

# SOME NOTES ON THE SOVIET ARCTIC DURING THE PAST DECADE

By William Mandel

AT THE start of the Second World War, the Third 5-Year Plan was in operation in the U.S.S.R. In the Soviet Arctic the major aim of this plan was to make the Northern Sea Route a regular shipping route for the four months of the year during which navigation is practicable. Since 1938, partly as a result of the four great Stalin Class icebreakers, laid down during the Second Plan, which now came into operation, partly as a result of other improvements in shipping facilities, such as better ice-forecasting and design of suitable freighters, no ship, as far as is known, has had to winter in the Soviet Arctic.

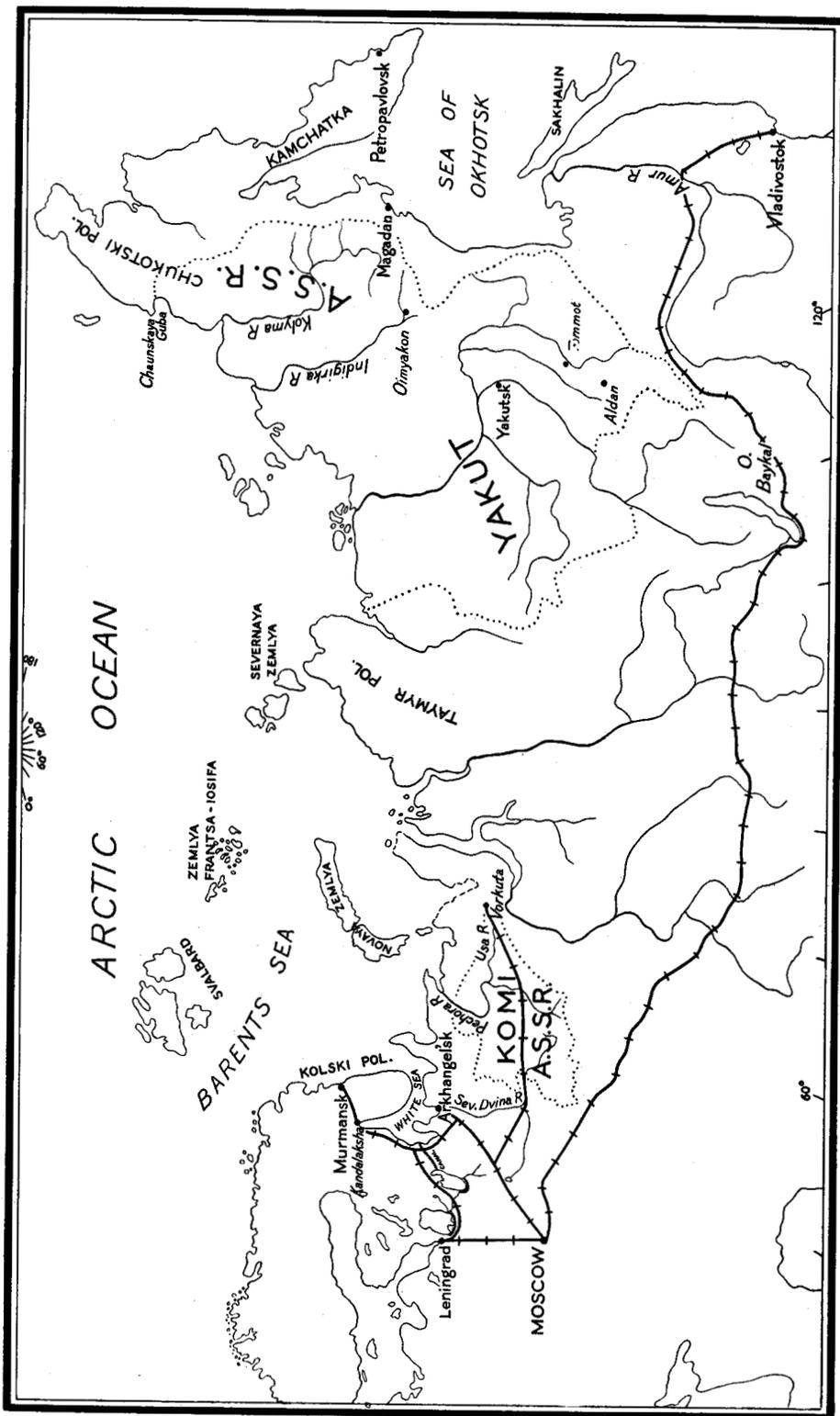
The Second World War, as might be expected, caused both destruction and stimulated effort in the Soviet Arctic.<sup>1</sup> The Kol'ski Poluostrov (Kola Peninsula) was the scene of two large-scale military campaigns involving forces of more than 100,000 men on each side: a German offensive in the summer of 1941, and a Soviet offensive in October 1944. The temperature during these campaigns was hardly arctic: it was reported never to have dropped below 19°F. during the Soviet offensive, and to have risen as high as 49°F. But the terrain of the Kol'ski Poluostrov battles was typically arctic and the fighting occurred at the difficult period between the thaw and the freeze-up.<sup>2</sup> In fact much lower temperatures were experienced in the winter campaigns around Leningrad during the Soviet-Finnish fighting of 1939-40, around Moscow and Leningrad in 1941-2, and around Stalingrad in 1942-3.

In spite of heavy damage to the Murmansk railway by German bombing it was never put out of action. Murmansk, itself, suffered greater damage from air attack than any other city in the Soviet Union except Stalingrad. But under the energetic command of Ivan Papanin, head of the Northern Sea Route Administration, facilities for receiving Allied supplies at this port were continuously expanded. The freight-handling capacity of Arkhangel'sk<sup>3</sup> was also increased and, nearby, the new port of Molotovsk was greatly enlarged. The Murmansk and the Arkhangel'sk railroads had been built under the last Tsar, but double

<sup>1</sup>Chernenko, M., and T. Selyavina, editors, 'Polyarniki v Otechestvennoi Voine', Glavsevmorput', Moscow, 1945, p. 258.

<sup>2</sup>Sidorov, V. I., 'Razgrom Nemtsev na Severe', OGIZ, Moscow, 1945; K. Simonov, 'On the Petsamo Road', Foreign Languages Publishing House, Moscow, 1942; I. S. Isakov, 'Voenno-Morskoi Flot SSR v Otechestvennoi Voine', OGIZ, Moscow, 1944; *Information Bulletin*, Embassy of the U.S.S.R., Washington, 1944, Oct. 31, Nov. 16, 18, 21, Dec. 9; *Pravda*, 1944, Oct. 16, 25-29, Nov. 2.

<sup>3</sup>*White Sea Pilot*, British Admiralty, London, 1946; *Christian Science Monitor*, 19 Nov. 1941; *New York Times*, 3 Dec. 1941.



tracks had been added by the present regime and the Murmansk-Kandalaksha portion of the line electrified. A new line connecting the two cities, which had been built along the south shore of the White Sea just prior to the war, saved Murmansk from isolation when the Finns cut the railroad north of Leningrad, and, with German help, destroyed the locks and dams of the Baltic-White Sea Canal.

The wartime construction of the 700-mile railway to the Vorkuta coalfield area was of great importance in supplying the Northern Sea Route.<sup>4</sup> It also resulted in the building of new settlements, railway hamlets, and river ports. The building of the railroad made it possible for 10 to 12 million tons of coal to be mined during the four war years of 1941 to 1945.<sup>5</sup> Before the war, coal from these deposits had had to be shipped 900 miles down the Usa and Pechora rivers and then by sea to Arkhangel'sk. Together with local coal from smaller workings, such as Sangar-khaya<sup>6</sup> near Yakutsk on the Lena, which produced 23,000 tons in 1936, almost sufficient coal was probably made available for the vessels of the Northern Sea Route when the Svalbard source of supply was cut off in 1941.

German submarines were active in arctic waters as far east as Novaya Zemlya, and a few of them even beyond this island. They attacked both vessels coming across the North Atlantic and those plying east from Arkhangel'sk into high arctic waters. However, with the aid of three Lend-Lease icebreakers and numerous Liberty ships to supplement Papanin's fleet, cargo turnover on the Northern Sea Route proper increased 80 per cent from 1940 to 1945 (170 per cent if measured in ton-miles as the hauls were, on the average, much longer).<sup>7</sup> This was accomplished despite the transfer of most of the experienced high-latitude ice-reconnaissance pilots to the Soviet air transport and long-range bombing commands.

New scientific institutions were started even during the war, for example, the Northern Geographical Society,<sup>8</sup> set up at Murmansk in 1944, which undertook as its first problem the study of the wealth of the northern forests. Exploration was of considerable importance. Mapping of unsurveyed areas continued. Icebergs were sighted on two flights by D. B. Karelin<sup>9</sup> in the Polar Basin, where none were believed to exist, and their drift followed. In 1943 bergs were seen to the north of Zemlya Frantsa-Iosifa and in two places, 83°20N. and 85°40N., north of Severnaya

<sup>4</sup>*Information Bulletin*, 23 Dec. 1943.

<sup>5</sup>*Soviet News*, 12 Sept. 1946, 13 Nov. 1946, 29 May 1947; *Information Bulletin*, 19 Sept. 1944.

<sup>6</sup>Ivina, M., "Sangar-khaya", in *Sovetskaya Arktika*, 6 (1940), pp. 70-73.

<sup>7</sup>*Information Bulletin*, 12 Jan. 1946.

<sup>8</sup>*Information Bulletin*, 9 Dec. 1944.

<sup>9</sup>Karelin, D. B., "Icebergs in the Polar Basin", *Izvestiya Vsesoyuznovo Geograficheskovo Obshchestva*, Vol. 77. Pt. 3, 1945.

Zemlya in 1945. It is thought that the bergs on both flights must have originated on the eastern shore of Severnaya Zemlya. The supposed locations of Zemli Sannikova and Andreyeva were explored, and vast stretches of comparatively thin ice were found in the Polar Basin.

*The Fourth 5-Year Plan: 1946-50<sup>10</sup>*

At the present time, development of the Soviet Arctic and sub-Arctic takes place under a number of jurisdictions. The Arctic Ocean, with its islands and coasts, is the domain of the Northern Sea Route Administration (G.U.S.M.P. or Sevmorput'), except for the following regions: the shores of the Barents and White Seas, which are under normal territorial rule; 6 northern raions of the Yakut A.S.S.R., and the north and east coasts of the Sea of Okhotsk, which although arctic in terms of ice conditions, come under Dalstroi, the Far Eastern Development Corporation. The Northern Sea Route Administration owns or rents shipping installations from other government corporations in towns outside its territorial jurisdiction: Murmansk, Arkhangel'sk, Petropavlovsk-na-Kamchatke, and Vladivostok. In addition, it maintains its general headquarters as a department of the national government, in Moscow, and operates training schools at the university and industrial high school level in Leningrad,<sup>11</sup> where the Arctic Institute and Arctic Museum are located. Exploration remains one of its chief concerns, as do oceanography and hydrography.

Some commercial activities within the domain of the Northern Sea Route Administration which it does not control are fishing, sealing, and whaling. Scientific activities of many kinds may be carried out in the Far North by specialized institutions under other jurisdiction, or jointly with the Arctic Institute.

Development of industry on the mainland, apart from coastal areas and those serving exclusively, or primarily, the needs of northern shipping, is out of the hands of the Administration. If of national importance, such industries are the responsibility of the Ministry concerned i.e., Chaunskaya Guba tin is mined by the Ministry of the Non-Ferrous Metals Industry, and Kol'ski Poluostrov phosphates and clays by the Ministry of the Chemical Industry.<sup>12</sup> If of lesser importance, they may be the responsibility of the Autonomous Republics within the Russian Republic or of town governments. Cooperative, as distinct from state-owned, enterprise

<sup>10</sup>The full official text, in English, was published as a supplement to the *Information Bulletin* for June 1946. The 5-Year Plans of individual scientific institutions do not appear in the overall Plan, but information on them is released from time to time in different publications.

<sup>11</sup>Karelin, D. B., and N. Sosonkin, "Taming the Arctic", *Information Bulletin*, 18 June 1947.

<sup>12</sup>Field, W. O., "Kola Peninsula: Gibraltar of the Western Arctic", *Amer. Quart. on the Soviet Union*, July 1938; *Soviet News* 18 Feb. 1946, 9 March 1946.

is widespread in the outlying areas of the Soviet Union and includes native reindeer breeding, fishing, trapping and even gold prospecting. Individual enterprise, in the sense of self-employment with the aid of immediate family, but with wage labour prohibited, is also more common in the Far North than elsewhere, particularly in gold prospecting. The government is the buyer.

The current 5-Year Plan has to be considered within this framework. As a function of the national government, it deals with transport and industrial developments of national concern. In general in the Soviet Arctic the first come under the Northern Sea Route Administration, the second under the respective Ministries.

*The development of transport.* Under the Fourth 5-Year Plan, which was adopted as law on 18 March 1946, transport in the Arctic was to be developed as follows: "better use shall be made of the . . . Siberian and northern rivers . . . The White Sea—Baltic Canal shall be rebuilt . . . the construction of ports in the Far East completed . . . The conversion of the Northern Sea route into a normally operating sea lane shall be completed by 1950". Forward steps scheduled for 1946-50 included the building of 140 new lighthouses and 16 radio beacons and radio stations.<sup>13</sup> Five hundred and forty hydrographic expeditions have been planned, involving 170 voyages by ship, 200 by aircraft, and the remainder presumably on foot along the coast.

The reference to the Northern Sea Route in terms almost identical with those used in the Third Plan, suggests that capital investments had been reduced during the war, and that the increase in turnover did not mean that the waste and inefficiency of the exploration period had been eliminated.

The first of the projects to be completed was the Baltic—White Sea Canal. The reconstruction of the canal was given high priority and it was opened to traffic in 1946. Work had, in fact, started during the previous year.

A major landmark was passed in 1946 when an expedition of the Arctic Institute completed the depth sounding along the Northern Sea Route. Ice conditions in that year were exceptionally severe, and comparable with those of 1937, but the shipping season passed without mishap. Three convoys and fifteen ships travelling unescorted made the round trip between Pacific ports and Arctic ports of the Yakut A.S.S.R. and the Soviet Far East, although the Chukotski coast was so heavily ice-bound that a new course had to be found.<sup>15</sup> The ice-breaker *Mikoyan*, stationed

<sup>13</sup>*Soviet News*, 1 July 1946.

<sup>14</sup>*Soviet News*, 18 Nov. 1946.

<sup>15</sup>*Soviet News*, 4 Dec. 1946.

in this area, covered 4,000 miles in convoy duty during the season, and also broke through with supplies to ice-bound polar stations off the main route.

The Fourth 5-Year Plan does not provide for further rail or road construction in the permafrost zone—neither an extension of the Pechora railway to the sea nor a resumption of construction of the fabled Baykal-Amur northern spur of the Trans-Siberian, though both of these will undoubtedly be built at some future date. Emphasis was laid on water and on air transport. However, by 1946 the Kolyma Road from Magadan, on the north shore of the Sea of Okhotsk, was continued northward by a narrow-gauge railroad into the goldfields.<sup>16</sup> The Kolyma Road and the highway from the Trans-Siberian Railroad north to Tommot in the Aldan goldfields, point to future large-scale traffic.

*Scientific work:* Despite the progress made in exploiting and peopling the Soviet Arctic, exploration is still of the greatest importance. In the summer of 1946, the geologist Leo Berman and two associates set out to learn the cause of unprecedented summer floods on tributaries of the Indigirka rising near Oimyakon,<sup>17</sup> where precipitation is negligible. The party, which travelled on horseback, was unable to find guides, as no Yakut had ever followed the river to its source. After two weeks they discovered a mountain range, 95 miles long and 40 miles wide, with 60 major peaks and numerous glaciers, in an area where no mountains had been expected. The peaks, some of which reach 9,000 feet, are among the highest in the northeastern region of the Soviet mainland. The fearlessness of the mountain goats in the presence of the Berman party indicated that they had never seen human beings before. The range has been named Suntar Khayata. The flooding, which led to the expedition, was attributed to the remarkably warm summer of that year.<sup>18</sup>

The year 1946 also witnessed the first attempt in the Soviet sector of the Arctic to sail from the east to the west keeping north of all islands.<sup>19</sup> Apparently the expedition, which included thirty-five scientists, was not successful, for the writer has seen no further report, and 1946 is known to have been a very severe ice-year. The chief objective of the expedition was to study the continental shelf, since the Russians believe that the principal hydrological processes governing ice conditions in the Northern Sea Route originate on the shelf. It was also planned that a survey would be made of the boundaries of the perennial polar pack.

In 1947 the Academy of Sciences sent six expeditions to the permafrost zone and, in January, established an autonomous branch at Yakutsk,

<sup>16</sup>*Soviet News*, 23 Oct. 1946.

<sup>17</sup>Recently put forward as having the lowest recorded temperature.

<sup>18</sup>*Soviet News*, 25 April 1947.

<sup>19</sup>*Information Bulletin*, 16 Oct. 1946.

under the geologist, Sergei Smirnov.<sup>20</sup> One of these expeditions made an intensive study of soil formation and plant development near Igarka, which the Russians consider to be one of the coming agricultural centres of the Soviet Far North. The Arctic Institute sent out several meteorological expeditions and fourteen expeditions were equipped by the Institute of Ethnography to study the most primitive Soviet peoples; one of these it was planned would spend two to three years among the Chukchi.<sup>21</sup>

Two further expeditions in 1947 explored the interior of Novaya Zemlya,<sup>22</sup> and, travelling by tractors, surveyed the Taymyr Poluostrov, (Taimyr Peninsula) discovering coal deposits in the course of this work.<sup>23</sup>

The publication by the Arctic Institute of an Atlas of the Arctic, containing 300 maps, was planned for 1948.<sup>24</sup> This work should be a major contribution to knowledge of the Arctic. However the absence of reviews in the Soviet general and specialized press would indicate that publication has been delayed.

Since the war stimulus to scientific progress has been given by the award of a 50,000 ruble Kirov Stipend every third year, for works of discovery and development in the Kol'ski Poluostrov and the Soviet Arctic.<sup>25</sup>

*Industrial activities:* A very important development mentioned in the Fourth Plan is the sinking, during the five-year period, of new shafts with an annual capacity of 7,700,000 tons of coal in the Pechora field. These would be in addition to those already in operation; in November 1946, there were twenty, the largest of which produced 500,000 tons annually. By 1950 this construction is planned to treble the 1945 production.<sup>26</sup> New districts and deposits of coking coal are to be surveyed in the Pechora area by 1950, preparatory to the sinking of further mines. The resources of the Pechora field are estimated at from 120,000 to 500,000 million tons geological reserve, or more than those of the Ukrainian Donbas, now the largest producer. Drilling for petroleum, already being extracted in the region, is to be increased.

Arctic resources are becoming an integral part of Soviet industry. This was true before the war of chemicals from the Kol'ski Poluostrov. During the war the Chaunskaya Guba area on the northeastern Siberian coast became the most important tin producer in the U.S.S.R. The

<sup>20</sup>*Soviet News*, 29 May, 1947.

<sup>21</sup>*Soviet News*, 16 May 1947.

<sup>22</sup>*Soviet News*, 26 March 1947.

<sup>23</sup>*Soviet News*, 25 April 1947.

<sup>24</sup>*Soviet News*, 24 July 1946.

<sup>25</sup>*Soviet News*, 30 March 1946.

<sup>26</sup>*Soviet News*, 12 Sept. 1946.

Northwest Metallurgical combine, which is to use the coking coal of Pechora and the low-grade iron ore of the Kol'ski Poluoostrov (as well as scrap from the Moscow district) for the first pig-iron-to-steel plant in the Leningrad area is an important subarctic development.

The Fourth Plan also provides for an increase in lumber-milling along the Severnaya Dvina and Pechora rivers. New narrow-gauge timber railways were under construction in the Komi A.S.S.R. of the European North from 1946 onwards.

The arctic fisheries have provided an important part of the Soviet food supply since the institution of the Five-Year Plans. The catch in the western Arctic had increased from 13,000 tons in 1913 to 277,900 in 1937. In the latter year the Murmansk trawler fleet had grown to 80 vessels; canneries had been built at Murmansk and Kandalaksha, and refrigerator cars were operated on daily schedule to carry fresh fish to the inland cities. The Fourth Plan provides that "fishing shall be widely extended in the Northern and Far Eastern waters, especially off South Sakhalin, the Kurile Islands and Kamchatka". Far Eastern waters, most of them northerly, had provided 30 per cent of the entire Soviet catch in 1940. Fish, it is to be remembered, is the staple source of protein in the Russian diet.

Judging by the record to date and by the objectives of the Fourth Plan, it may be surmised that by 1950 many of the problems of industrial expansion and of providing cheap transport in the Soviet Arctic will have been solved. Vast fields for expansion will however remain. Until a diet acceptable to Europeans can be produced locally the density of population in the Soviet Arctic will remain infinitesimal by comparison with that of the non-Arctic regions.