CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY Hungary

SUBJECT Manganese Ore Mining

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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

1. Hungary has two manganese mines working, one at Urkut and the other at Epleny. Only the mine at Urkut is of importance.

2. In 1952-53, at the request of the Hungarian Government, large scale manganese prospecting was carried out in the Bakony mountains, and in the neighborhood of Egerdemjen, near the town of Eger.

3. Manganese Mine of Urkut.

a. This mine is about 20 km. west of Veszprem. Mining started in 1917. In the 1930's production dropped considerably but during the war went into full swing again. After the war the mine was taken over by the Russians as representing German property, but in 1952 it was handed over to the Hungarian Government in exchange for the bauxite industry.

b. The mine has two vertical shafts and one sloping shaft.

(1) Shaft No. 1 is the oldest. In 1953 the area of this shaft was exhausted and dismantling of the shaft began.

(2) Shaft No. 2 is showing signs of exhaustion. It has only one pair of rails leading into it and is supported with timber only. It yields no more than one quarter of the entire production.

(3) Shaft No. 3 was sunk after the war. It is a modern double concrete-lined shaft, depth 140 meters. Most of the output comes from here. The main communication gallery which goes into the eastern part of the mine starts from this shaft. (See Annex 3).

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(NOTE: Washington distribution indicated by "X"; Field distribution by "#".)

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(4) A sloping shaft is under construction which will facilitate the mining of about 150,000 tons of ore left in the pillar of shaft No. 1.

c. Types of Ore.

(1) In the Urkut mine two types of ore are to be found. At present only one type is mined. This is the black, oxide-type ore. The minerals of this ore are pyrolusite and psilomelane. In its crude state the ore contains about 18% to 20% SiO_2. In the process of washing two thirds of the ore are lost with the water, consequently only one third of the mined quantity reaches the furnace. Much of the small grained ore is left in the mud after washing; this is separated with the hydrocyclone which was set up a year ago. Afterwards the fine grained ore is put into the furnace together with the lumps of ore that were obtained through washing.

(2) In 1953 a new type of ore deposit was located on the western fringe of the old field. It is a mineral assembly characterized by carbonates of a whitish-grey color. The minerals are rhodochrosite and some oligonite (sic) ($MnCO_3$ and $MnFeCO_3$). The ore has 21% - 30% Mn, 4-6% Fe and 6% - 25% SiO_2. It is not yet being mined.

(3) The oxide-type ore is generally 1.5-5 meters thick. The new type of ore, characterized by carbonates, is 13-38 meters thick. The oxide ore is at a depth of 70-180 meters in the areas where it is being mined or where its position has been ascertained by exploratory borings. The carbonate ore has been prospected down to 150-280 meters. It is irregularly deposited and has a dip of 12°-20°. (A diagram of the strata in the mine is given at Annex 4).

d. Production Data.

1953 - raw ore (oxide) 227,000 tons; washed ore - about 70,000 tons
1954 - (planned) - raw ore (oxide) 250,000 tons

e. Reserves of the Ore.

Oxide ore - 2 million tons
Carbonate ore - 35 to 40 million tons

f. Exploitation.

(1) The raw ore is transported to the washing plant by trolleys. The washing plant has a simple mechanical enriching system. The ore is ground in several stages and then washed with water. This plant was built by the Germans. The enriched ore is separated into three different grain sizes; what is left goes into the hydrocyclone, where the very small grains of ore are separated from the mud and clay by the whirling water.

(2) The products of the washing plant and the hydrocyclone are transported by trolleys, drawn by small steam and diesel engines, to Felsőcsinger. Here the ore is loaded into railroad cars; the greater part goes to Ózd, the remainder to Sztalinváros.

(3) The ore is used for various purposes in the steel industry. Mostly only finished products (melted ferro-manganese) are exported. The main importing country is Czechoslovakia. Recently some ore has also been sent there.

g. Mechanization of the Mine.

(1) The ore is hewed without charges, by means of pressure hammers. Charges are only used when a new cutting has to be opened in the limestone. All the transport cuttings are in the limestone underneath the ore seams, because no timber and lining is required here.

(2) There are no hewing machines in the mine. The ore is mostly transported to the heads of the main transport cuttings by hand; only in five or six cuttings is there a short transport belt for the taking away of the ore. In shaft No. 3, in the main transport cutting, the trolleys are moved by a circular rope; in shaft No. 2 they are drawn by horses. Mining is done from chambers at every 25-50 meters.

(3) There is no serious danger of flooding in the mine. The average daily flow of water is 1.2 m^2/min.

h. Leading Personalities.

Manager - Márton Rieger
Chief Engineer - Georgieff D. Trojan

i. Manpower

There are about 50 administrative staff and 1,100 miners.

4. Manganese Mine of Eplény.

a. This mine is about 13 km. north of Veszprém. It was opened about 1930. It is a very small mine with only one main horizontal shaft with a small pit at the end of it. This pit has a mechanical counter-weighted lift. From the pit several shafts open out, with 20 meters difference in levels. All these shafts are cut along the strike.

b. The ore of Eplény has 23%-28% Mn, 5%-10% Fe and 20%-27% SiO_2. It is of the oxide type. It is sent direct to the furnace without any washing. The thickness of the seam is 1.2 m - 2 m. The ore deposit has a dip of 15°-22°. There is no danger of flooding in the mine.

c. The trolleys are drawn by horses to the railroad station. Hewing is done by pressure hammers only.

d. Production Data.

1953 - 48,000 tons
1954 (planned) - 30,000 tons

e. Reserves.

300,000 tons.

f. Leading Personalities.

Manager - Istvan Kisbajcsy
Technical Director - Mátyás Labudek

g. Manpower.

There are about 30 administrative staff and 100 miners.

5. Manganese Prospecting.

a. The large scale prospecting carried out in 1952-53 in the Bakony mountains revealed some 300,000 additional tons of oxide ore at the Eplény mine, without which the mine would have been exhausted, some 500,000 tons of oxide ore at Urkut, and the 35,000,000 to 40,000,000 tons of carbonate ore at Urkut. (See paragraph 3 c (2).

b. Prospecting was by means of 25 exploratory borings from 150 to 250 meters deep in the neighborhood of Borzavár and Lókut. Exploration was continuing in June 1954.

c. Further prospecting near Eger, at Egerdemjén, revealed manganese deposits with only 5% to 12% manganese content, which are not worth exploiting.

6. Future Prospects.

a. The newly discovered carbonate type of manganese ore (35 to 40 million tons around Urkut) is the largest manganese deposit in Europe. Previously this type of ore was thought to exist only in the USSR.

b. The Hungarian Government hopeseventually to mine 400,000 tons of this carbonate ore a year. The oxide ore of which the reserves, as has been stated, are not very large, will not be used for the production of alloys for which the carbonate ore can be used, but only for the production of ferro-manganese, for which the carbonate ore cannot be employed. The Government intends to mine only 50,000 tons a year of the oxides, which they estimate will be enough to meet internal requirements in ferro-manganese and allow for increased export of ferro-manganese finished products for the purpose of earning foreign currency.

c. Present transport facilities are not adequate for an extensive mining of the carbonate ore. It is therefore intended to connect Urkut to Ajka with a new railroad line. Since the carbonate ore loses some of its weight after roasting and increases in manganese content, it has been decided to roast the ore at the mine, and thus facilitate transport. A roasting plant will, therefore, be built at Urkut.

d. It is estimated that the above plans are unlikely to be implemented before 1956.

Annexes:
1. Area of manganese mines and prospecting (1 page)
2. Urkut manganese mine (1 page)
3. Shaft No. 3 at Urkut (1 page)
4. Diagram of the strata at Urkut (1 page)

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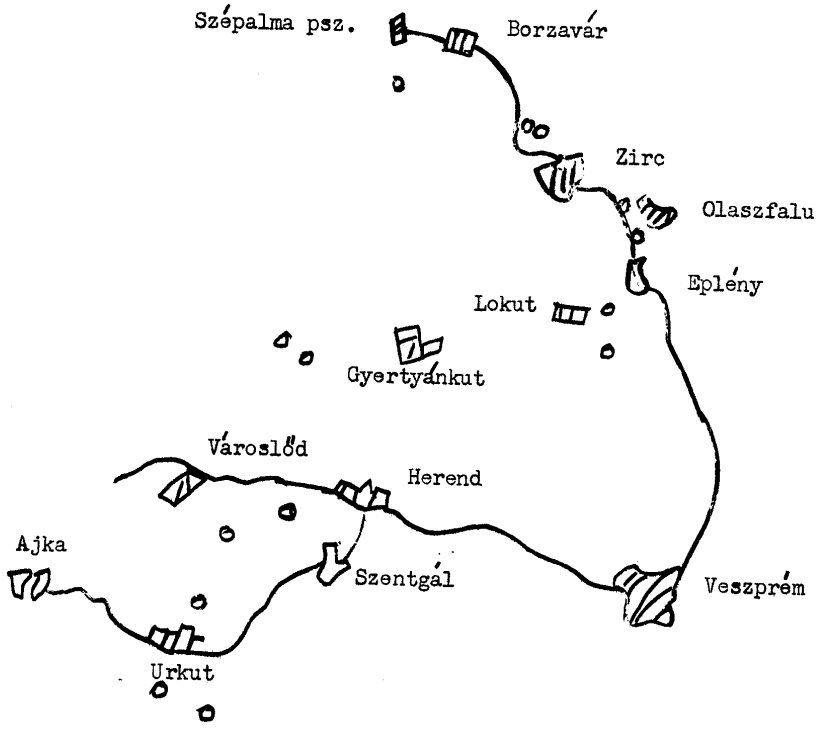
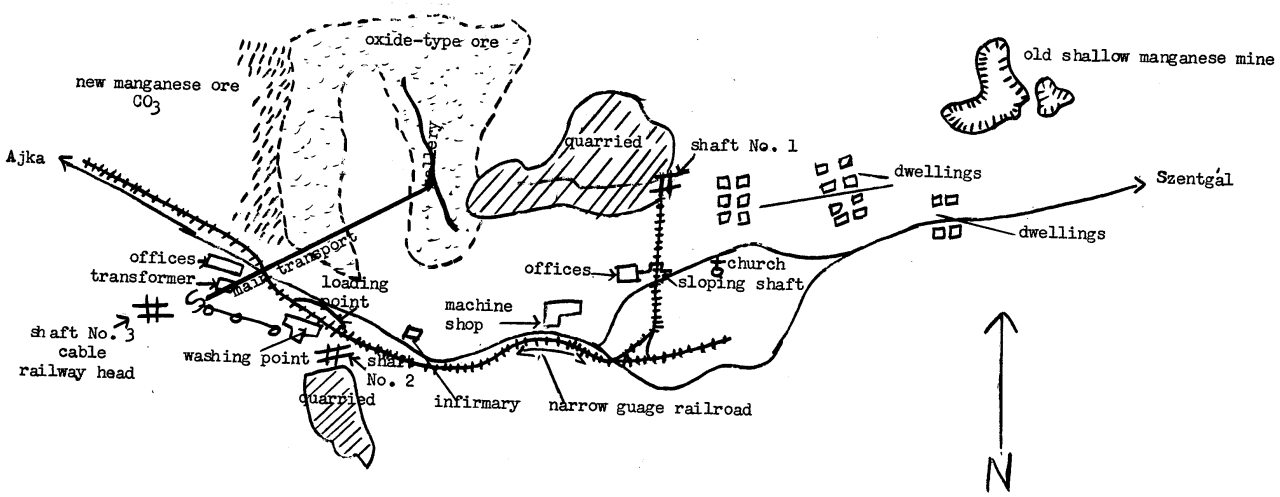
Annex 1: Area of Hungarian Manganese Mines and Prospecting in 1952-53



o = Prospecting Sites.

Grade manganese mine



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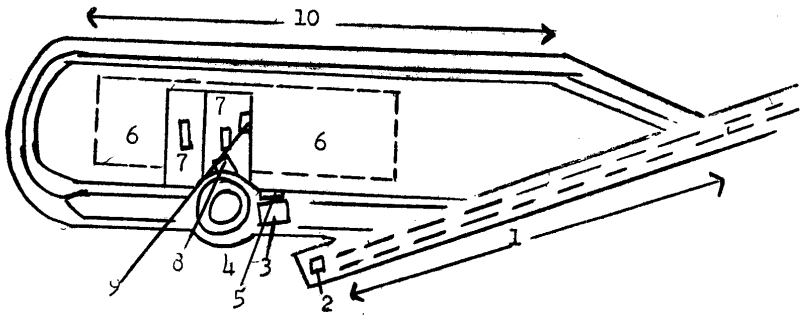
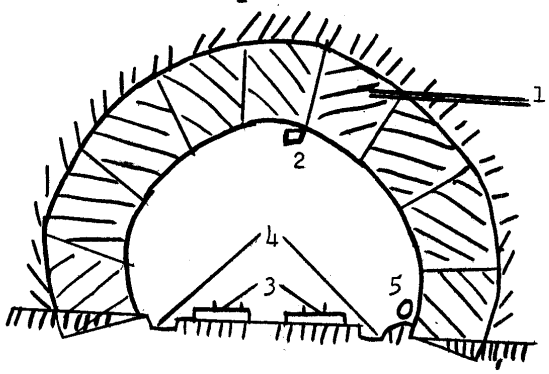
Annex 3: Shaft No. 3 at Urkut

I.



II.



I.
1. Main transport shaft.
2. Engines at end of rope
3. Automatic trolley-pusher
4. Pit
5. Signals
6. Cistern
7. Compressor space
8. Escape shaft
9. Pump chamber
10. Bay shaft

II.
1. Concrete bricks
2. Electric cable
3. Mine railway
4. Water channels
5. Pressurized air pipe

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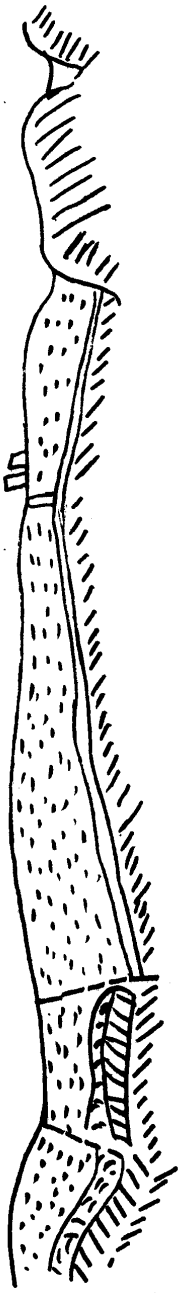
Annex 4: Diagram of the Strata at Urkut



Younger (eocene cretaceous) cover

Older (jurassic) cover

Oxide-type manganese ore

New carbo-matic type ore

Jurassic bedrock