domestic industries against unfair foreign competition. They should be replaced with strengthened versions of the procedures in the existing Trade Agreements Act. Moreover, the new bill should contain provisions which empower the Tariff Commission to convert specific duties into their ad valorem equivalents in affording relief, and thereby compensate for the drastic inflation in values that has occurred since the specific duties were fixed by Congress in the 1930's. Finally, the adjustment assistance provisions in the Administration bill, which are supposed to aid workers thrown out of work by imports, should be stricken from the bill.

The above views highlighted the testimony of T. E. Veltfort, managing director of the Copper & Brass Research Association, when he appeared before the Senate Finance Committee. Members of the association are 37 companies with copper and brass mills in 15 different states.

H. R. 11970, entitled "Trade Expansion Act of 1962", Veltfort said, does not provide the minimum safeguards necessary to preserve basic domestic industries essential to our economy. The existing law, he explained, required the Tariff Commission to find for each product a specific limit (peril point) below which U. S. negotiators may not reduce our tariffs without causing or threatening serious injury to a domestic industry. The proposed bill would change this, he continued, and instead of finding a specific peril point, the Tariff Commission would merely make a general inquiry "as to the probable economic effect" of further tariff reductions.

"If a proceeding before the Tariff Commission prior to our negotiation of a trade agreement is to mean something", asserted Veltfort, "the vague and loose standards now found in H. R. 11970 should be changed to accord with the present law on peril-point proceedings".

Concerning the Escape Clause provision, Veltfort said his industry in general supported the amendment offered August 7 by Senator Prescott Bush of Connecticut, with one exception. He believes it is essential that the recommendation of the Tariff Commission for the relief of an industry under the Escape Clause should be mandatory on the President unless he can get either the Senate or the House to approve an alternative suggestion.

"To offer a dole to the industry's displaced workers, or to retrain them to new tasks that are already hard to find for our millions of unemployed, or to uproot them from their life-long environments, is not our historic way of solving our problems," he concluded.

Arnot Testifies in Washington

READING ATTACKS TUBE IMPORTS

"H. J. Arnot, vice president of Manufacturing of the Reading Tube Co. of Reading, Pa., yesterday registered a strong protest against President Kennedy's Trade Expansion Act of 1962 and called for legislation which could continue peril point and escape clause provisions.

Testifying before the Senate Finance Committee, Mr. Arnot said the "influx of cheap-labor copper tube has almost wiped out profit margins and threatens destruction of the domestic copper industry."

Mr. Arnot told the committee that as a result of the price squeeze created by foreign imports, the Reading Company has reduced its employment by 16.1% to cut its losses and that much of this has been in research and development personnel.

This, he said, has weakened the creative ability of the industry to meet the demands of the American economy as well as the needs of the military.

Citing Reading Tube's extensive contributions to National Defense in World War II, he warned that the country might have to rebuild the essential copper tube industry from scratch in a future national emergency if the industry is "destroyed by inadequate tariffs in a period of complacency."

Mr. Arnot submitted letters from the Chamber of Commerce of Reading and Local 3885 of the United Steelworkers of America describing the economic impact on that community of foreign imports of copper tubing.

Bill's Outlook

The Senate Finance Committee today concludes public hearings into the trade bill, which was passed by the House some two months ago.

According to present schedules, the trade bill will be "reviewed" by the Senate Finance Committee in closed sessions following the public hearings and reported to the floor of the Senate before the tax bill, which also has been passed by the House.

If the bill eventually passed by the Senate is close to the House-passed measure, reconciliation of differences may be easy. But if the Senate bill includes many drastic changes, reconciliation by the House and the Senate conferees could drag on into September.