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CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED
1999

Dissemination Authorized
Assistant Director
Office of Current Intelligence
CIA/SC/RR 183

No. Pages 17
Copy No.
7 March 1958

TRADE IN COPPER BY THE SINO-SOVIET BLOC IN 1956

Office of Research and Reports
CENTRAL INTELLIGENCE AGENCY

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FOREWORD

This report analyzes the trade in copper by the Sino-Soviet Bloc in 1956 and relates this trade to the supply of copper in the Bloc. Although all sources of information were analyzed, this report is based primarily on collateral information. Information regarding trade in 1954 and 1955 will be found in the report,

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TRADE IN COPPER BY THE SINO-SOVIET BLOC IN 1956*

Summary

Imports of copper from the Free World by the Sino-Soviet Bloc increased significantly in 1956. The amount imported -- 120,000 metric tons** -- exceeded the level of 1955 by about 27 percent and represented about 20 percent of the new supply of copper in the Bloc.

Of particular significance were the increased imports of copper wire from the Free World by the USSR and Communist China. In 1956, Soviet imports amounted to 56,700 tons, exceeding the level of 1955 by 28 percent. Communist China, which purchased this wire indirectly through Poland, received approximately 26,700 tons, more than 10 times the amount imported in 1955.

The value of the copper imported from the Free World by the Sino-Soviet Bloc in 1956 amounted to US \$126 million.*** The increase of \$25 million compared with 1955 resulted primarily from the increase in the volume of imports. An increase in the average price per ton, however, was also a contributing factor.

The increase in imports of copper by the Sino-Soviet Bloc was made possible by conditions in the Free World, where the expansion of production exceeded the development of demand for copper, thus making additional quantities available for shipment to the Bloc.

I. Introduction.

Since World War II the increased industrialization of the Sino-Soviet Bloc has resulted in a constantly increasing demand for copper which has more than offset the expansion of production. The deficit in copper has increased every year since 1946, reaching 200,000 tons in 1956 and amounting to almost 1.1 million tons over the 11-year period. A comparison of demand and production, together with the deficit, during 1946-56 is shown in Table 1.****

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 15 February 1958.

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

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

**** Table 1 follows on p. 2.

Table 1

Deficit of Copper in the Sino-Soviet Bloc a/
1946-56

Thousand Metric Tons			
<u>Year</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
1956	670 <u>b/</u>	470 <u>c/</u>	200

a.

b. Estimate.

c. 2/

The Sino-Soviet Bloc has attempted to meet this deficit partly through the use of substitute materials and partly through the withdrawal of significant quantities of copper from stockpiles. The principal method of reducing the deficit, however, has been to import copper from the Free World.

Imports of copper from the Free World by the Sino-Soviet Bloc have increased steadily since August 1954, when the Coordinating Committee on International Export Controls (COCOM) removed its embargo on exports to the Bloc of bare copper wire of 6 millimeters (mm) or less in diameter. * Since that time, imports of copper by the Bloc have been mainly in the form of such wire. In 1954, wire of this type accounted for approximately 22 percent of all the copper imported by the Bloc; in 1955, approximately 79 percent; and in 1956, approximately 91 percent. 4/

Contributing to the increased imports of copper by the Sino-Soviet Bloc in 1956 was the increased supply in the Free World. The production of copper in the Free World reached an all-time high in 1956, amounting to 3,352,000 tons, an increase of 295,000 tons compared with 1955. 5/ The demand for copper did not keep pace with the increase in production, and for the first time since the beginning of the Korean War there was no deficit of copper in the Free World. 6/

* 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.

The rise in prices during the first 3 months of 1956 continued the upward trend which had characterized the last quarter of 1955. Thereafter, as supply and demand became more closely balanced, prices dropped, and there was less fluctuation than during the first quarter of the year.

II. Imports from the Free World.

A. Volume.

Imports of copper from the Free World by the Sino-Soviet Bloc increased significantly in 1956, exceeding those in 1955 by approximately 27 percent. A comparison of imports in 1955 and 1956 is shown in Table 2.

Table 2

Summary of the Volume of Imports of Copper
from the Free World by the Sino-Soviet Bloc
1955 and 1956

	Thousand Metric Tons	
<u>Form of Copper</u>	<u>1955 a/</u>	<u>1956 b/</u>
Wire and cable		
Bare	74.3	109.3
Covered	9.7	2.5
Other	9.6	8.2
Unspecified	0.7	0
Total	<u>94.3</u>	<u>119.9</u>

a. 7/

b. Derived from Table 4, Appendix A, p. 8, below. The total was derived from unrounded data and is not the sum of the rounded components.

The substantial expansion of exports of copper from the Free World to the Sino-Soviet Bloc in 1956 probably can be attributed to an improvement in the balance of the market for copper in the Free World. In 1955, copper was scarce because the available productive capacity was not fully utilized. A series of strikes in Northern Rhodesia, Chile, and the US reduced the output of mines substantially in the last half of 1954 and in 1955. These losses largely offset additions which the copper industry had made to its productive capacity in those 2 years, and it was not possible to meet the increased requirements of consumers in both the domestic and the foreign markets. In 1956, however, interruptions in production through labor difficulties were few and relatively unimportant. In addition, productive capacity continued to increase. 8/

These developments in the copper industry of the Free World enabled the Sino-Soviet Bloc to increase its imports from the Free World significantly in 1956. Trade in copper wire reached a new high in 1956, imports by the USSR amounting to 56,700 tons, or 28 percent more than in 1955, and imports by Communist China reaching approximately 26,700 tons.

B. Value.

The dollar value of imports of copper from the Free World by the Sino-Soviet Bloc in 1955 and 1956 is shown in Table 3. The increase in the value of imports of copper by the Bloc in 1956 resulted from the increase in the value of imports of bare wire and cable, both because of the additional tonnages of wire and cable imported during the year and because of an increase in the estimated average price per ton.

Table 3

Summary of the Value of Imports of Copper
from the Free World by the Sino-Soviet Bloc
1955 and 1956

	Million US \$	
<u>Form of Copper</u>	<u>1955 ^{a/}</u>	<u>1956 ^{b/}</u>
Wire and cable		
Bare	75.4	112.4
Covered	14.8	3.7
Other	9.7	9.4
Unspecified	1.0	0
Total	<u>100.9</u>	<u>125.5</u>

a. ^{9/}

b. Derived from Table 5, Appendix A,
p. 13, below.

It is estimated that the average price of bare copper wire and cable exported to the Sino-Soviet Bloc in 1956 was \$1,028 per ton, \$13 per ton more than the average price in 1955. Largely responsible for this increase were the agreements for purchases in the Free World made by the Bloc late in 1955 or early in 1956, when prices for copper were at their highest levels. These high prices were the result of the relative scarcity of copper and the high demand in 1955 and in the early part of 1956. Competitive bidding by consumers forced prices upward far beyond any previous peak. Late in March 1956 the price on the London Metal Exchange for refined bar copper

reached \$1,197 per ton.* After March, however, the greater increase in production began to offset the rise in demand, and the price for this product declined to \$734 per ton at the end of the year. 10/

1. Embargoed Copper:

Since August 1954 the substantial increase in imports of bare copper wire by the Sino-Soviet Bloc has been accompanied by a sharp decrease in imports of forms of copper embargoed by COCOM. None of the principal exporters of embargoed copper to the Bloc is a member of COCOM, and consequently none is bound by the restrictions agreed to by this group. Exports of copper from Finland to the USSR, Poland, and Communist China in 1956 are provided for by current trade agreements, and future deliveries to these countries will be the subject of annual negotiations. 11/

Exports of rolled copper from Austria to the USSR are part of the Austro-Soviet reparations agreements and are to be made through 1961. 12/ These shipments reportedly are continued by Austria in order to keep Soviet-Austrian relations satisfactory and to maintain its position as a neutral. 13/

2. Polish Purchases for Communist China.

in 1956 copper wire imported by Communist China from the Free World was originally sold to Poland and then consigned in Polish ships to China. 14/ The Polish import-export firm TRANSACTOR acts for the government of Poland in procuring this copper.

3. Transportation Facilities.

About 80 percent of the copper wire imported by the Sino-Soviet Bloc from the Free World in 1956 was carried on Soviet and Polish merchant ships.** These ships traveled between ports of the Soviet Bloc on the Baltic Sea and ports of the Free World on the European continent and in the UK.

Whereas Soviet ships appear to carry copper only to Soviet destinations, the Polish merchant ships serve as carriers of copper not only to Poland but also to other countries of the Sino-Soviet Bloc. In 1956, copper is known to have been loaded on Polish ships in ports of the Free World and to have been transhipped at Gdynia to the USSR, 15/ Czechoslovakia, 16/ and Hungary, 17/. Transportation to the Soviet Bloc for the remaining imports of copper was accomplished principally by rail and by inland waterway barge.

* A large number of negotiations concerning trade in copper between the Free World and countries of the Bloc are based on the prices quoted on the London Metal Exchange for refined copper plus the cost of processing into wire.

** For methodology, see Appendix B.

4. Transactions for Processing Copper.

The pattern of trade in copper between the Free World and the Sino-Soviet Bloc includes transactions whereby copper raw materials are exported to the Bloc for processing. The extractable copper is converted into electrolytic copper which is shipped back to the country of origin. These shipments are not included in the total volume of imports of copper by the Bloc from the Free World.

The principal participants in such transactions in 1956 were West Germany and East Germany, with West Germany utilizing the facilities for processing copper in East Germany. It is estimated that approximately 1,700 tons of copper residues* were shipped to East Germany in 1956. 19/ From this quantity, approximately 800 tons of electrolytic copper cathodes were returned to West Germany.

III. Intra-Bloc Trade.

Although the information concerning trade in copper within the Sino-Soviet Bloc is fragmentary, the pattern of this trade appears generally to be adapted to the conditions set by the USSR. As the principal supplier and consumer within the Bloc the USSR presumably determines to a considerable degree the amounts and types of copper traded and also the terms of trade. Because the production of copper in the other countries of the Bloc is relatively small, these countries must rely largely upon imports from the USSR to cover needs for copper not provided by the Free World. The scope of trade within the Bloc therefore depends primarily on the exports of copper by the USSR.

With the exception of exports of copper wire to Communist China, which amounted to 6,000 tons in 1956, 20/ much of the copper exported from the USSR to other countries of the Bloc is returned eventually to the USSR. This two-way system of trade is manifested principally in the trade in copper of the USSR with Czechoslovakia and East Germany, the most industrialized of the European Satellites and the largest importers of copper from the USSR. In 1956, exports of copper from the USSR to Czechoslovakia are estimated at approximately 30,000 tons, 21/ and those to East Germany at approximately 14,000 tons. 22/ These countries returned the copper to the USSR in a more usable form or as products of their engineering industries. 23/ East Germany also processes copper raw materials for some of the other European Satellites, but none of these countries is an important producer of copper, and such trade is on a relatively minor scale.

* The residues involved in these transactions are byproducts from the smelting and refining of copper. The copper content of these residues is estimated at 46 percent. 18/

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APPENDIX A

STATISTICAL DATA

Detailed information on the volume of copper imported from the Free World by the Sino-Soviet Bloc in 1956 and the value of such imports are shown in Table 4* and Table 5,** respectively.

* Table 4 follows on p. 8.
** Table 5 follows on p. 13.

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Table 4

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc*
1956

Form of Copper	Country of Origin	USSR	Bulgaria	Czecho-slovakia	East Germany	Hungary	Poland	Rumania	Communist China	Unspecified	Total	Metric Tons
COCOM members												
	Belgium	3,300 a/		1,280 b/		300 d/	870 c/					5,450
	Denmark						998 e/					1,298
	France						300 f/					300
	Italy				92 g/		128 h/					220
	Japan	506 i/				185 j/	153 k/		5 l/			849
	Netherlands			300 m/	204 n/	701 o/	1,100 p/					2,305
	UK	40,575 q/		302 r/	300 s/	2,085 t/	2,293 u/		8,231 v/			53,786
	West Germany	5,133 w/	16 x/	2,208 y/	3,037 z/	965 aa/		13 bb/	13,939 cc/			25,311
	Subtotal	49,514	16	4,090	3,633	4,236	5,842	13	22,175			89,519
Other countries												
	Austria											204
	Chile		9 dd/	195 ee/	1,486 gg/		100 hh/					1,986
	Egypt			400 ff/		202 ij/						252
	Finland			50 ii/			845 ll/		75 mm/			6,132
	Mexico	5,212 kk/				499 nn/	343 oo/	216 pp/	4,000 qq/			5,058
	Pakistan					62 rr/						62
	Sweden						1,759 tt/		487 vv/			2,081
	Switzerland			322 ss/			279 vv/					966
	Yugoslavia	1,500 xx/		200 uu/			404 zz/					2,004
	Unspecified	507 aaa/		250 bbb/		251 ccc/						1,008
	Subtotal	7,219	9	1,517	1,486	1,014	3,730	216	4,562			19,753
	Total	56,733	25	5,607	5,119	5,250	9,572	229	26,737			109,272

* Footnotes for Table 4 follow on p. 10.

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Table 4

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956
(Continued)

Form of Copper (Continued)	Country of Origin										Metric Tons	
	USSR	Bulgaria	Czecho- slovakia	East Germany	Hungary	Poland	Rumania	Communist China	Unspeci- fied	Total		
Covered												
Wire and cable (Continued)												
Total	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2,470 <u>add/</u>	2,470		
Other												
COCOM members												
Belgium									10 <u>eee/</u>	10		
West Germany										52		
Subtotal										62		
Other countries												
Austria	1,000 <u>ggg/</u>											2,559
Finland	300 <u>jjj/</u>		1,546 <u>hhh/</u>		13 <u>iii/</u>	845 <u>kkk/</u>				200 <u>lll/</u>		1,345
India					38 <u>mmm/</u>	42 <u>ppp/</u>						225
Lebanon		90 <u>nnn/</u>			93 <u>ooo/</u>							455
Mexico			455 <u>qqq/</u>		25 <u>uuu/</u>	518 <u>sss/</u>						1,509
Sweden			991 <u>rrr/</u>			77 <u>vvv/</u>				3 <u>www/</u>		546
Switzerland			441 <u>ttt/</u>			1,328 <u>yyy/</u>						1,446
Unspecified		118 <u>xxx/</u>										
Subtotal	1,300	208	3,433		169	2,810			203			8,123
Total	1,300	208	3,433		169	2,810			213			8,185
Grand total	58,033	233	9,040	5,119	5,419	12,382	281	26,950	2,470			119,927

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Table 4

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956

(Continued)

- a. Sum of 300, 24/350, 25/250, 26/200, 27/400, 28/100, 29/500, 30/200, 31/600, 32/and 400 33/.
- b. Sum of 150, 34/200, 35/100, 36/100, 37/300, 38/300, 39/and 130 40/.
- c. Sum of 69, 41/153, 42/198, 43/199, 44/and 251 45/.
- d. 46/.
- e. Sum of 697 47/ and 301 48/.
- f. 49/.
- g. 50/.
- h. 51/.
- i. 52/.
- j. Sum of 155 53/ and 30 54/.
- k. 55/.
- l. Sum of 3 56/ and 2 57/.
- m. Sum of 200 58/ and 100 59/.
- n. 60/.
- o. Sum of 100, 61/150, 62/150, 63/51, 64/101, 65/and 149 66/.
- p. Sum of 1,000 67/ and 100 68/.
- q. 69/.
- r. Sum of 102 70/ and 200 71/.
- s. 72/.
- t. Sum of 1,470 73/ and 615 74/.
- u. This figure represents the amount remaining from the 10,524 tons shipped by the UK to Poland 75/ after deducting probable shipments from the UK to TRANSACTOR, the Polish firm that acts as a purchaser for China.
- v. This figure represents the trade in copper of the UK with TRANSACTOR. Sum of 405, 76/ 3,426, 77/ 400, 78/ and 4,000 79/.
- w. 80/.
- x. 81/.
- y. 82/.
- z. Sum of 901, 83/ 24, 84/ 1,500, 85/ 200, 86/ 301, 87/ 99, 88/ and 12 89/.
- aa. 90/.
- bb. 91/.
- cc. This figure represents the total amount shipped from West Germany to Poland 92/ which, in view of the extent of Polish purchases of copper for China, is assumed to have been re-exported to China.
- dd. 93/.
- ee. 94/.

Table 4
Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956
(Continued)

ff.	Sum of 11, <u>95/89</u> , <u>96/150</u> , <u>97/150</u> , <u>97/150</u> and <u>150 98/</u> .
gg.	Sum of 98, <u>99/1,010</u> , <u>100/100</u> and <u>378 101/</u> .
hh.	<u>102/</u>
ii.	<u>103/</u>
jj.	<u>104/</u>
kk.	<u>105/</u>
ll.	<u>106/</u>
mm.	<u>107/</u>
nn.	Sum of 299, <u>108/50</u> , <u>109/150</u> and <u>150 110/</u> .
oo.	This figure represents the amount remaining from the 4,343 tons (sum of 3,090, <u>111/551</u> , <u>112/652</u> , <u>113/</u> and <u>50 114/</u>) which transited from Mexico to Poland after deducting the 4,000 tons ostensibly destined for TRANSACTOR <u>115/</u> .
pp.	<u>116/</u>
qq.	<u>117/</u> . (See footnote oo, above.)
rr.	<u>118/</u>
ss.	Sum of 100, <u>119/22</u> , <u>120/100</u> , <u>121/100</u> and <u>100 122/</u> .
tt.	<u>123/</u>
uu.	Sum of 100 <u>124/</u> and <u>100 125/</u> .
vv.	Sum of 100 <u>126/</u> and <u>179 127/</u> .
ww.	Sum of 100, <u>128/100</u> , <u>129/287</u> and <u>287 130/</u> .
xx.	Sum of 300, <u>131/300</u> , <u>132/400</u> , <u>134/400</u> and <u>380 135/</u> .
yy.	<u>136/</u>
zz.	<u>137/</u>
aaa.	Sum of 204 <u>138/</u> and <u>303 139/</u> .
bbb.	Sum of 150 <u>140/</u> and <u>100 141/</u> .
ccc.	Sum of 201 <u>142/</u> and <u>50 143/</u> .
ddd.	This figure was derived by a complex methodology, based on many sources, impractical to reproduce here. The methodology and the sources for this estimate are available in CIA files.
eee.	<u>144/</u>
fff.	<u>145/</u>
ggg.	<u>146/</u>
hhh.	Sum of 57, <u>147/50</u> , <u>148/166</u> , <u>149/186</u> , <u>150/156</u> , <u>151/38</u> , <u>152/633</u> , <u>153/209</u> , <u>154/</u> and <u>51 155/</u> .
iii.	<u>156/</u>
jjj.	<u>157/</u>

Table 4

Volume of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956
(Continued)

The tonnages of residues shipped have been converted to the metal equivalents on the basis of a copper content of 25 percent 162.

kkk.	<u>158</u>
lll.	<u>159</u>
mmm.	Sum of 16 <u>160</u> / and 22 <u>161</u> /.
nnn.	<u>163</u>
ooo.	Sum of 29, <u>164</u> / 7, <u>165</u> / and 57 <u>166</u> /.
ppp.	<u>167</u>
qqq.	<u>168</u>
rrr.	Sum of 105, <u>169</u> / 226, <u>170</u> / 87, <u>171</u> / 56, <u>172</u> / 234, <u>173</u> / 27, <u>174</u> / 25, <u>175</u> / 35, <u>176</u> / 35, <u>177</u> / 15, <u>178</u> / and 146 <u>179</u> /.
sss.	Sum of 358, <u>180</u> / 134, <u>181</u> / and 26 <u>182</u> /.
ttt.	Sum of 20, <u>183</u> / 100, <u>184</u> / 105, <u>185</u> / 100, <u>186</u> / 20, <u>187</u> / 43, <u>188</u> / 25, <u>189</u> / 1, <u>190</u> / and 27 <u>191</u> /.
uuu.	Sum of 12 <u>192</u> / and 13 <u>193</u> /.
vvv.	Sum of 66 <u>194</u> / and 11 <u>195</u> /.
www.	<u>196</u>
xxx.	<u>197</u>
yyy.	Sum of 342, <u>198</u> / 206, <u>199</u> / 300, <u>200</u> / 44, <u>201</u> / 346, <u>202</u> / and 90 <u>203</u> /.

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Table 5
Value of Imports of Copper from the Free World by the Sino-Soviet Bloc*
1956

Form of Copper	Country of Origin										Total
	USSR	Bulgaria	Czecho-slovakia	East Germany	Hungary	Poland	Rumania	Communist China	Unspecified	Thousand US \$	
Wire and cable											
Bare											
COCOM members											
Belgium	3,348 e/		1,210 b/		267 d/	848 o/					5,406
Denmark						888 d/					1,155
France						308 e/					308
Italy				95 e/		132 e/					227
Japan	595 f/				218 f/	180 i/		6 f/			999
Netherlands			316 g/	215 g/	737 g/	1,157 g/					2,425
UK	42,154 h/		277 i/	275 i/	1,914 i/	2,105 i/					54,281
West Germany	5,677 j/	16 j/	2,325 j/	3,122 j/	1,042 j/		13 j/	7,556 i/			26,873
Subtotal	51,774	16	4,128	3,707	4,178	5,618	13	22,240			91,674
Other countries											
Austria											209
Chile											2,334
Egypt					230 n/	118 l/					291
Finland				1,746 l/							6,240
Mexico	5,181 o/				586 p/	403 p/		100 o/			5,083
Pakistan					64 r/		254 p/	3,840 q/			64
Sweden											2,429
Switzerland											997
Yugoslavia	1,450 v/										2,003
Unspecified	521 z/				258 z/						1,036
Subtotal	7,152	9	1,679	1,746	1,138	4,300	254	4,408			20,686
Total	58,926	25	5,807	5,453	5,316	9,918	267	26,648			112,360

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* Footnotes for Table 5 follow on p. 15.

Table 5

Value of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956

(Continued)

Form of Copper	Country of Origin	Thousand US \$							Total			
		USSR	Bulgaria	Czecho-slovakia	East Germany	Hungary	Poland	Rumania		Communist China	Unspecified	
Wire and cable (Continued)												
Covered												
Total		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	3,698 aa/			3,698
Other												
COCOM members												
	Belgium								11 bb/			11
	West Germany							60 bb/				60
	Subtotal							60	11			71
Other countries												
	Austria	1,237 cc/						14 dd/				14
	Finland	330 ee/		1,634 dd/				9 hh/	917 ff/			9
	India							88 ii/	40 ii/			214
	Lebanon		86 ii/									630
	Mexico			630 jj/					575 kk/			1,948
	Sweden			1,373 ll/				23 mm/	27 nn/			506
	Switzerland			453 ll/					1,530 oo/	3 oo/		1,665
	Unspecified		135 pp/									
	Subtotal	1,567	221	4,090			134	3,089	224			9,325
Total		1,567	221	4,090			134	3,089	235			9,396
Grand total		60,493	246	9,897	5,453		5,450	13,007	26,883	327		125,454

Table 5

Value of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956

(Continued)

a.	Sum of \$342,000, <u>204</u> \$400,500, <u>205</u> \$299,500, <u>206</u> \$239,600, <u>207</u> \$449,000, <u>208</u> \$90,000, <u>209</u> \$450,000, <u>210</u> \$185,000, <u>211</u> \$544,000, <u>212</u> and \$348,000 <u>213</u> .
b.	Sum of \$112,000, <u>214</u> \$230,120, <u>215</u> \$104,300, <u>216</u> \$104,300, <u>217</u> \$274,880, <u>218</u> \$275,600, <u>219</u> and \$109,060 <u>220</u> .
c.	Sum of \$82,740, <u>221</u> \$176,860, <u>222</u> \$175,600, <u>223</u> \$169,300, <u>224</u> and \$243,120 <u>225</u> .
d.	This figure has been derived from the same price per ton as the exports to Poland from Denmark in December 1956 (<u>696</u> , <u>777</u> kilograms valued at \$620,132, or \$890 per ton). <u>226</u> .
e.	This figure was derived from the same price per ton (\$1,176) as the exports to Hungary from Japan in January 1956. <u>227</u>
f.	This figure was derived from the same price per ton (\$1,052) as the exports to Poland from the Netherlands in November 1956. <u>228</u>
g.	This figure was derived from the same price per ton (\$918) as the exports to Poland from the UK in 1956. <u>230</u>
h.	The value of exports of copper wire from West Germany to the USSR, Czechoslovakia, Hungary, and China (by way of Poland) in 1956 were based on values given for West German exports of copper to these countries during the period from January through September 1956. <u>231</u> The value of exports of wire to Bulgaria, East Germany, and Rumania was derived from the average price of \$1,028 per ton. This figure was based on the average price of \$1,028 per ton.
i.	All exports from Chile were valued at \$1,175 per ton, the price quoted on exports of wire from Chile to Czechoslovakia by way of Hamburg. <u>232</u>
j.	This figure was based on a price of \$1,175 per ton, <u>233</u>
k.	This figure was based on a price of \$960 per ton, <u>234</u>
l.	This figure was based on a price of \$960 per ton, <u>235</u>
m.	This figure was based on a price of \$1,167 per ton, <u>236</u>
n.	This figure was based on a price of \$1,167 per ton, <u>237</u>
o.	Because information on the value of these shipments from Pakistan to Hungary was not available, this figure was derived from the average price of \$1,028 per ton.
p.	This figure was based on a price of \$1,167 per ton, <u>238</u>
q.	This figure was based on an average price of \$967 per ton <u>240</u> .
r.	Sum of \$116,103 <u>239</u> and \$89,024 <u>240</u> .
s.	\$1,161 per ton.
t.	Sum of \$97,096, <u>242</u> \$97,096, <u>243</u> and \$214,005 <u>244</u> .
u.	This figure was based on an average price of \$967 per ton <u>245</u> .

Table 5
Value of Imports of Copper from the Free World by the Sino-Soviet Bloc
1956
(Continued)

- x. ^{246/} this figure was based on the price of
- y. \$1,095.40 per ton.
- z. this figure was based on the average price of \$1,028 per ton.
- aa. An average price of \$1,497 per ton of covered wire was derived from the relationship between the average cost per ton of covered wire and the average cost per ton of bare wire in 1955. The estimated average price for covered wire was 45.6 percent more than for bare wire in 1955. ^{247/} The average cost of bare wire was \$1,028 per ton in 1956.
- bb. this figure was based on the average price of \$1,148 per ton of copper in forms other than wire.
- cc. This figure was based on a price of \$1,237 per ton, ^{248/}
- dd. This figure was based on a price of \$1,057 per ton, ^{249/}
- ee. ^{250/}
- ff. ^{251/}
- gg. ^{252/}
- hh. ^{253/}
- ii. of \$950 per ton.
- jj. this figure was based on the price of \$1,385 per ton.
- kk. This figure was based on a price of \$1,110 per ton, ^{255/}
- ll. Sum of \$21,755, ^{257/} \$115,874, ^{258/} \$123,741, ^{259/} \$88,206, ^{260/} \$17,633, ^{261/} \$37,762, ^{262/} \$23,186, ^{263/} \$1,537, ^{264/} and \$22,900 ^{265/}.
- mm. Sum of \$11,313 ^{266/} and \$11,450 ^{267/}.
- nn. Sum of \$11,890 ^{268/} and \$14,746 ^{269/}.
- oo. ^{270/}
- pp. this figure was based on the average price of \$1,148 per ton of copper in forms other than wire.
- qq. this figure was based on an average price of \$1.152 per ton

APPENDIX B

METHODOLOGY

1. Volume and Value of Imports.

The research methods used in deriving the estimates for this report were essentially the same as those employed in the report on trade in copper in 1955. 272/ The results of the analysis based on this complex methodology are shown in Tables 4 and 5.* These estimates were based partly on data released by the exporting countries of the Free World and partly on information derived from

Wherever possible, data from more than one source were compared to determine the reliability and completeness of these data, thus permitting a more accurate estimate.

The estimate for the average price of bare wire and cable in 1956 (\$1,028) was derived from the estimates of the volume and value of such imports by the Sino-Soviet Bloc, as shown in Tables 4 and 5. The estimate for the average price of copper in forms other than wire and cable (\$1,148) was similarly derived.

2. Transportation Facilities.

Soviet and Polish merchant ships are estimated to have carried approximately 80 percent of all the wire delivered to the Sino-Soviet Bloc from the Free World in 1956. This estimate was based on shipping data

Although the data are fragmentary, a probable determination of the nationality of the ships carrying this wire can be derived. For example, all available data regarding shipments by water of copper wire from the UK and Belgium to the USSR showed Soviet carriers. It was assumed, therefore, that the Soviet merchant fleet transported all of the copper wire exported from the UK and Belgium to the USSR. The information available also indicated that exports of copper wire to Poland by water were carried on Polish ships. It was assumed that all of the copper wire shipped to Poland from the Free World by water, including that transhipped to Communist China, was carried on Polish ships.

To the estimate derived by this methodology -- about 77,000 tons -- was added the quantities of wire transported to other countries of the Sino-Soviet Bloc on Soviet or Polish ships. The resulting figure is about 85,000 tons, or approximately 80 percent of the total estimated volume of copper wire imported by the Bloc from the Free World in 1956.

* Pp. 8 and 13, respectively, above.

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APPENDIX C

GAPS IN INTELLIGENCE

Information about trade in copper within the Sino-Soviet Bloc is very fragmentary. Although a general pattern of this trade can be identified, the data available are too incomplete to estimate accurately the volume or the value of the copper traded by each country.

The information available on shipments of copper transiting Free World ports en route to the Sino-Soviet Bloc is inadequate. Further details on transshipments of copper, including information from additional ports through which the copper transits, would improve the estimates of imports, not only by making available data more complete but also by facilitating the elimination of duplication

Information on imports of copper wire and cable by the Sino-Soviet Bloc is more complete than that on imports of other forms of copper. The latter imports constitute a relatively small percentage of the total but are important because they are subject to export controls. Shipments of these forms have _____ as transiting several Western European ports, and more information on transit trade would help to fill this important gap.

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APPENDIX D

SOURCE REFERENCES



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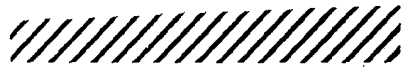


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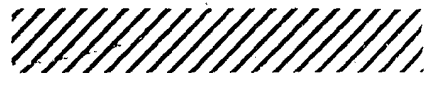
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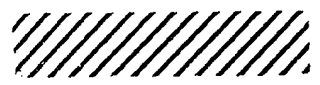
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