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PROVISIONAL INTELLIGENCE REPORT

PLANT STUDY OF THE IRON AND STEEL INDUSTRY OF THE USSR: ECONOMIC REGION X

CIA/RR PR-62

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FOREWORD

The report covers those plants in Economic Region X which produce metallurgical coke, pig iron, steel ingots, and steel castings or other types of finished steel.

Although Economic Region X accounted for slightly less than 1 percent of the production of steel for ingots, castings, and finished steel in 1953, this production represents a significant recent development in the Soviet steel industry.

The primary intelligence value of the report lies in the basic evaluation of plant capacity of this region as a contribution to the capabilities of the USSR in the production of metallurgical coke, pig iron, steel, or finished steel products. The localization of industrial centers and individual plants and their importance in the Soviet iron and steel industry furnish valuable target information. Regional production estimates of the Soviet iron and steel industry also serve as a check on Soviet statistics.

This report is one of a series of regional provisional reports that will provide basic research data for a comprehensive study which is to be made on the iron and steel industry of the USSR.

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PLANT STUDY OF THE IRON AND STEEL INDUSTRY OF THE USSR: ECONOMIC REGION X*

Summary

All steel produced in Economic Region X** (Kazakhstan and Central Asia) in 1953 came from two oblasts, Karaganda and Tashkent, with output evenly divided between the two. The Kazakh Metallurgical Plant produced 81 percent of the steel in Region Xa (Kazakhstan) while the Uzebek Metallurgical Plant accounted for 87.7 percent of the steel output of Region Xb (Central Asia). All the rest of the steel in both Region Xa and Region Xb came from foundries located in manufacturing plants. (See the accompanying map for locations of iron and steel plants in Economic Region X.***)

In order to make use of the then undeveloped raw material resources of Central Asia and to provide the economy of the region with its annual requirements of more than 100,000 tons**** of finished steel products, the Russians in 1944 began construction of 2 new steel plants. In 9 years 2 well-managed, efficient steel plants have been established at Begovat and Temir-Tau.

Original plans for a fully integrated steel industry have not yet been realized as there is no coke or pig iron production, but an adequate raw material base of coking coal, iron ore, limestone, and some of the alloying metals exists within Region X to support one. Development and expansion of a fully integrated industry will depend upon the demands of the consuming industries.

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* The estimates and conclusions contained in this report represent the best judgment of the responsible analyst as of 15 May 1954.

** The term region in this report refers to the economic regions defined and numbered on CIA Map 12048, 9-51 (First Revision, 7-52), USSR: Economic Regions.

*** Following p. 24.

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

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In 1953, Region X produced 339,000 tons of steel for ingots and castings and 260,700 tons of finished steel. Of the USSR total steel and finished steel the area accounted for 0.90 percent and 0.94 percent respectively. Of the finished steel produced in Region X, 30,400 tons or 11.7 percent was in the form of steel castings.

Of the 339,000 tons produced in Region X, 321,000 tons were made by open-hearth furnaces, 10,000 tons by Bessemer converters, and 8,000 tons by electric furnaces.

Rolled steel products produced in Region X were consumed principally by the construction and machine-building industries within Central Asia. Some structurals were supplied to hydroelectric plant construction projects in other Soviet economic regions while smaller amounts were exported to China. All steel castings were consumed within the plants in which they were produced. Production of iron and steel in Region X is given in Table 1.* (For summaries of production and capacity of individual plants, see Appendix A, Tables 6-11.**)

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1. Kazakh Metallurgical Plant (Temir-Tau Metallurgical Plant)

25X1A2g [redacted]

a. Location.

50°05'N - 72°56'E, Temir-Tau, Karaganda Oblast, Kazakh SSR.

b. History and Development.

When the plant was planned in 1942 it was to have 4 blast furnaces with an annual capacity of 1.2 million tons, 10 open-hearth furnaces with a capacity of 1.4 million tons annually, finishing rolling mills capable of producing over 1 million tons of rolled products including 700,000 tons of seamless tubing, and a coke-chemical plant. 1/***

* Table 1 follows on p. 3.
** Tables 6-11 follow on pp. 25-29.
*** Footnote references in arabic numerals are to sources listed in Appendix D.

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Table 1

Production of Iron and Steel in Region X
1953

Thousand Metric Tons

Plant	Coke	Pig Iron	Steel	Total Finished Steel	Steel Castings
Karaganda Oblast					
Kazakh Metallurgical Plant	0	0	136.0	112.9	0
Karaganda Tank Plant imeni Stalin	0	0	24.0	13.0	13.0
Karaganda Mine Equipment plant imeni Parkhomenko	0	0	8.0	4.8	4.8
Total	0	0	168.0	130.7	17.8
Tashkent Oblast					
Uzbek Metallurgical Plant imeni Lenin	0	0	150.0	117.4	0
Tashkent Locomotive and Railroad Car Repair Plant imeni Kaganovich	0	0	11.0	6.6	6.6
Tashselmash Agricultural Machine Plant imeni Voroshilov	0	0	10.0	6.0	6.0
Total	0	0	171.0	130.0	12.6
Grand Total			339.0	260.7	30.4

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The plant was designed to supply the economy of Kazakhstan and Central Asia with rails, structurals, pig iron, coke, Dinas bricks, and chamotte. 2/

Actual operations began at the plant on 31 December 1944 when the first open hearth was tapped. 3/ By November 1946 there were one open-hearth furnace, a mechanical repair shop, and the 400 rolling mill in operation. 4/ In October 1947 a second open-hearth and a plate-sheet mill were producing. 5/ The third open hearth was commissioned on 2 March 1949, and sometime between 1947 and 1949 a 280 bar mill was installed. 6/

No blast furnaces have been built, and no other new equipment has been installed since 1949. To date the Russians have fallen far short of fulfilling the rather ambitious plans for this plant.

c. Raw Materials and Other Inputs.

The Kazakh Metallurgical Plant is located in an area which contains sufficient supplies of all the basic raw materials necessary to the development of an integrated steel industry. Within the Kazakh SSR there are deposits of coal, limestone, quartz, and iron ore. 7/ Major deposits of iron ore are located at Atasuskiy, Ayat River mine, and Karsakpay with coal, molybdenum, and tungsten available in Karaganda Oblast. 8/

Coal is obtained from the Saran mine 20 kilometers (km) south of Karaganda, manganese from Dzhezdy 720 km away and molybdenum from Akotaban just north of Balkhash Lake. 9/ There is no information of the amounts of these raw materials consumed by the plant.

Scrap constitutes 60 to 70 percent of the metallic charges of the open-hearth furnaces and is obtained mostly from manufacturing plants and collection centers within Kazakh SSR. 10/ Based on the 1953 steel production between 80,000 and 95,000 tons of scrap were consumed.

The source of pig iron is not known, but it is reasonable to assume that it is supplied from the Urals. Based on the 1953 steel production and the scrap charging practice, between 40,000 and 55,000 tons were consumed.

Sources and quantities of coke for the iron cupolas are unknown.

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d. Coking Facilities.

None.

e. Ironmaking Facilities.

There are no blast furnaces for the production of pig iron. The iron foundry contains two cupolas of unknown capacity which operate two shifts per day. 11/

f. Steelmaking Facilities.

There are 3 oil-fired 12/ open-hearth furnaces 13/ each with estimated capacity and hearth area of 50 to 60 tons and 25 square meters respectively. 14/ From 1944 to the end of 1947 there was 1 furnace; from 1947 to 1949, 2 furnaces; and from March 1949, the open-hearth shop has been at its present capacity.

Open-hearth coefficients -- that is, the tons of steel produced per square meter of hearth area per 24-hour period -- for the years 1947 to 1953 were as follows: 1947, 3.0; 1948, 4.1 15/; 1950, 4.9 16/; 1951, 6.23 17/; 1952, 6.62 18/; and for the first half of 1953, 7.1. 19/

Prior to 1949, each furnace made 2 heats per day, but in 1949, heats were increased to 3 per day. 20/ In 1950, melting time per heat was reduced from 8 hours to 6 hours. 21/ While the heat time was being reduced, the weight per heat was increasing. In 1946, the average weight of a melt for the entire plant was 35.2 tons; in 1947, 38.3 tons; in 1948, 41.5 tons; in 1949, 47.3 tons; and in 1950, over 50 tons. 22/

Percentage increases in steel production have been announced by the Russians for each year since the plant started. Production estimates based on coefficients and those based on percentage increases do not agree in some years. Other sources tend to confirm the announced increases. From these data and other documentary evidence the annual production of steel from 1945 through 1953 is estimated in Table 2.*

* Table 2 follows on p. 6.

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Table 2

Production of Steel at the Kazakh Metallurgical Plant

Year	Metric Tons Amount
1945	10,000 23/
1946	15,000 a/
1947	21,000 24/
1948	39,000 25/
1949	52,000 26/
1950	74,000 27/
1951	89,800 28/
1952	123,000 29/
1953	136,000 b/

a. By interpolation.
b. Estimates based on increased coefficient in 1953. 30/

g. Primary Rolling Mills.

Although there is no blooming or slabbing mill, there is a heavy bar and billet mill which takes ingots directly. Slab type billets are produced for the sheet-plate mill.

h. Finishing Facilities.

(1) 400 Bar and Billet Mill.

This mill began producing in June 1946 31/ and by 1949 was handling regularly 300 ingots per shift. 32/ This mill in 1949 set a record of rolling 620 ingots per shift, 33/ which was broken in 1952 with a total of 780 ingots per shift when the normal schedule was 400. 34/ Based on a norm of 400 and assuming an ingot weight of one-half ton and that the mill works 18 shifts per week for 50 weeks a year, the capacity of this mill is estimated at 180,000 tons per year.

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(2) 280 Bar Mill.

This is a five-stand in train bar mill 35/ on which channel, beam, and angle structural shapes as well as flat bars are produced. 36/ In 1952 this mill set a rolling record of 705 billets in 8 hours against a norm of 400. 37/ Annual capacity of this mill is not known, since there is no basis for estimating the weight of the billets used.

(3) Sheet-Plate Mill.

A sheet mill of unknown size and capacity was put into operation on October 30, 1947. 38/ This mill produces hot-rolled sheet, roofing sheet, and plates.

(4) Iron Foundry.

An iron foundry with two cupolas produces castings mostly for mill maintenance. 39/

(5) Wire Machine.

The plant has 1 cold drawing machine which produces rods 5 millimeters (mm) to 15 mm in diameter. 40/

i. Intraplant Services.

Electric power is supplied to the plant by the Karaganda Electric Power Station which is located in Temir-Tau. 41/

Water supply for the plant is the Samarkhand Reservoir located on the Nura River 42/

To provide fuel for the open hearths and soaking pits there are 4 fuel oil storage tanks, 15 meters (m) in diameter and 10 m high, with a capacity of 5,000 tons each. 43/

For maintaining the operating facilities there is a mechanical repair shop with the usual complement of equipment. 44/

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j. Products and Production.

The Kazakh Metallurgical Plant produces ingots, semifinished rolled products, channels, beams, rails, angles, bars, rods, plates, and hot-rolled sheets including roofing sheets. 45/

There are three general classes of structurals rolled: light, medium, and heavy, but the dimensions included in each class are not known. 46/ Plates are produced in widths of 50 centimeters (cm) to 2 m and thicknesses of 5 mm to 2 cm. Alloy plates, including an analysis of 0.14 carbon, 0.65 manganese, 0.59 silicon, 0.009 phosphorus, 0.24 sulfur, 14.05 chromium, and 0.35 nickel, and armor plate have been made in the past few years. 47/

Estimates of total rolled steel production for 1947 through 1953 are given in Table 3.

Table 3

Production of Finished Steel
at the Kazakh Metallurgical Plant
1947-53

Metric Tons

Year	Amount
1947	15,100 a/
1948	28,700 48/
1949	43,100 49/
1950	58,600 50/
1951	75,200 51/
1952	104,500 52/
1953	112,900 b/

a. Based on a 72 percent yield from ingot to finished rolled product.
b. Based on an 83 percent yield in keeping with yields obtained in 1951 and 1952.

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k. Distribution.

The rolled steel products of the Kazakh Metallurgical Plant are distributed principally to the construction and machine-building industries. 53/ In January and February 1952 the plant shipped heavy armor plate to China. 54/

For the most part, rolled steel products from the plant are consumed by the machine-building enterprises within the Central Asia area.

l. Plant Efficiency.

The Kazakh Metallurgical Plant must be considered as efficiently operated in view of the fact that the plans for both ingots and rolled steel have been consistently fulfilled year after year. Open-hearth and rolling mill production have been increased substantially each year since the plant was started.

In 1951, by reducing the sulfur content of the steel the number of off-beats in the open-hearth furnace was decreased by two-thirds and rejections of finished steel were cut in half. 55/

In the third quarter of 1951 the Kazakh open-hearth shop was rated second in All-Union Competition. 56/ In 1952, Kaptilov, the rolling mill foreman, was rated as the best rolling mill operator in the country. 57/

m. Administration.

The plant is under the Ministry of Ferrous Metallurgy. 58/

n. Personnel.

In 1947, there were 1,850 workers; in 1948, 2,050; and current employment is estimated at 2,500. 59/

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Bakst (fnu) has been director of the plant since it started and still held that position in January 1954. 60/ With Bakst in 1945 were Gerandor as chief engineer and Baglimbayev as open-hearth foreman. 61/

Sometime before 1954, Fyodor Voshchenko replaced Baglimbayev as foreman of the open hearth 62/ and between 1947 and 1952 Kaptilov was made foreman of the rolling mill, 63/ replacing Nurbekov. 64/

2. Karaganda Tank Plant imeni Stalin 1/ [redacted] 25X1A2g

a. Location.

49°50'N - 73°10'E, Karaganda, Kazakh SSR, Central Asia, USSR. 2/

b. History and Development.

Construction of this plant was finished in October 1944. 3/ The plant was built for the purpose of repairing combat tanks, especially of the T-34 type. 4/

c. Raw Materials and Other Inputs.

No information available.

d. Coking Facilities.

None.

e. Ironmaking Facilities.

None.

f. Steelmaking Facilities.

There is a steel foundry with one open-hearth furnace. There is no reliable information about the size of this furnace, but based on the character of other plant facilities and the

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estimated cast steel requirements of the reported number of tanks repaired, the capacity of the furnace is estimated at 25 tons and its 1953 production at 24,000 tons. 5/

g. Primary Rolling Mills.

None.

h. Finishing Facilities.

Steel casting shop.

i. Intraplant Services.

A double-track Soviet gauge runs two switches into the plant, which also is served by a fleet of 15 motor trucks from an outside motor pool. The foundry is supplemented by a well-equipped machine shop. 6/

j. Products and Production.

The foundry casts steel tank turrets, chains, turning rings, and other tank parts. 7/ It is estimated that 1953 production of steel castings was 13,000 tons.

k. Distribution.

All production of finished steel castings is consumed by the home plant. 8/

l. Plant Efficiency.

No information available.

m. Administration.

No information available.

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n. Personnel.

No information available.

3. Karaganda Mine Equipment Plant imeni Parkhomenko (Barashamen Mining Equipment Foundry) [redacted] 25X1A2gx

a. Location.

49°52'N - 73°10'E, Karaganda, Karaganda Oblast, Kazakh SSR, Central Asia. 1/ The plant is located 3 km southwest of the Karaganda coal station. 2/

b. History and Development.

A small plant has existed at this site since 1912, but in 1942 expansion was begun which was completed in 1947. 3/ The plant's production facilities are entirely devoted to the manufacture of mining equipment, from picks and shovels to large, mechanized coal-cutting machines.

c. Raw Materials and Other Inputs.

Quantities of raw materials consumed by the plant are unknown, but pig iron comes from Chelyabinsk, 4/ and coal is supplied by a small mine within the factory area. 5/ Sources of iron and steel scrap are not known.

d. Coking Facilities.

None.

e. Ironmaking Facilities.

There is one cupola of unknown capacity for the production of gray cast iron. 6/

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f. Steelmaking Facilities.

There are two 2-ton electric furnaces which produce 6 to 8 tons of steel every 8 hours. 7/ 1953 production is estimated at 7,500 to 8,000 tons.

g. Primary Rolling Mills.

None.

h. Finishing Facilities.

There are an iron foundry and a steel foundry which produce cast parts for the manufacture of coal mining equipment. 8/

i. Intraplant Services.

Industrial water comes from a small lake near the plant. 9/ Electric power is furnished by the Karaganda Power Plant. 10/

j. Products and Production.

Products of the ironmaking and steelmaking facilities are castings. Steel castings production in 1953 is estimated to be 4,500 to 4,800 tons based on a 60 percent yield of finished castings from steel production.

k. Distribution.

All the iron and steel products are consumed within the plant.

l. Plant Efficiency.

Labor productivity in 1952 rose 12 percent over 1951. 11/

m. Administration.

The plant is believed to be under the Ministry of Machine Building.

n. Personnel.

In 1950, Shudenitsch (fnu) was manager and Bjeli was chief engineer. 12/

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In 1948 the entire plant employed 800 people of which 40 percent were women and 200 were prisoners of war. 13/

4. Uzbek Metallurgical Plant imeni Lenin (Uzbek/Farkhadstroy) 1/

[redacted] 25X1A2g

a. Location.

40°12'N - 69°18'E, Begovat, Tashkent Oblast, Central Asia. The plant is located in the eastern end of the city of Begovat, 1,000 meters north of the Syr Dar'ya River, approximately 2 km northwest of the Farkhad Dam and 3 km east of the railroad and the bridge across the Syr Dar'ya River. 2/

b. History and Development.

In order to make use of the then undeveloped sources of raw materials of Central Asia and because of the desire for regional self-sufficiency, the Russians planned to establish a fully integrated steel plant at Begovat. Prior to the war, this area imported from other Soviet regions 100,000 tons of steel annually and as a result of wartime increase in industrial enterprise, consumption rose considerably. 3/

Originally, long-range planning called for four blast furnaces with a total capacity of 1 million tons of pig iron and an ultimate capacity of 1,250,000 tons of open-hearth steel annually. 4/ Initial construction was to provide an open-hearth shop, rolling mill, iron and steel foundries, boiler shop, power house, mechanical repair shop, refractory brick plant, and a transportation system. Later construction was to include a coke-chemical plant, a blast furnace department and a ferroalloy plant. 5/

Excavation began in September 1942 and by December the same year the foundations for the auxiliary shops were laid. In January 1943, construction of the first open-hearth furnace began; in February, construction of the rolling mill and electric power station was started; and in December 1943 a railroad was built to the site. The first open-hearth furnace began producing in March 1944 and the second in December 1944 while the electric station began generating power in May 1946 and the 300 structural mill produced its first products in August of 1946. 6/ Installation of a sheet rolling mill was begun in 1946. 7/ When the third open-hearth furnace was completed in 1948, it was announced that

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the open-hearth shop had reached planned capacity, indicating the original plans had been revised drastically. 8/

By 1946 a total of 50 million rubles had been spent in the plant. 9/

There is no evidence that any major production facilities have been added to this plant since 1948.

c. Raw Materials and Other Inputs.

The Uzbek plant receives raw materials as follows: pig iron from Magnitogorsk, coal from the Karaganda Basin, coke from Kemerovo, scrap from the scrap collection trust at Tashkent, and fuel oil from the Vannovskaya Petroleum Refinery. 10/ There is no direct information on the quantities of these inputs consumed by the plant.

d. Coking Facilities.

None.

e. Ironmaking Facilities.

There are no blast furnaces for the production of pig iron. The iron foundry has 1 cupola, 2 meters in diameter, which is operated 1 shift per day. 11/ On this basis it is estimated that cast iron production is 45,000 tons per year.

f. Steelmaking Facilities.

There are three oil-fired open-hearth furnaces. 12/ Although the furnace capacities are not given, by using a relationship between annual productions and announced coefficients for certain years, it is estimated that these furnaces are 50 to 60 tons capacity each. Annual steel production from the plant's beginning through 1953 are shown in Table 4.*

* Table 4 follows on p. 16.

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Table 4

Production of Steel at the Uzbek Metallurgical Plant imeni Lenin 1944-53

Metric Tons

Year	Amount
1944	No regular production 13/
1945	12,000 14/
1946	17,000 15/
1947	28,000 16/
1948	56,000 17/
1949	80,000 18/
1950	90,000 Plan 86,000 19/
1951	100,000 20/
1952	123,000 21/
1953	150,000 22/

Open-hearth furnace coefficients are reported for three years, as follows: 1948, 3.0 23/; 1951, 4.3 pledged 24/; 1952, 4.72 pledged. 25/

g. Primary Rolling Mills.

There is no blooming or slabbing mill at this plant, but the first section of the 300 mill serves as a breakdown mill for ingots. This mill set a record of rolling 535 ingots per shift in 1950. 26/

h. Finishing Facilities.

Finishing facilities at the Uzbek Metallurgical Plant are:

(1) Bar, Billet, and Structural Mill.

This combination mill, installed in 1946 and known as the 300 mill, is capable of rolling bars, billets, structurals, and rods in addition to doubling as a break-down mill for ingots. It consists

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of three stages: 600 - 420 - 300. Roll sizes are not given as the rolls are changed with each type of product rolled. At the time of installation the mill had an annual rated capacity of 60,000 tons of finished rolled products. 27/

(2) Sheet Mill.

This mill, believed to have been completed in 1949, was reported to be highly mechanized in 1952. 28/ It rolls commercial sheets and roofing sheet. Its capacity is unknown.

(3) Iron Foundry.

There is an iron foundry which produces approximately 28,000 tons of gray iron castings per year based on a 63 percent yield of the cupola production.

i. Intraplant Services.

(1) Electric Power.

Electric power consumed by the Uzbek Metallurgical Plant is furnished by the Begovat Heat and Power Plant, TETs, (Teploelektrotsentral' -- Steam Heat and Electric Power Station) which is tied in with the Central Asia electric power grid. 29/

(2) Other Services.

The plant has a mechanical repair shop, blacksmith shop, boiler house, and a compressor station. 30/

j. Products and Production.

Although original plans included the production of pig iron, ingots, ferroalloys, and rolled products, 31/ facilities for pig iron and ferroalloys were never installed. The plant presently produces only ingots, billets, strip, sheets, plates up to 5 mm thick, roofing sheet, rods of 17 mm diameter, and a wide variety of structural shapes. 32/ The bulk of the finished steel production is comprised of structural shapes and hot rolled sheets, including roofing sheets.

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Estimates of finished steel production for the years 1947 through 1953 are contained in Table 5.

Table 5

Production of Finished Steel at the Uzbek Metallurgical Plant imeni Lenin 1947-53

Metric Tons

Year	Amount
1947	20,200 a/
1948	40,400 33/
1949	64,000 b/
1950	70,200 34/
1951	79,100 35/
1952	101,000 36/
1953	117,400 37/

a. Based on a yield of 72 percent of ingot production.
b. Based on a yield of 80 percent of ingot production.

k. Distribution.

Since this plant was primarily established to provide the steel requirements for Central Asia, most of its rolled products are distributed to points within Region X such as Tashkent, Turksit, and Karaganda. In 1952 large quantities of structural shapes were shipped to Kuybyshev for the construction of the hydroelectric power plant and to the Turkmen Canal. 38/ Sizable shipments of rolled steel products have been made over the past several years to the new power stations and navigation and irrigation canals on the Volga, Dnepr, Don, and Amu-Darya Rivers. 39/

Rolled products from this plant are regularly supplied to the manufacturers of agricultural, coal mining, and oil-drilling machinery within the area and the Transcaucasus. 40/

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l. Plant Efficiency.

Judging from the manner in which ingot and rolled steel production has been increased since the 1948-49 period without additional facilities, the Uzbek Metallurgical Plant must be considered to be efficiently operated.

In 1952 the plant fulfilled the 6-month production program 41/ and during this same year product yields were pledged for 85 percent on structurals and 83 percent on sheets with inspection rejects to be kept to 3 percent maximum. 42/

Some open-hearth production was lost in January and February 1951 when the lack of scrap caused the furnaces to shut down for 350 hours. 43/

In the first part of 1953 labor productivity increased 26 percent. 44/

m. Administration.

The plant is under the Ministry of Ferrous Metallurgy. 45/

n. Personnel.

Some of the management at the Uzbek plant from 1946 to the present time were:

1946: F.F. Ryazanov, director; Kurbatov (fnu), chief engineer; S.C. Aitmetov, chief of construction; and A.L. Sergienko, chief of the rolling mill. 46/

1948: Khamsutsdin Arhunovich Khodzhayev, plant director. 47/

1951: I.F. Mukhamedov, plant director. 48/

1953: Trofimov (fnu), chief engineer. 49/

While the plant was under construction some of the labor scheduled to man it was trained at the Alapaevsk and Stalinsk Metallurgical Plants. 50/ The number of workers, reported as 1,500 in July 1946, 51/ has risen to between 2,000 and 2,500.

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5. Tashkent Locomotive and Railroad Car Repair Plant imeni Kaganovich 1/ (Krasnyy Vostochni 2/) [redacted] 25X1A2g

a. Location.

41°17'N - 69°17'E, Tashkent, Tashkent Oblast, Central Asia. The plant is located immediately southeast of the railroad station. 3/

b. History and Development.

The plant has been in existence for over 50 years and since 1919 has expanded tenfold. 4/ Open-hearth operations began in 1934. 5/ The plant suffered no war damage and apparently was not converted to the production of war materiel during World War II. 6/

c. Raw Materials and Other Inputs.

The quantities and sources of coal and pig iron are not known. Fuel oil was delivered from Baku in 1943 7/ but currently may come from the Fergana Valley. Thirty tons of scrap are consumed daily. 8/

d Coking Facilities.

None.

e. Ironmaking Facilities.

None.

f. Steelmaking Facilities.

There are 2 oil-fired open-hearth furnaces, each with a hearth area of 4.14 square meters and a capacity of 10 tons. 9/ Based on an estimated coefficient of 4.0, 1953 steel production is estimated to be 11,000 tons.

g. Primary Rolling Mills.

None.

h. Finishing Facilities.

The steel foundry makes castings for locomotive repairs.

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i. Intraplant Services.

The plant has a forge, machine shop, 10/ and a small inefficient power plant which is supplemented by outside sources. 11/

j. Products and Production.

Products are finished steel castings estimated at 6,600 tons in 1953 based on a yield of 60 percent from poured steel to finished casting.

k. Distribution.

The entire production of the foundry is consumed by the plant as parts for the repair of locomotives and railroad cars. 12/

l. Plant Efficiency.

No information.

m. Administration.

The plant is under the Ministry of Transportation. 13/

n. Personnel.

The entire plant employed 1,300 workers in 1950. 14/ Manager of the plant in 1951 was Rusak (fnu). 15/

25X1A2g

6. Tashselmash Agricultural Machine Factory imeni Voroshilov (Agricultural Machine Factory, Plant No. 702) 1/ [redacted]

a. Location.

41°20'N - 69°18'E. Tashkent, Tashkent Oblast, Uzbek SSR, Central Asia, USSR. 2/

b. History and Development.

This enterprise was started shortly after World War I for the purpose of producing agricultural machinery and was devoted to this type of production until the outbreak of World War II when conversion was made promptly to the production of mortars, mortar shells, and

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other munitions of war. 3/ There appears to have been no damage. 4/ Promptly after the cessation of hostilities, the plant was reconverted to the manufacture of agricultural facilities, emphasizing cotton-picking combines. 5/

c. Raw Materials and Other Inputs.

The principal raw materials required for the foundry at this plant are pig iron received at the rate of 5,000 tons per year from Magnitogorsk, and scrap in the amount of 6,000 tons per year derived from various sources in Central Asia. 6/ Other inputs received from time to time in varying amounts are coal, coke, limestone, 7/ fire brick, 8/ and sand. 9/

d. Coking Facilities.

None.

e. Ironmaking Facilities.

There are 4 coke-fired cupolas melting iron in this foundry. Some of the iron so produced is used for direct casting in the gray iron foundry, and the rest is blown into steel in the Bessemer converters discussed under f, below. 10/ The cupolas rotate in operation; three producing iron while the fourth is idle. 11/ Production is 90 tons of iron per day, or about 30,000 tons per year. 12/ Of this, two-thirds is devoted to gray iron castings, while one-third is blown in the Bessemer converters. 13/

f. Steelmaking Facilities.

There are 3 Bessemer converters, each with 3.5-ton capacity. 14/ The converters rotate in operation; one producing steel while the other is idle. Production is 30 tons of steel per day, or 10,000 tons per year. 15/ Estimated production in 1953 was 10,000 tons.

g. Primary Rolling Mills.

None.

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h. Finishing Facilities.

Features of the steel foundry are a molding shop, sand-blasting apparatus, 2 oil-fired annealing furnaces, 8 semiautomatic casting machines, 4 drying furnaces, 16/ and 2 overhead cranes, each of 5-ton capacity. 17/

i. Intraplant Services.

Adjuncts to the steel foundry are a machine shop and a polishing and assembly shop. 18/ Six switches enter the plant from the Soviet-gauge Turkestan-Samarkand Railway. 19/ A narrow-gauge system operates within the plant. 20/ Electric power comes from the power plant at Begovat on the Syr-Darya River. 21/

j. Products and Production.

Approximately 6,000 tons of finished steel castings are produced in the principal forms of spur gears, levers, tank track wheels, and track links. 22/ End products are agricultural machinery (especially cotton-picking combines), mortar mounts, tractors, caterpillar parts, and various other types of moving equipment. 23/

k. Distribution.

Steel castings produced here are consumed entirely in the manufacture of the end products of the home plant. These end products are distributed throughout the agricultural regions of the Turkmen and Kirghiz SSR's and generally throughout the cotton growing areas of Central Asia. 24/

l. Plant Efficiency.

Thirty percent of the castings made here are rejected. 25/

m. Administration.

No information.

n. Personnel.

The foundry employed about 400 workers in 1949. 26/

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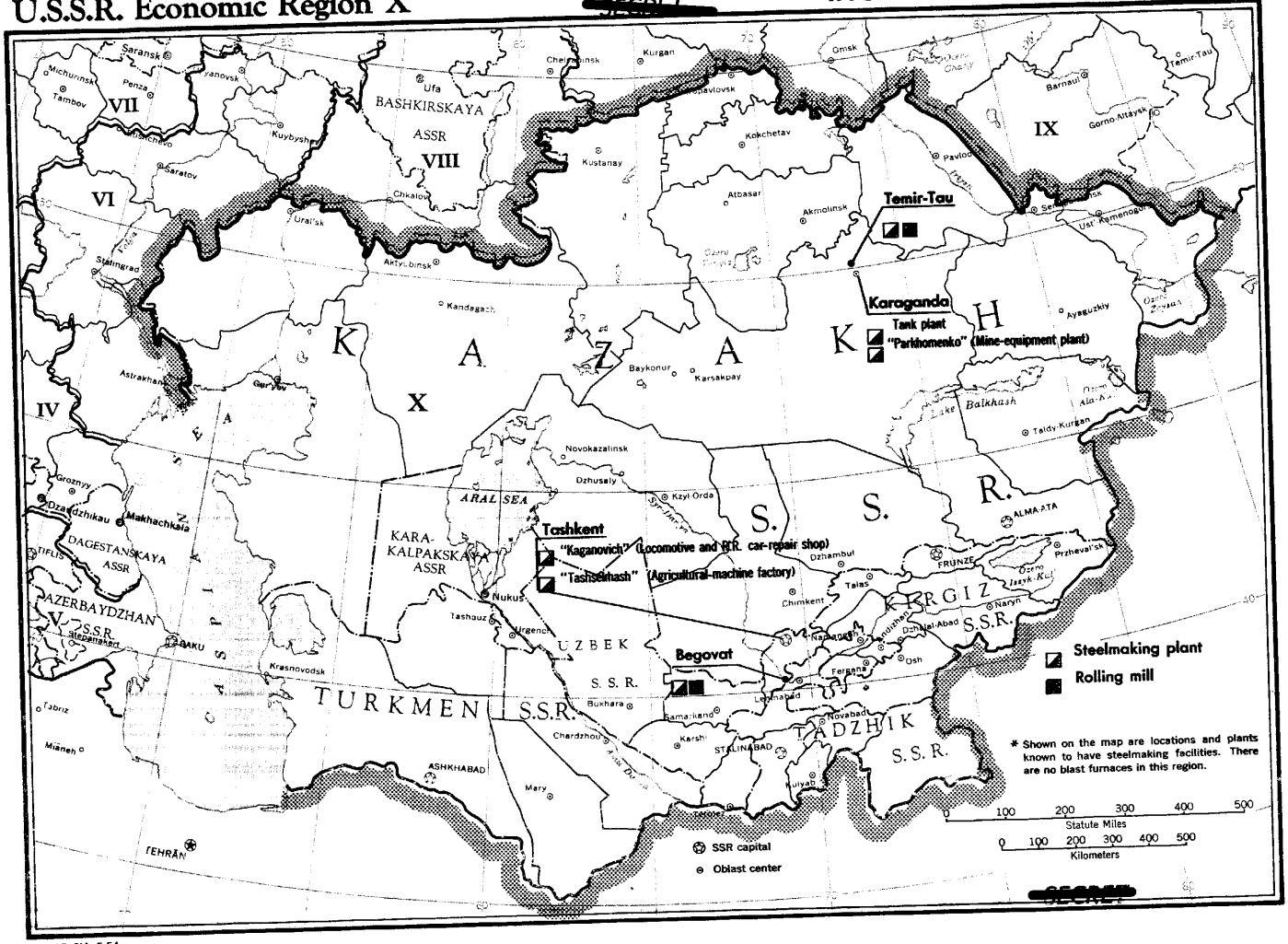
U.S.S.R. Economic Region X

[redacted]

IRON AND STEEL PLANTS*



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APPENDIX A

PLANT SUMMARY TABLES

Table 6

Production and Capacity
of the Kazakh Metallurgical Plant
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
3 Open-Hearth Furnaces	136.0
Finishing Capacities	
400 Bar and Billet Mill	Unknown
280 Bar and Structural Mill	Unknown
Sheet-Plate Mill	Unknown
Wire Mill	Unknown
Iron Foundry	Unknown
Finished Steel Production	112.9
Power Plant Capacity	None

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Table 7

Production and Capacity
of the Karaganda Tank Plant imeni Stalin
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
1 Open-Hearth Furnace	24.0
Finishing Capacity	
Steel Foundry	Unknown
Finished Steel Production	
Castings	13.0
Power Plant Capacity	None

Table 8

Production and Capacity
of the Karaganda Mine Equipment Plant imeni Parkhomenko
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
2 Electric Furnaces, 2-ton Capacity Each	8.0
Finishing Capacities	
Iron Foundry	Unknown
Steel Foundry	Unknown

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Table 8

Production and Capacity
of the Karaganda Mine Equipment Plant imeni Parkhomenko
1953
(Continued)

	Thousand Metric Tons
Finished Steel Production	
Castings	4.8
Power Plant Capacity	None

Table 9

Production and Capacity of the Uzbek
Metallurgical Plant imeni Lenin
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
3 Open-Hearth Furnaces	150.0
Finishing Capacities	
Bar, Billet, and Structural Mill	60.0
Sheet Mill	Unknown
Iron Foundry	Unknown
Finished Steel Production	
Rolled Steel Shapes	117.4
Iron Castings	28.0
Power Plant Capacity	None

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Table 10

Production and Capacity of the Tashkent Locomotive and Railroad Car Repair Plant imeni Kaganovich
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
2 Open-Hearth Furnaces, 10-Ton Capacity Each	11.0
Finishing Capacities	
Steel Foundry	Unknown
Finished Steel Production	
Castings	6.6
Power Plant Capacity	Unknown

Table 11

Production and Capacity of the Tashselmash Agricultural Machine Factory imeni Vorashilov
1953

	Thousand Metric Tons
Metallurgical Coke Production	None
Pig Iron Production	None
Steel Production	
3 Bessemer Converters, 3.5-Ton Capacity Each	10.0

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Table 11

Production and Capacity of the Tashselmash Agricultural Machine Factory imeni Vorashilov
1953
(Continued)

	Thousand Metric Tons
Finishing Capacities	
Steel Foundry	Unknown
Finished Steel Production	
Castings	6.0
Power Plant Capacity	None

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APPENDIX B

METHODOLOGY

Methodology employed in estimating steel and finished steel production of the two larger plants in this report consisted principally of determining the output of one of the early years in life of the plant and applying the announced percentages of increases to the succeeding years. Most of the increases were found in the Soviet newspapers and generally were confirmed by other sources.

On the smaller plants, all of which are foundries in manufacturing plants, yearly increases were not available. In estimating production of these plants various means were used. For example, where hearth areas and coefficients of utilization were available, annual steel production was determined in accordance with the following formula:

Hearth Area (sq m) x Coefficient MT/sq m/24 hrs x Number of Working Days/Year = Annual Steel Production (MT)

In another case where steel was produced by Bessemer converters and the only source of hot iron was the cupolas, production was based on the available iron after subtracting that which was made into gray iron castings.

In one or two plants daily production was available either in tons per day or number of heats per day, and annual output was determined by multiplying by an assumed number of working days per year.

Finished steel castings were derived by taking a 55 percent yield of liquid steel if it was thought that large castings were made or by using a 60 percent yield where small castings were produced.

Finished iron castings were based on a yield of 63 percent from poured iron to finished castings.

Finished rolled steel products were derived from a yield of 72 percent from ingot to finished product except in cases where previous year's performance indicated a larger or smaller yield to be applicable.

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APPENDIX C

GAPS IN INTELLIGENCE

Coefficients of utilization were not available for any of the open-hearth furnaces located in the foundries of manufacturing plants.

In most cases, specific recent data such as actual hearth areas of open-hearth furnaces, daily, weekly, or annual tonnages of steel and finished steel were lacking. This was particularly true of the smaller installations.

There were pronounced gaps in intelligence regarding the capacities of finishing mills, and requirements, and sources of raw material inputs.

With the exception that most of the rolled steel products produced in the area are consumed within the region, information on use patterns was practically nonexistent.

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APPENDIX D

SOURCES AND EVALUATION OF SOURCES

1. Evaluation of Sources.

In general, sources concerning the two major steel plants in Region X were adequate. The provincial newspapers were an excellent source of information up to and including 1952. Information on these two plants appeared to wane in 1953.

Although newspaper coverage on the other plants was plentiful, the information dealt with machine production and not with the steelmaking facilities.

For the most part prisoner-of-war reports from this area were concerned with Japanese prisoners and contained little information of value. Reports from German prisoners-of-war, although of better quality, still were inadequate.

2. Sources.

Evaluations, following the classification entry and designated "Eval.," have the following significance:

Source of Information	Information
A - Completely reliable	Doc. - Documentary
B - Usually reliable	1 - Confirmed by other sources
C - Fairly reliable	2 - Probably true
D - Not usually reliable	3 - Possibly true
E - Not reliable	4 - Doubtful
F - Cannot be judged	5 - Probably false
	6 - Cannot be judged

"Documentary" refers to original documents of foreign governments and organizations; copies or translations of such documents by a staff officer; or information extracted from such documents by a staff officer, all of which will carry the field evaluation "Documentary" instead of a numerical grade.

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Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

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