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ECONOMIC COMMITTEE

COBALT AND NICKEL SUPPLIES FOR THE COMECON MEMBER  
COUNTRIES, ALBANIA AND YUGOSLAVIA  
(the situation in December 1975)

Note by the German Delegation

INTRODUCTION

Russia and Cuba are big nickel and cobalt producers and have an export capacity. Rumania and Hungary rely entirely on imports, some of which come from the West. Bulgaria, Czechoslovakia and Poland produce small amounts of cobalt but they depend entirely or partly on imports for their supplies of nickel.

2. The GDR meets all its cobalt needs by importing from the West and obtains nickel either from its own deposits or from the Soviet Union or Cuba.

3. The ferronickel ore produced in Albania is at present intended for export only. In Yugoslavia, ferronickel is to be produced from national deposits.

I. BULGARIA

Cobalt

4. Cobalt has been produced in the Plovdiv non-ferrous metals combine since around 1965. 1970 saw the start of production of metallurgical mixtures of hard-powdered alloys made up of tungsten and cobalt compounds and a little later of tungsten-titanium-cobalt compounds. The necessary raw materials come from the deposits situated in the Rhodope, more particularly those close to Kurdzhali and Kurilo (see Annex I). No information is available on the amounts produced, but they are probably very small.

This document includes: 3 Annexes

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Nickel

5. Nothing is known of Bulgarian nickel supplies; they probably come from the Soviet Union and Cuba.

II. CZECHOSLOVAKIA

Cobalt

6. Cobalt is produced, among other things, in the Sereď nickel foundry; no detailed information is available (see Annex I). In 1973, Czechoslovakia imported 4.9 tons of cobalt from Finland.

Nickel

7. No nickel is mined in Czechoslovakia; requirements, which are estimated at 4,500 tons a year, are met mainly from imports (3,722 tons in 1973). The main supplier is the Soviet Union with 3,053 tons in 1973, followed by Cuba with 300 tons in the same year. But Czechoslovakia itself produces refined nickel (about 1,800 tons in 1973). Part of the ferronickel ore used to make steel and imported from Albania is processed into nickel steel at the Sereď nickel foundry (see Annex I). The same probably applies to the nickel concentrate obtained from Cuba, but if so this is a recent development.

III. GDR

Cobalt

8. The GDR produces no cobalt of its own. Up to 1965, some 150 tons were imported from the Soviet Union but with the start of the 1965-1970 Five-Year Plan, the Soviet Union refused to make further deliveries. No supplies can be obtained from the other Communist countries and the GDR depends exclusively on imports from the West. In 1972, for instance, it purchased 10 tons of cobalt from Zambia.

GDR COBALT SUPPLIES (in tons)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1975</u> <u>planned</u>
Imports from Western countries	180	180	200	200	230

To meet demands, some 200 tons of ferrocobalt are also imported from Western countries each year.

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Nickel

9. In 1947, nickel deposits were located near Callenberg and Kuhschnappel (situated between Zwickau and Chemnitz), and have been worked since 1955. The ore, which is derived from the decomposition of ophite, contains from 0.6 to 0.9% of Ni and is open-mined. The information supplied on the reserves would seem to be exaggerated, but it is reasonable to believe that deposits with a nickel content of at least 100,000 tons exist. Because of the high iron content of the ore, the production of pure nickel is not a paying proposition (see Annex I).

10. In the "VEB Nickelhütte St. Egidien" (St. Egidien "VEB" Nickel Foundry), situated south of the deposits, the extracted ore is processed and transformed into ferronickel blooms. These have been used by the "VEB Ferrolegierungswerk Lippendorf" ("VEB" ferro-alloy plant) near Leipzig for the manufacture of ferronickel. However, since the end of 1974 this work has been done on the spot at St. Egidien (see Annex I).

GDR production of ferronickel (Ni content in tons)

<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1975 planned</u>
1,750	1,850	1,920	2,100	2,400

11. The GDR makes pure nickel from sulphurated nickel ore concentrates from Cuba. Manufacture takes place in the "VEB Nickelhütte AUE" ("VEB" AUE nickel foundry) in the Vogtland (see Annex I), which is part of the Mansfeld combine. Most of the GDR's nickel requirements are covered by imports from Russia.

GDR supplies of pure nickel (in tons)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1975 planned</u>
National output	240	240	240	240	240
Imports from the Soviet Union	2,000	2,500	2,500	3,000	4,000
	<u>2,240</u>	<u>2,740</u>	<u>2,740</u>	<u>3,240</u>	<u>4,240</u>

The GDR has imported from Cuba the following quantities of sintered nickelcobalt (in tons)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1975 planned</u>
	350	280	350	700	700

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12. No detailed information is available on the processing and use of these imports. It may be that Cuba is unable to meet completely the GDR's demand for nickel ore concentrates, because in 1975 the GDR considered purchasing 2,000 tons of sulphurated nickel ore concentrate from some Western countries.

IV. CUBA

Cobalt

13. The lateritic nickel ores contain between 0.10% and 0.15% of cobalt. The present Cuban cobalt output is around 1,500 to 1,600 tons a year. The cobalt is not extracted pure but occurs in the proportion of 3-5% in the nickel sulphide and sintered nickel oxide output of the Nicaro plant and at Moa Bay (see Annex 2). The national demand for cobalt is infinitesimal and even non-existent and the entire production of the island is exported. (see paragraph 14).

Nickel

14. The ore deposits in Cuba have a nickel content of 16.3 million tons (1970), which represents about 20% of the world nickel reserves. At present, some 36,000 tons of nickel contained in sintered nickel oxide (77% Ni) and in sulphurated nickel concentrates (55% Ni) are produced.

15. The deposits and centres of production are in Oriente province in the North East of the island, at Nicaro and Moa Bay (see Annex 2). The two plants have a capacity of 42,000 tons of nickel and cobalt. A third plant under construction at Punta Gorda in the same area (see Annex 2) will have an annual capacity of 30,000 tons, expandable to 90,000 tons. It is probably planned to make ferronickel there. Thanks to Soviet assistance, Cuban nickel production has been rising since 1973. Moscow has already made US \$67 million available to Cuba out of a total COMECON credit of US \$600 million.

16. The planned production is 66,000 tons of nickel in 1976 and about 130,000 tons in 1985. However, since Soviet assistance has so far been slow in coming the first stage of the plant extension programme will certainly not be finished in 1976.

17. The national demand for nickel must be virtually nil and Cuba's output is intended for export - about half to the Soviet Union and half to other COMECON countries and the West.

V. MONGOLIAN PEOPLE'S REPUBLIC

18. Nothing is known of the nickelcobalt deposits in the Mongolian People's Republic. There is no reference to these metals in the joint COMECON programme for the prospection of heavy non-ferrous metals between 1976 and 1980. Mongolia does not at present require nickel or cobalt.

VI. POLAND

Cobalt

19. The ores in the Polish Lüben (Lubiń) - Glogau (Glogow) copper belt contain, inter alia, cobalt. The metal is extracted in small quantities in the Glogau (Glogow) copper foundry (see Annex 1). In 1972, Poland purchased 20 tons of cobalt from Zambia.

Nickel

20. About two-thirds of Poland's nickel requirements are met from imports; the output of Polish mines is estimated at some 1,500 tons a year.

21. The only nickel deposits in Poland are in the Gläsendorf (Szklary) area near Frankenstein (Zabkowice). The ore extracted, which has an approximate Ni content of only 1%, is processed into ferronickel at Gläsendorf (Szklary). For a little while now, small quantities of nickel have been extracted in the Glogau (Glogow) copper foundry as a bi-product of the copper ore from the Lüben (Lubiń) - Glogau (Glogow) copper belt. The non-ferrous metals rolling mill at Laband (Laby) near Gleiwitz (Gliwice) produces secondary nickel from scrap. In 1972 there was still a small nickel plant at Crossen an der Oder (Krosno Odrzanskie) but no precise information is available (see Annex 1 for location of production centres).

22. The additional supplies of nickel needed by Poland have until now been imported, mainly from the Soviet Union. In 1974, Poland concluded an agreement with Cuba to purchase nickel in exchange for metal goods. At the end of March 1975, Poland and Yugoslavia signed an agreement on the granting to Yugoslavia of Polish credit in cash and goods for the construction of the Kavadarci ferronickel plant. Yugoslavia is to reimburse the credit by supplying some 350,000 tons of ferronickel over a period of 15 years. This agreement will make Poland independent to a large extent of Soviet supplies.

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VII. RUMANIA

23. Rumania depends entirely on imports for its nickel and cobalt. No information is available, however, on the quantities of cobalt imported and consumed. As late as 1968, all Rumania's nickel requirements were met by the Russians, but since then nickel has also been imported from Cuba, Finland, the Netherlands, Cyprus, France, the United Kingdom, Sweden and Albania.

24. To meet its requirements (1973: about 2,000 tons) Rumania is planning to participate jointly with a German partner in an international consortium to exploit a nickel deposit in Burundi.

VIII. SOVIET UNION

Cobalt

25. Russia's cobalt reserves, which occur mainly in nickelcobalt ores, are estimated to be 100,000 tons, which is about 4% of world reserves. The cobalt and nickel workings are located in the same areas. The proportion of nickel to cobalt in the Norilsk ores is 30:1. Cobalt concentrate and cobalt steel are produced at Monchegorsk and Pechenga in the Kola Peninsula, at Norilsk in north-western Siberia, Orsk, Buruktal, Ufaley and Rezh in the southern Urals, Chirchik near Tashkent and at Khovu-Aksy in the Tuvinskaya autonomous province east of the Altai range (see Annex 3). The production of metal takes place only at Ufaley, Norilsk and Chirchik (cobalt powder); the cobalt concentrate output from the other plants is refined into cobalt steel at Ufaley. The Tuvinskaya cobalt combine in Khovu-Aksy, which came into operation in 1970 and processes polymetallic ores, is to be further expanded. However, since errors were made in calculating the metal content of the ores to be refined, the combine will be unable to meet its target of 25% of Soviet cobalt output.

26. In 1973, Soviet cobalt output was 4,900 tons. As a result of its expansion, the Norilsk nickel plant will produce 7,000 tons of cobalt during the first half of the 1980s, which means that total output should be at least 10,000 tons. In July 1975 the Soviet Union was planning to purchase 50 tons of cobalt on offer in Belgium. No information is available on exports.

Nickel

27. The Soviet Union's nickel reserves are estimated at 5.5 million tons or about 8% of the world total. Nickel is produced at Pechenga and Monchegorsk in the Kola Peninsula, at Norilsk in north-western Siberia, at Rezh, Ufaley, Orsk and Buruktal in the southern Urals and at Pobugskoye in the Ukraine (see Annex 3). Norilsk, which accounts for some two-thirds of total output, is a very important production centre. Soviet industrial expansion plans for nickel give absolute priority to Norilsk. The "Severonickel" combine at Monchegorsk also refines the nickel concentrate produced at Pechenga. The Kola Peninsula and Norilsk deposits are of sulphurated nickel-copper ores while those mined and refined in the southern Urals are lateritic nickel ores. Concentrates from Cuba are also refined at Buruktal. A ferronickel plant with a planned capacity of between 40,000 and 45,000 tons a year has been under construction there for some years. It is not known whether nickel is also extracted from the polymetallic ores produced by the Tuvinskaya cobalt combine at Khovu-Askya (see paragraph 25). The Ukraine's one and only nickel plant, which is located at Pobugskoye near Kirovograd, came into operation in 1973 and production is around 20,000 tons of nickel a year, contained in ferronickel. In all probability, this plant processes lateritic nickel ore from Kapitanovka, some 100 km to the south-west.

28. In 1974, Soviet nickel output totalled around 205,000 tons. It is planned to raise output to 300,000 tons a year in the first half of the 1980s. The Soviet Union is already the world's second-biggest nickel producer, the first being Canada.

29. Within COMECON, the Soviet Union participates in the development of the Cuban nickel industry and imports about half Cuba's nickel output, which stood at around 36,000 tons in 1974. Russian and Cuban nickel exports (excluding the Cuban supplies earmarked for Russia) cover most of the nickel requirements of the COMECON member countries. The Soviet Union has also exported nickel to the industrialized Western countries; France with approximately 3,000 tons and the United States with 6,000 tons were among the recipients in 1974.

IX. HUNGARY

30. Hungary relies completely on imports for its nickel and cobalt supplies. Nothing is known of the amount of cobalt imported and consumed.

Until 1969, all Hungary's nickel requirements were met by the Soviet Union; since then, purchases have also been made in Cuba and Canada. The 1974 requirements were around 1,500 tons.

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X. ALBANIA

Cobalt

31. Albania produces no cobalt. The Albanian ferronickel ores, which come mainly from the east of the country (Lake Okhrida) have a cobalt content of 0.06%.

- Nickel

32. Albania has large ferronickel ore reserves (20 million tons in 1956) with a Ni content of 1%. The mining areas are situated around Memelisht-Cervenake, Pishkash, Pogradec and Librazhd, which are all in the region of Lake Okhrida, and near Bushtrice in the north of the country (see Annex 1). Other deposits are being exploited in conjunction with the Chinese People's Republic.

In 1973, 384,000 tons of ore were mined and the figure for 1975 is expected to be 650,000 tons. All the amounts extracted are exported to Czechoslovakia, the Chinese People's Republic, Hungary, Yugoslavia and Austria. There are no plans to produce nickel in the future; the ore is to be processed into crude iron or steel at the Elbasan plant which is in the course of construction.

XI. YUGOSLAVIA

Cobalt

33. According to the available information, no cobalt is produced in Yugoslavia. Nothing is known of imports, but the country exported 20 kilos of cobalt oxide to India in October 1975. It is planned shortly to exploit the nickel ore deposits situated in Southern Macedonia, which have a cobalt content of 0.06%. Their use has already been referred to in Yugoslav publications.

Nickel

34. No nickel ore has been mined in Yugoslavia so far. Requirements are covered by imports from the West which, in 1973, amounted to 1,140 tons. Two known nickel deposits are to be exploited in the near future in the region of Kavadarci in Southern Macedonia and near Pristina in the autonomous province of Kosovo (see Annex 1).



35. Mining was planned to begin in 1972 near Kavadarci and a ferronickel plant should have started operations in 1976. However, it was only at the beginning of 1975 that the money to finance these projects was forthcoming in the form of credits from the United States, the Soviet Union and Poland. It is now planned to produce, from 1979 on, 64,000 tons of ferronickel (with an Ni content of 25%) and 600,000 tons of iron ore concentrate. Given the size of the deposits, a yearly output at the above level should be possible for at least 30 years.

36. The reserves south of Priština are estimated to be at least 20 million tons of ore, with a nickel content of 1.5%. It is planned to extract 12,000 tons of ferronickel a year from 1.2 million tons of ore. It was first announced that the operating and extraction plant would become operational in 1974, but this was later postponed until end-1975. There could well be further delay.

37. The implementation of the Kavadarci project will make Yugoslavia Europe's leading exporter of nickel and its biggest producer after the Soviet Union. A long-term supply contract has already been signed with Poland.

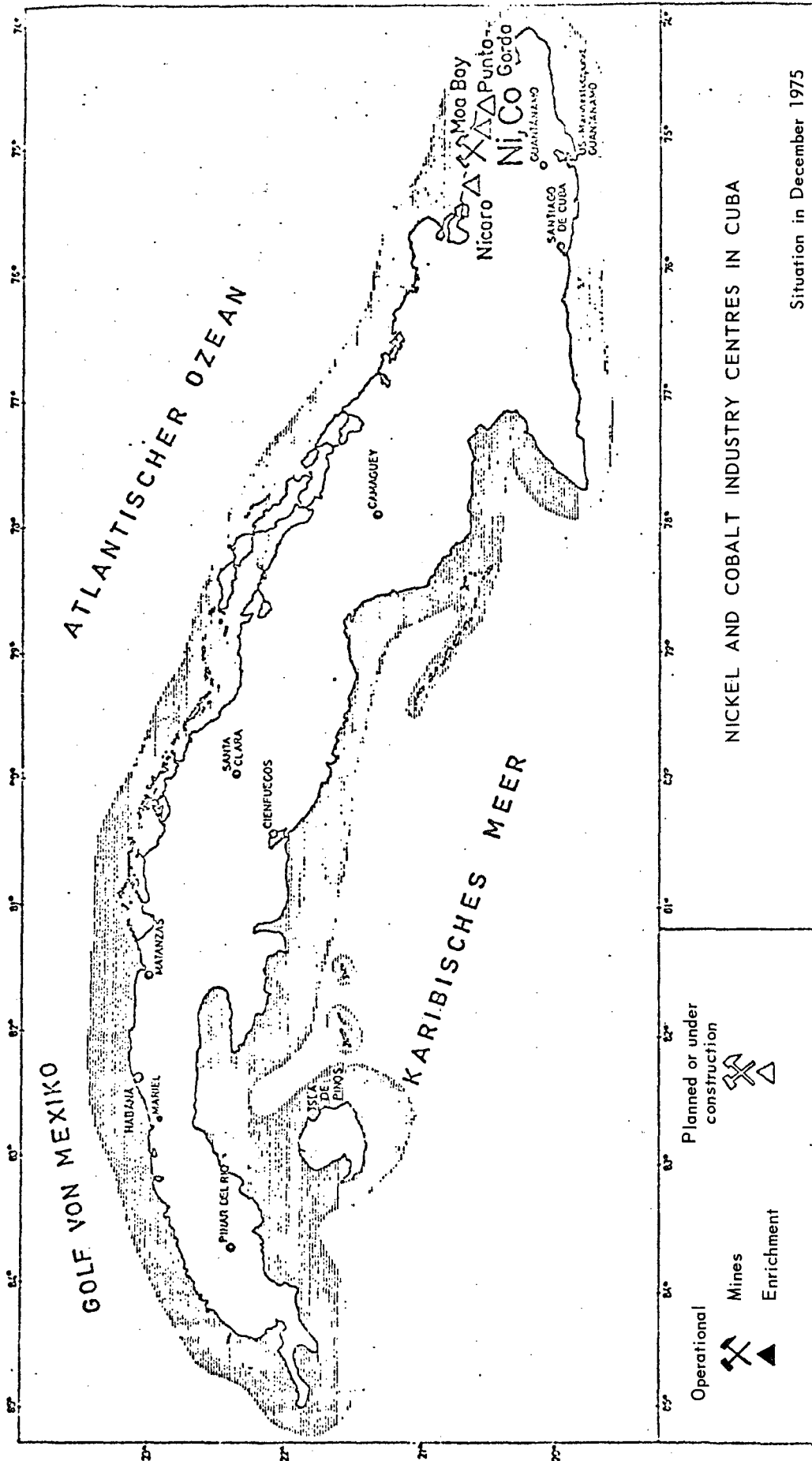
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Centres of the nickel and cobalt industry in the COMECON countries, Yugoslavia and Albania			
Operational		Planned or under construction	
⚡ Mines	⚡ Mines	⚡ Mines	⚡ Mines
▲ Enrichment	▲ Enrichment	△ Enrichment	△ Enrichment
■ Metallurgical processing	■ Metallurgical processing	□ Metallurgical processing	□ Metallurgical processing

SITUATION IN DECEMBER 1975

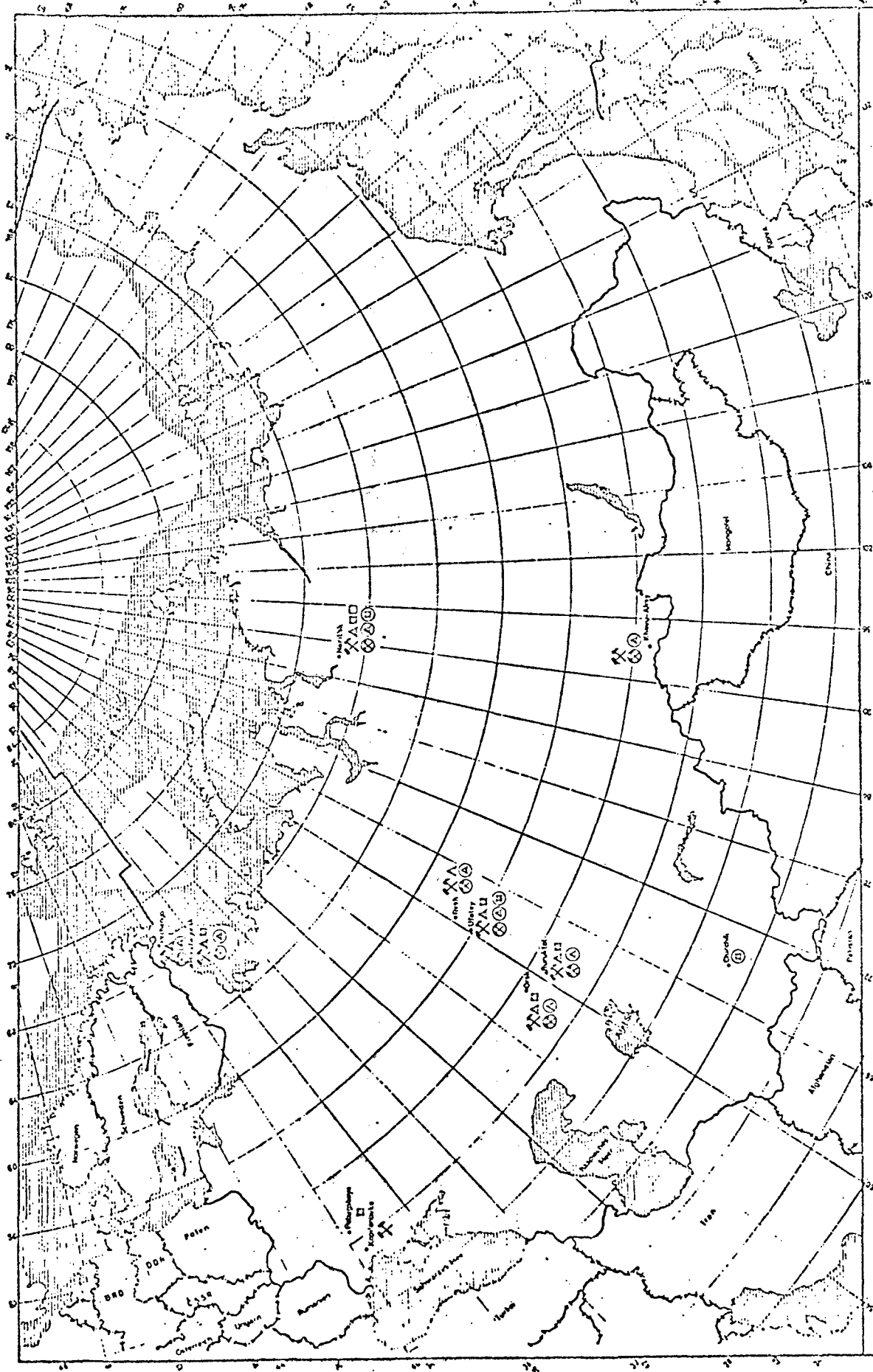


NICKEL AND COBALT INDUSTRY CENTRES IN CUBA

Situation in December 1975

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NICKEL AND COBALT INDUSTRY CENTRES IN THE SOVIET UNION

Situation in December 1975

	NICKEL		COBALT	
	Mines	Enrichment	Foundry	Enrichment
Operational	⊗	▲	■	⊗
Planned or under construction	⊗	▲	□	⊗