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ECONOMIC INTELLIGENCE REPORT

**THE COPPER TRADE
OF THE SINO-SOVIET BLOC IN 1955**



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CIA/RR 110

(ORR Project 24.1971)

CENTRAL INTELLIGENCE AGENCY
Office of Research and Reports

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FOREWORD

Estimates of the amount of copper imported from the Free World by the Sino-Soviet Bloc have been made periodically by numerous intelligence organizations of the US government, but because of differences in [] the methodologies employed, the estimates have varied widely. Such variations emphasize the need for a more thorough analysis of the imports of copper by the Sino-Soviet Bloc. This report presents an analysis [] on the subject; and although this report has not been coordinated with other agencies, the major conclusions have been approved by the Economic Intelligence Committee.

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A shorter report covering the trade in copper of the Sino-Soviet Bloc in 1956, utilizing the methodology developed in this report, is planned for a later publication. As long as trade in copper continues to be of international concern, similar reports on the subject will be published annually.

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(ORR Project 24.1971)

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THE COPPER TRADE OF THE SINO-SOVIET BLOC IN 1955*

Summary

The production of copper in the Sino-Soviet Bloc has been inadequate for many years. The Bloc has attempted to alleviate this deficiency mainly by importing sizable quantities from the Free World and also has made extensive use of substitute materials. Moreover, the Bloc, particularly the USSR, has made significant withdrawals from stockpiles in order to meet current needs.

In 1955, imports of copper from the Free World by the Sino-Soviet Bloc totaled about 95,000 metric tons,** accounting for about 17 percent of the new supply in the Bloc. The amount imported in 1955 represents a decline of about 25 percent from the level of almost 125,000 tons imported in 1954. This decline reflected the increased demands for copper by all industrialized nations at a time when available supplies were reduced by strikes in the major copper producing countries of the Free World. As a result, prices were raised to the highest levels in history.

Coincident with the decline in the volume of imports of copper by the Sino-Soviet Bloc was a shift in the form in which the copper was imported. Whereas most of the imports of copper by the Bloc before 1955 were refinery shapes, nearly 80 percent of the imports in 1955 were in the form of bare wire measuring 6 millimeters (mm) or less in diameter. The shift to copper wire resulted largely from a decision by COCOM (the Coordinating Committee on International Export Controls) in mid-1954 to remove such copper from the list of items to be embargoed to the Bloc but to maintain an embargo on shipments of other forms of copper.***

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 September 1957.

** Tonnages are given in metric tons throughout this report.

*** For a description of the controls on trade between the Free World and the Bloc, see II, p. 4, below.

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Most of the imports of copper by the Sino-Soviet Bloc in 1955 were acquired in Free World markets at competitive prices. The principal supplier was the UK, followed by West Germany and Japan. The total value of the imports of copper by the Bloc in 1955 amounted to about US \$100 million.* Although the volume of imports of copper in 1954 was considerably larger than in 1955, the value of such imports was about the same in both years.

I. Introduction.

For the past decade the production of copper in the Sino-Soviet Bloc has fallen short of demand. The deficit in copper of the Bloc in 1946-55, which amounted to almost 900,000 tons over the 10-year period, is shown in Table 1.

Table 1

Deficit in Copper of the Sino-Soviet Bloc a/
1946-55

<u>Year</u>	<u>Thousand Metric Tons</u>		
	<u>Demand</u>	<u>Production</u>	<u>Deficit</u>
1946	174	145	29
1947	199	161	38
1948	256	208	48
1949	316	260	56
1950	371	286	85
1951	431	329	102
1952	482	374	108
1953	514	384	130
1954	563	432	131
1955	618	458	160

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* Dollar values are given in US dollars throughout this report.

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The attempts of the Sino-Soviet Bloc to meet this deficit have included an extensive program of using substitute materials in many applications, the withdrawal of significant quantities of copper from stockpiles, and the importation of sizable quantities of copper in a variety of forms from the Free World.

Over the past 10 years the Sino-Soviet Bloc has taken approximately 100,000 tons of copper out of stockpiles to meet current needs. ^{2/} These withdrawals are believed to have taken place mainly in the USSR, which during World War II received large lend-lease shipments of copper, primarily from the US. From mid-1941 until mid-1945, nearly 400,000 tons of copper arrived in the USSR from the US alone. ^{3/} These shipments are believed to have enabled the USSR to accumulate a fairly substantial stockpile of copper which has been used to reduce the gap between production and demand.

Sufficient information is available to establish that the Sino-Soviet Bloc has imported rather substantial quantities of copper in the past 10 years. For some of these years, information on the amounts of copper imported by the Bloc is available in data on trade reported by exporting countries of the Free World. For other years, data on trade are inadequate as a measure of imports by the Bloc because of international political and economic conditions which precluded the complete reporting by most of the countries supplying copper to the Bloc.

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There are no reported data on trade in copper within the Bloc,

[redacted] a few shipments of copper, the production of copper, and the demand for various forms of copper within the Bloc, as well as a few trade agreements between countries of the Bloc. This information is too incomplete to make a firm estimate of the total trade, but it does indicate a pattern of movement.

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Although some information is available on the trade in copper of the Sino-Soviet Bloc for each of the years since World War II, data are sufficiently complete to warrant a detailed analysis for 1955 only. Wherever the data permit, comparisons have been made with 1954.

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II. Imports from the Free World.

A. Chronology of Controls.

Before December 1947 there were no controls on exports of copper from countries of the Free World to the Sino-Soviet Bloc. In December 1947 the US National Security Council decided that steps should be taken to halt exports from the US to the Bloc of commodities which were critically scarce in the US or which would contribute to the military potential of the Bloc. To implement this decision, most exports to the USSR and its European Satellites were placed under mandatory licensing controls by the Department of Commerce in March 1948. At first the US attempted to obtain parallel action by other countries of the Free World through bilateral negotiations, but by mid-1949 it was realized that a multilateral approach to the problem of controls was required. Consequently the representatives of several Western European powers and of the US held informal meetings in the latter half of 1949 as a Consultative Group (CG). By November 1949 the CG had been formed on a permanent basis with representatives of Belgium, Denmark, France, Italy, the Netherlands, Norway, the UK, and the US. As a result of the meetings in November 1949, International Lists* were drawn up, and extensive discussions followed concerning the content of the lists, definitions of the items covered, devices for controlling exports, and other problems connected with the lists. In 1950 the CG established COCOM** as a permanent working group of the CG in Paris. 4/

In August 1950, COCOM placed copper on IL-II under quantitative control. In April 1951, all forms of copper, including ores and concentrates, unwrought forms, and semifinished forms such as

* Items which are embargoed to the Soviet Bloc are on International List I (IL-I); those subject to quantitative control, on International List II (IL-II); and those subject to surveillance, on International List III (IL-III). The items on IL-III are of strategic significance, but information about the requirements of the Bloc for these items is insufficient to establish the necessity for definitive control. Members of COCOM are therefore required only to report their monthly export statistics for items on IL-III. Subsequent agreements embargoed the export to Communist China of items on all three lists as well as various additional items.

** The members of COCOM are Belgium, Canada, Denmark, France, Greece, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Turkey, the UK, the US, and West Germany.

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wire, were placed on IL-I for embargo. Exports of all forms of copper to the Sino-Soviet Bloc remained embargoed until mid-August 1954, at which time bare copper wire (subsequently defined as measuring 6 mm or less in diameter) was reclassified from IL-I to IL-III. ^{5/} Exports of all forms of copper remained embargoed to Communist China. These controls on exports of the various forms of copper continued through 1955.

B. Volume of Imports.

A summary of imports of copper from the Free World by the Sino-Soviet Bloc in 1954 and 1955 is shown in Table 2. Examination of this table reveals that total imports in 1955 fell sharply from the level of 1954 and that there was a pronounced difference in the form of copper imported in each of the 2 years.

Table 2

Summary of the Volume of Imports of Copper
from the Free World by the Sino-Soviet Bloc
1954 and 1955

	Thousand Metric Tons	
<u>Form of Copper</u>	<u>1954 ^{a/}</u>	<u>1955 ^{b/}</u>
Wire and cable		
Bare	27.3	74.3
Covered	20.5	9.7
Other	74.4	9.6
Unspecified	2.0	0.7
Total	<u>124.2</u>	<u>94.3</u>

a. Derived from Table 4, Appendix A, p. 17, below.

b. Derived from Table 5, Appendix A, p. 18, below.

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1. Decline in Total Imports.

The decline in imports of copper from the Free World by the Sino-Soviet Bloc in 1955 may have been due in part to the inadequate supply of copper and the increased demand for copper in the Free World.

In the US and in Chile and later in Northern Rhodesia, strikes in mines and refineries are estimated to have cost the world about 115,000 tons of copper in 1954 and more than 130,000 tons in 1955. 6/ In 1954, the reserve stocks of copper in primary producing countries had been almost exhausted. The production of refined copper in the Free World amounted to about 3 million tons in 1954 and about 3.3 million tons in 1955. 7/ In 1955, when supplies of copper were reduced, demand was at an alltime high as industrial production in the Free World reached record levels.

In the meantime the USSR was increasing its own production of copper, which is estimated at 377,000 tons in 1955, an increase of about 12 percent over the production in 1954 of 337,000 tons. 8/ Moreover, the demand for copper in the Sino-Soviet Bloc may have been abated somewhat by the substitution of aluminum and other materials for copper in many uses.

2. Shift in the Form of Imports.

Although the imports of all forms of copper from the Free World by the Sino-Soviet Bloc in 1955 declined from the level of 1954, imports of bare wire increased significantly. In 1954, bare wire represented about 22 percent of the imports of copper by the Bloc, but in 1955 it represented almost 80 percent. It is probable that this shift to wire resulted from the changes in COCOM controls. The removal of the embargo on wire and the initiation of controls on financial transactions and transshipments involving the remaining forms of copper still under embargo almost surely were decisive in changing the form of the copper imported by the Bloc.

a. Reclassification of Wire.

All forms of copper were subject to embargo by members of COCOM before 16 August 1954, when 6-mm bare wire was placed on IL-III for surveillance. Several reasons may be adduced for the preference of the Sino-Soviet Bloc for copper in

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forms other than wire during the period when all forms of copper were embargoed. First, the smelter and refinery products which made up the bulk of the imports by the Bloc in this period are items of lower cost than wire, which is a semimanufactured product. Second, because the manufacture and distribution of wire involve additional firms and individuals in several countries, clandestine shipments of wire were more likely to be detected by COCOM than were clandestine shipments of primary forms. Finally, because of COCOM controls, the Bloc may have been able to obtain copper more easily from countries not belonging to COCOM, and these countries mainly produced primary forms of copper rather than wire.

The large increase in the imports of copper wire by the Sino-Soviet Bloc after this wire was removed from IL-I also was determined by considerations of price and of availability. The Bloc was then able to go into the free market and purchase wire at competitive prices, thus eliminating the cost of forged documents, the higher costs of transportation, the unnecessary middlemen who were employed merely to complicate the tracing of the transaction, and the other costs incident to clandestine procurement. Moreover, a wider market was now available to the Bloc, and shipments of copper became more regular, thus eliminating much of the uncertainty as to supply.

b. Other Forms of Control.

Until 1955 the embargo imposed by COCOM on certain exports to the Sino-Soviet Bloc did not prohibit the furnishing of financial and forwarding services for these transactions. As a result, firms and individuals in some of the countries belonging to COCOM provided such services. In January 1955 the UK imposed controls on transactions involving such financial services. The US and Canada already had imposed similar controls, and other members of COCOM stated that their existing exchange controls would be used for this purpose.

Another weakness in the COCOM system was the lack of controls on transshipments, which permitted a number of shipments of embargoed copper to transit ports of countries belonging to COCOM en route to the Bloc. In order to reduce this movement, COCOM initiated the TAC (Transit Authorization Certificate) Scheme in January 1955. The countries participating in this scheme were required to issue transit certificates for all goods under embargo transiting their ports en route to the Bloc.

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C. Value of Imports.

The dollar value of imports of copper from the Free World by the Sino-Soviet Bloc was about \$100 million in both 1954 and 1955, as shown in Table 3. Although imports of copper in 1954 were greater than in 1955, the average value was lower.

Table 3

Summary of the Value of Imports of Copper
from the Free World by the Sino-Soviet Bloc
1954 and 1955

	Million US \$	
<u>Form of Copper</u>	<u>1954</u>	<u>1955</u>
Wire and cable		
Bare	21	75
Covered	23	15
Other	59	10
Unspecified	2	1
Total	<u>105</u>	<u>101</u>

a. Derived from Table 6, Appendix A, p. 21,
below.

About 84 percent of the total volume of copper imported by the Sino-Soviet Bloc in 1955 was purchased through legitimate commercial channels at competitive prices in many of the countries producing wire in the Free World. Another 8 percent was purchased from Finland at prices which were below those paid to other countries. The remaining 8 percent, consisting of the basic forms which have continued to be affected directly or indirectly by the embargo, was acquired largely through clandestine means at premium prices.

Sufficient evidence is available to indicate that the Sino-Soviet Bloc has been well aware of the situation regarding prices in

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the world copper market and has negotiated a large number of its copper contracts on the basis of prices on the London Metal Exchange (LME). This practice seems to have been general, regardless of the origin of the material or the means by which it may have been procured. References to the negotiations for the purchase of bare wire in countries of the Free World indicate that contracts were concluded at the cash or settlement price* on the LME prevailing on the day of sale, plus varying premiums.** Monthly average prices of standard wirebars on the LME fluctuated erratically throughout 1955, although there was a general upward trend in their movement from about \$830 per ton in January to about \$1,090 in December.*** Prices of bare wire ranged from between \$800 and \$900 early in the year to as high as \$1,190 per ton at the end of the year.****

Purchases of other forms of copper, chiefly cathodes and wirebars, also generally were made on the basis of the price on the LME plus some premium. The premiums in these cases represented payments for the concealment of the transactions. Payments for forged documents, extra costs of transportation, and profits for uneconomic middlemen were included in these premiums. Except in the case of Finland, data on the total value of copper other than wire which was imported from the Free World by the Sino-Soviet Bloc are fragmentary. The average unit value has been estimated at approximately \$1,000 per ton.

Because most of the copper imported from the Free World by the Sino-Soviet Bloc moved by sea, the basis for almost all purchases by the Bloc has been either f.o.b. a Western European port or c.i.f. a European Satellite port. Material destined for a European Satellite also may be sold c.i.f. a port outside the Bloc

* The spread between the average cash price and the settlement price on the LME is negligible.

** The term premium refers to the relationship between the prices of primary forms and wire. The price for wire apparently is determined by using the price of copper metal as a base and adding to it a sum which reflects the value added by manufacture.

*** These prices have been based on the mean of the bid and asked cash quotations per long ton at the close of the morning session of the LME and converted at the rate of US \$2.80 to UK £ 1. 9/

**** The lower end of this range is below the average price of wirebars early in 1955 largely because the average value of the Finnish exports was considerably below the average price in the Free World.

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and be forwarded overland by rail or by inland waterway at the buyer's expense. The provisions of contracts for transactions involving Finland are not known. Transportation services of both the Free World and the Bloc are employed in the movement of such copper to the Bloc.

III. Intra-Bloc Trade.

The information available on trade in copper within the Sino-Soviet Bloc suggests that copper follows the general movement of most other commodities within the Bloc. The less industrialized countries -- Albania, Bulgaria, and Rumania -- export unrefined material to the USSR, Czechoslovakia, East Germany, and Hungary. Refined and semifinished copper moves in the opposite direction, probably in amounts roughly equivalent to the copper content of the unrefined material originally shipped. East Germany and Czechoslovakia import refined copper for the production of machinery and equipment, part of which is exchanged for copper with other Satellites and with the USSR. Since World War II, Communist China, North Korea, and North Vietnam appear to have been importers only.

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APPENDIX A

METHODOLOGY

1. Derivation of Estimates.

a. Estimates for 1955.*

In the absence of official statistics from the Sino-Soviet Bloc on its trade in copper,** the volume of such trade must be estimated, partly from data on trade released by the exporting countries of the Free World [redacted] Such data are usually fragmentary and often obscure. Information published by the various exporting countries of the Free World lacks uniformity in the classification of commodities, does not supply details on transshipments, may be incomplete in describing shipments and their destinations, and in some cases appears too late for use in current estimates. [redacted]

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* See Table 5, p. 18, below. Imports in 1954 have not been analyzed in the same manner as those in 1955. Estimates of clandestine shipments of copper to the Bloc in 1954 are those made in a US-UK conference on the imports of copper by the Bloc, and most of the information on all other exports of copper to the Bloc was derived from reported data on trade. For a tabular presentation of these estimates, see Table 4, p. 17, below.

** The release of Soviet statistics on nonferrous metals is punishable under a decree of the Council of Ministers dated June 1947, which declared such information to be a state secret. Other countries of the Bloc have adopted the same policy, if not the same legal restrictions, although there is an occasional exception, such as the release by the Hungarians in their statistical handbook for 1955 of figures on the production of aluminum. 10/

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[redacted] 50X1

[redacted] no 50X1

reason to believe that the reported data on trade were unreliable, and therefore these data were used in making the estimates included in this report. [redacted] 50X1

[redacted] 50X1

The copper imported by the Sino-Soviet Bloc in 1955 can be divided into three general categories: covered wire and cable, bare wire and cable, and other forms of copper. The estimate of the imports of covered wire and cable, representing about 10 percent of the total, was derived from the reported data on trade. The estimate of the imports of copper in forms other than wire and cable, also representing about 10 percent of the total, was based on the reported data on trade of certain countries not belonging to COCOM

[redacted] 50X1

[redacted] The figure for the remaining 80 percent 50X1

of the total, that is, bare wire and cable, was derived from data on trade reported by exporting countries of the Free World [redacted] 50X1

[redacted] 50X1

Covered wire and cable, although frequently considered to be an item of electrical equipment, was included in this report to complete the coverage of the copper trade of the Sino-Soviet Bloc. This practice generally has been followed by the intelligence community in estimating the imports of copper by the Bloc. 11/ Inclusion of covered wire and cable in this report also prevents the confusion which probably would result from having two different estimates of imports of copper by the Bloc, one including and the other excluding this category.

Because it was legal to export copper wire measuring 6 mm or less to the Soviet Bloc in 1955, members of COCOM reported such exports in their official statistics. Some countries not belonging to COCOM also reported on copper exported to the Bloc. An

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analysis and evaluation of other information, however, indicated that reported figures on trade were not complete. Data on transshipments through the Netherlands, Belgium, and the port of Hamburg were used to adjust the reported figures. Of the 85,000 tons of copper other than covered wire and cable which the Bloc is estimated to have imported in 1955, about 75,000 tons, or almost 90 percent, were included in the adjusted reported data on trade.

About 80 percent of these exports of copper other than covered wire and cable which appeared in reported data on trade, or a little more than 60,000 tons, was reported by the exporting countries of the Free World. The remaining 20 percent was derived from information on transshipments. The principal question to be answered before using data on transshipment is whether the data refer to copper reported by an exporting country and merely observed at a later point in its voyage or to copper that did not appear in the statistics on exports. In the first situation, data on transshipment would not be added to reported figures; in the second, such data would be added.

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b. Value of Imports.**

The value of imports of copper from the Free World by the Sino-Soviet Bloc in 1954 and 1955 is estimated at about \$100 million in each year. Because almost no information was available about the price paid by the Bloc for these imports, indirect information was used in deriving estimates. The value of most of the copper wire and cable imported since mid-August 1954 was estimated on the basis of information on export licenses granted by members of COCOM. The prices paid for embargoed copper in 1954 and for most of the copper in forms other than wire and cable in 1955 were estimated on the basis of intelligence information. The average value of US exports of covered wire and cable in 1955 was used in estimating the value of such imports by the Bloc in 1955. Only in the case of Finnish exports in 1955 were the reported values used.

* See Table 5, p. 18, below.

** See Table 6, p. 21, below.

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2. Tabular Summary of Estimates.

The estimates derived by the means just described are presented in the tables which follow. The estimates of the volume of imports of copper from the Free World by the Sino-Soviet Bloc in 1954 are shown in Table 4*. The estimates of the volume of such imports in 1955 are shown in Table 5.** The estimates of the value of such imports in 1954 and 1955 are shown in Table 6.***

* Table 4 follows on p. 17.
** Table 5 follows on p. 18.
*** Table 6 follows on p. 21.

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Table 4

Volume of Imports of Copper from the Free World
 by the Sino-Soviet Bloc
 1954

Form of Copper	Metric Tons Amount
Wire and cable	
Bare	
From Finland	5,327 a/
From other countries	22,009 b/
Total	<u>27,336</u>
Covered	
Total	<u>20,500 c/</u>
Other	
From Finland	1,437 d/
From other countries	73,000 e/
Total	<u>74,437</u>
Unspecified	
Total	<u>2,000 f/</u>
Grand total	<u>124,273</u>

a. Sum of 1,311, 14/ 986, 15/ and 280 16/ (these 3 figures represent exports to the Bloc under Finnish tariff item 64-003, believed to be bare wire); also 2,683, 17/ 62, 18/ and 5 19/ (these 3 figures represent exports to the Bloc under Finnish tariff item 64-006, principally uncoated copper cable).

b. Sum of 7,000, 20/ 58, 21/ 493, 22/ 1,000, 23/ 788, 24/ 56, 25/ 262, 26/ 2, 27/ 1,193, 28/ 300, 29/ 175, 30/ 1,500, 31/ 220, 32/ 572, 33/ 954, 34/ 653, 35/ 500, 36/ 4,985, 37/ 951, 38/ and 347 39/.

c. This figure was derived by a complex methodology, based on many sources, impractical to reproduce here. The methodology for this estimate are available in CIA files.

d. Sum of 1,012 40/ and 301 41/ (representing exports to the Bloc under Finnish tariff item 64-001, unworked copper); also 120 42/ and 4 43/ (representing exports to the Bloc under Finnish tariff item 64-004, copper plates and sheets).

e. 44/.

f. Rounded from the sum of 12, 45/ 17, 46/ 467, 47/ 622, 48/ 15, 49/ 316 50/ and 582 51/. The figure of 2,000 tons is tenuous because so little is known about the copper which was allocated to the firms under the Administration of Soviet Enterprises in Austria (USIA). Some of this copper might have entered the Bloc in the form in which it was imported by Austria or in fabricated form. There is some evidence to suggest that the figure might be too low.

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Table 5
Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc a/*
1955

		Metric Tons									
Form of Copper	Country of Origin	USSR	Poland	Czechoslovakia	Hungary	East Germany	Rumania	Communist China	Unspecified	Total	
Wire and cable											
Bare											
COCOM members											
	Belgium	3,800 b/	495 c/	450 d/	0	0	0	0	0	4,745	
	Japan	4,141 e/	0	4,614 f/	2,533 g/	497 h/	401 i/	1,400 j/	0	13,586	
	Netherlands	484 k/	1,024 l/	402 m/	100 n/	100 o/	300 p/	0	0	2,410	
	UK	23,313 q/	1,729 r/	978 s/	1,818 t/	117 u/	0	0	0	27,955	
	West Germany	7,640 v/	1,375 w/	710 x/	855 y/	1,401 z/	798 aa/	1,000 bb/	0	13,779	
	Other	0	0	0	300 cc/	0	0	0	0	300	
	Subtotal	39,278	4,623	7,154	5,706	2,115	1,492	2,400	0	62,875	
Other countries											
	Austria	0	607 dd/	763 ee/	0	0	0	0	0	1,370	
	Finland	4,703 ff/	690 gg/	0	0	0	0	2 hh/	0	5,395	
	Sweden	68 ii/	1,794 jj/	123 kk/	38 ll/	556 mm/	0	0	0	2,579	
	Other	51 nn/	935 oo/	735 pp/	0	150 qq/	0	0	0	1,871	
	Subtotal	4,822	4,026	1,621	38	706	0	2	0	11,215	
Unspecified countries											
	Subtotal		201							201	
	Total	44,200	8,850	8,775	5,744	2,821	1,492	2,402	0	74,291	
Covered											
	Total	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2,700 rr/	2,700	
Other											
	Austria	500 ss/	0	508 tt/	398 uu/	0	0	0	0	1,406	
	Finland	310 vv/	1,278 ww/	0	0	0	0	125 xx/	0	1,713	
	Other	198	4,133	821	803	340	43	46 yy/	99 zz/	6,483	
	Total	1,008	5,411	1,329	1,201	340	43	171	99	9,602	
Unspecified											
	Total	0	352 aaa/	0	300 bbb/	51 ccc/	0	0	0	703	
	Grand total	45,208	14,613	10,104	7,245	3,212	1,532	2,573	2,799	94,296	

* Footnotes for Table 5 follow on p. 19.

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Table 5

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc a/
1955
(Continued)

- a. Most of the figures in this table were derived by adding the tonnages reported in a large number of reports and are documented in the footnotes which follow. Some of the figures were derived by a complex methodology, [redacted] impractical to reproduce here. The methodology [redacted] for all estimates not specifically documented are available in CIA files.
- b. Sum of 2,000, 82/100, 73/100, 83/200, 25/100, 26/250, 27/250, 28/300, 29/500 and 60/.
- c. Sum of 25, 61/25, 62/124, 63/85, 64/50, 65/78, 66/ and 108 67/.
- d. Sum of 50, 65/100, 62/100, 70/100, 71/ and 100 72/.
- e. Transshipped through the Netherlands. 73/
- f. Sum of 414, 74/150, 75/350, 76/150, 77/250, 78/150, 79/1,150, 80/100, 81/800, 82/1,000, 83/50, 84/ and 50 85/.
- g. Transshipped through the Netherlands. 85/
- h. Sum of 370 87/ (transshipped through Belgium-Luxembourg), 50 88/ and 77 89/.
- i. Transshipped through the Netherlands. 90/
- j. This amount was reported by Japan as exported to Poland 91/. It is believed, however, that the figure represents shipments of 500 tons 92/ and 900 tons 93/ which were purchased by the Polish firm TRANSACTOR for Communist China. Accordingly, this tonnage has been transferred from Poland to China.
- k. Sum of 195, 94/15, 95/100, 96/150, 97/ and 24 98/.
- l. Sum of 100, 99/75, 100/155, 101/120, 102/244, 103/62, 104/ and 268 105/.
- m. Sum of 295 106/ and 107/107/.
- n. 108/
- o. 109/
- p. 110/
- q. Sum of 2,327, 111/1,011, 112/22, 113/712, 114/985, 115/2,323, 116/2,350, 117/2,440, 118/5,469, 119/1,638, 120/ and 4,036 121/.
- r. Sum of 65, 122/9, 123/356, 124/508, 125/598, 126/ and 193 127/.
- s. Sum of 190, 128/294, 129/118, 130/203, 131/ and 213 132/.
- t. Sum of 126, 133/633, 134/132, 135/399, 136/254, 137/203, 138/ and 71 139/.
- u. 140/
- v. Sum of 1,307, 141/193, 142/200, 143/2,097, 144/30, 145/152, 146/846, 147/ and 2,815 148/.
- w. West Germany reported exports to Poland of the following tonnages: 2, 149/103, 150/147, 151/250, 152/1,220, 153/ and 693 154/. On the basis of a complex methodology, impractical to reproduce here, it has been estimated that 1,000 of the 2,375 tons were shipped to Communist China. Accordingly, the 1,000 tons has been transferred from Poland to China.
- x. Sum of 360, 155/100, 156/100, 157/ and 150 158/.
- y. Sum of 90, 159/60, 160/50, 161/100, 162/325, 163/1, 164/ and 229 165/.
- z. Transshipped through the Netherlands. 166/
- aa. Sum of 295, 167/500, 168/2, 169/ and 1 170/.
- bb. See footnote v, above.
- cc. Sum of 200 (from Denmark) 171/ and 100 (from Italy) 172/.
- dd. Sum of 168, 173/34, 174/100, 175/56, 176/218, 177/ and 31 178/. Reports for the earlier months of 1955 do not identify copper wire as such. Copper in other forms, however, is identified as cathodes, sheets, or similar shapes. Therefore, when copper was described only as copper in a report which also contained copper described as cathodes or some similar form, it was assumed that the undescribed copper was wire.
- ee. Sum of 206, 179/159, 180/120, 181/183, 182/ and 95 183/. (See comment in footnote dd, above.)
- ff. 184/
- gg. Finland reported 1,322 tons of bars and wire exported to Poland. 185/ A trade agreement with Poland called for delivery by Finland in 1955 of about 900 tons each of electrolytic copper and copper scrap/products. 186/ There were 690 tons of "copper bars and wire" delivered in the first quarter of 1955. 187/ No additional exports to Poland of this description or of wire alone were reported by Finland. In view of the trade agreement and of the fact that no wire was reported and that exports of 227 188/, 227 189/, and 177 190/ tons of wirebars and bars were reported, it has been assumed that the 690 tons of "copper bars and wire" were wire.
- hh. 191/
- ii. Transshipped through the Netherlands. 192/
- jj. Transshipped through the Netherlands. 193/

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Table 5

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc
1955
(Continued)

kk.	Transshipped through the Netherlands.	<u>194/</u>
ll.	Transshipped through the Netherlands.	<u>195/</u>
mm.	Transshipped through the Netherlands.	<u>196/</u>
nn.	Transshipped from Mexico through the Netherlands.	<u>197/</u>
oo.	Sum of 144 (from Switzerland) <u>198/</u> and 791 (from Mexico) <u>199/</u> .	
pp.	Transshipped from Chile through the Netherlands.	<u>200/</u>
qq.	Transshipped from Egypt through the Netherlands.	<u>201/</u>
rr.		<u>202/</u>
ss.	<u>203/</u> . During the first year of the reparations agreement between the USSR and Austria, 1,000 tons of rolled copper products were delivered to the USSR by Austria. Because the first year ended 26 July 1956, it has been assumed that one-half of the copper was shipped in the second half of 1955 and that one-half was shipped in the first half of 1956.	
tt.	Sum of 78, <u>204/</u> 202, <u>205/</u> 20, <u>206/</u> 168, <u>207/</u> and 40 <u>208/</u> .	
uu.	Sum of 382 <u>209/</u> and 16 <u>210/</u> .	
vv.	Sum of 300 <u>211/</u> and 10 <u>212/</u> .	
ww.	Sum of 646 <u>213/</u> and 632 <u>214/</u> . The figure 632 represents the difference between total Finnish exports of bars and wire to Poland, amounting to 1,322 tons, <u>215/</u> and the amount estimated to have been wire (see footnote gg, above).	
xx.	Sum of 25 <u>216/</u> and 100 <u>217/</u> .	
yy.	Sum of 1 <u>218/</u> and 45 <u>219/</u> .	
zz.		<u>220/</u>
aaa.	Transshipped from Denmark through the Netherlands.	<u>221/</u>
bbb.	Transshipped from Algeria through the Netherlands.	<u>222/</u>
ccc.	Transshipped from Finland through the Netherlands.	<u>223/</u>

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Table 6

Value of Imports of Copper from the Free World by the Sino-Soviet Bloc a/
1954 and 1955

Form of Copper	1954			1955		
	Volume (Thousand Metric Tons)	Average Price per Metric Ton (US \$)	Value b/ (Million US \$)	Volume (Thousand Metric Tons)	Average Price per Metric Ton (US \$)	Value b/ (Million US \$)
Wire and cable						
Bare						
From COCOM members				63 c/	1,034 d/	65.1
From Austria				1 e/	1,091 e/	1.1
From Finland				5 e/	792 f/	4.0
From other countries				5 e/	1,034 g/	5.2
Total or average	27 h/	793 i/	21.4 j/	74	1,019	75.4
Covered	21 k/	1,081	22.7 l/	10 c/	1,484 m/	14.8
Other						
From Finland				2 e/	867 n/	1.7
From other countries				8 e/	1,000 o/	8.0
Total or average	74 p/	804	22.5	10	970	2.7
Unspecified	2 q/	804 r/	1.6	1 e/	1,000 s/	1.0
Grand total or average	124	848 t/	105.2 u/	94	1,073	100.9

a. Some of the figures in this table were derived by a complex methodology, impractical to reproduce here. The methodology for all estimates not specifically documented in footnotes are available in CIA files. Totals are derived from unrounded figures, as shown in Table 4, p. 17, above, and Table 5, p. 18, above, and do not always agree with the sums of the rounded components.

b. Volume times average price per ton.

c. See Table 5, p. 18, above.

d. This figure was obtained by dividing \$88,576,000 (the total dollar value of licenses issued 224/) by 85,670, the sum of the following tonnages of copper wire (IL-3652) licensed for export to the Bloc by members of COCOM: 4,370; 201; 14,308; 400; 9,417; 2,243; and 54,731 225/. These figures include some tonnages for which licenses have been reissued, some which are for re-export, and some which are for delivery in 1956. It is not believed, however, that the figure for the average price is rendered invalid by these facts.

e. This figure was obtained by dividing \$927,250 (the sum of \$54,250, \$515,000, and \$358,000 226/) by 850 (the sum of the following tonnages of copper wire, licensed for shipment to the Bloc by Austria: 50, 500, and 300 227/).

f. The average value per ton of exports to the Bloc under Finnish tariff item 64-006 (principally uncoated copper cable). 228/

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Table 6

Value of Imports of Copper from the Free World by the Sino-Soviet Bloc
1954 and 1955
(Continued)

g. Information on the value of the remaining wire from various origins was not available. This tonnage has been valued at the same price per ton as the exports of members of COCOM (see footnote d, above).

h. See Table 4, p. 17, above. Of the 27, it is estimated that 10 were exported by 16 August 1954, the date when COCOM removed the embargo on exports of copper wire to the Bloc. The 10 represents the sum of 7 ^{229/} and 3 (Finnish exports of wire--see Table 4, footnote a, p. 17, above--were prorated on the number of days in 1954 before and after 16 August. It was assumed that about 60 percent of the wire was exported before 16 August).

i. The average price after 16 August is estimated at \$790, which represents the average value per ton of copper wire licensed by members of COCOM during the period. The licenses covered 44,693 tons valued at \$35.3 million. ^{230/}

j. The value after 16 August was \$13.4 million.

k. See Table 4, footnote c, p. 17, above.

l. This is a residual figure, representing the difference between the total value of copper of \$105.2 million (see footnote u, below) and the sum of all other values for copper imports in 1954.

m. This figure was derived by analogy with data on US exports. In 1955, the US exported 18,125 tons of covered wire and cable under Schedule B classification numbers 709810, 709830, 709855, 709860, 709865, 709870, 709875, and 709885 ^{231/} valued at about \$26,895,000. ^{232/} The average value of these exports is \$1,484 per ton, with the average for individual categories ranging from \$1,014 per ton (for 0.7 percent of the total) to \$1,680 per ton (for 13 percent of the total).

n. The average value per ton of exports to the Bloc under Finnish tariff items 64-001 (unworked copper), 64-003 (copper bars and wire), and 64-004 (copper plates and sheets). The figure was obtained as follows: Finnish exports to the Bloc were multiplied by the average value of exports under each tariff item to each country of the Bloc ^{233/} to yield a value for all tonnages. The total figure of \$1,486,000 so obtained was divided by 1,713, the tonnage of copper other than wire which Finland exported to the Bloc.

o. This figure was selected somewhat arbitrarily as lying between the average price on the London Metal Exchange in 1955 of approximately \$970 (average cash quotation converted to dollars at the rate of UK £ 1 to \$2.80) and the average estimated value of bare wire and cable.

p. See Table 4, footnotes d and e, p. 17, above.

q. See Table 4, footnote f, p. 17, above.

r. The value for unspecified forms was assumed to be the same as that for forms other than wire.

s. This figure was assigned arbitrarily but seems to be a fairly representative value, lying between that for wire and that for other forms of copper.

t. The average price per ton of \$848 for all copper in 1954 was derived from data in the table. It was assumed that the average price per ton of all copper except covered wire and cable bore the same relationship to the average price of all copper in 1954 as in 1955. Three of the four components of this ratio were known; the fourth was calculated to be \$848.

u. This figure, which was derived by multiplying the total volume of 124,000 tons by \$848 per ton, may be slightly high. For example, in 1955 the average value of Finnish exports of copper to the Bloc is noticeably below the average value of exports of copper to the Bloc from other countries of the Free World. The same situation probably prevailed in 1954.

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