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MERCHANT SHIPPING OPERATIONS ON THE NORTHERN SEA ROUTE 1954

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MERCHANT SHIPPING OPERATIONS ON THE NORTHERN SEA ROUTE* 1954

Summary

A minimum of 275 vessels, including 171 dry cargo carriers and barges,** the highest number ever noted, operated on the Northern Sea Route during the 1954 navigation season, which lasted approximately from mid-June through October. This number may be compared with the previous high of 228 vessels, including 125 carriers, which operated on the Northern Sea Route in 1953. Approximately 2 million metric tons*** of cargo per year are transported on the Northern Sea Route.

The management of shipping on the Northern Sea Route is a complicated and time-consuming process, but the approach of the USSR to the fundamental problems of the organization of an Arctic shipping lane seems efficient, and it is developing an increasingly well-run organization for the exploitation of the Northern Sea Route.

The number of vessels operating on the Northern Sea Route has increased by approximately 80 percent since 1951. This increase is indicative of recent Soviet attempts to expand the level of economic and military activity in the Arctic.

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* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 November 1955.

† See Table 1, p. 13, below, for identification of the types of the remaining 104 vessels.

** Tonnages are given in metric tons throughout this report, unless otherwise indicated.

The use of non-Soviet Bloc ships in the Western Sector of the Northern Sea Route continues to increase. In 1954, 33 non-Soviet Bloc vessels were operated over this route compared with 17 in 1950, 10 in 1951, 23 in 1952, and 28 in 1953.

Expanded use of the Northern Sea Route will increase the tonnage of supplies which can be brought to the Soviet Arctic area, thus accelerating its military and economic capability.

As in past years, only a very small number of cargo-carrying vessels traveled the entire distance of the Northern Sea Route. This indicates once again that the primary economic significance of the Northern Sea Route is its utilization as the major supply lane to installations along the Arctic coast and transshipment bases for the hinterland, and as the route by which a large proportion of the products of the Arctic is moved to other areas of the USSR. The Northern Sea Route itself has almost no economic significance as a through shipping lane connecting the Atlantic and Pacific Oceans.

In the event that access to other shipping routes were denied to the USSR, it is conceivable that the Northern Sea Route would be exploited to a greater degree than at present to provide an ocean-to-ocean route. The short season during which the route is open, however, the extreme difficulties of navigation in the Arctic Ocean, and the lack of adequate port facilities, among other deterrents to through navigation, preclude any significant expansion of the capabilities of the route over a short period of time. It would take many years to develop vessels and sailing techniques that would enable Northern Sea Route convoys to proceed with any degree of ease.

A comprehensive meteorological and hydrographic program in support of shipping is conducted during each navigation season. This program includes the utilization of hydrographic ships, ice reconnaissance flights, and weather reconnaissance flights to the North Pole. An efficient, accurate, and highly organized system of weather and ice reporting and forecasting furnishes adequate support to shipping operations on the Northern Sea Route.

The entire trend of Soviet Arctic shipping -- an increasing number of vessels operating on the Northern Sea Route with a concurrent increase in the amount of cargo carried, an expanded scientific program for the support of shipping, and only a few complete crossings of the Northern Sea Route -- is indicative of a dynamic, expanding Arctic economy.

I. Introduction.

The Soviet Arctic is physically forbidding and includes some of the coldest and most difficult terrain in the world. For the most part, the region is not heavily forested and consists primarily of mountains and tundra. A major characteristic of the area is permafrost, a thick mass of permanently frozen ground which underlies most of the Soviet Arctic and sub-Arctic. Permafrost complicates mining and agricultural operations and makes construction of all types -- airfields, roads, railroads, and even ordinary buildings -- difficult because of the thawing of the surface, which is the active layer, and the resultant settling of the ground each summer. Permafrost greatly reduces the absorptive capacity of the soil. Spring thaws result in extensive flooding throughout the Arctic, and wide expanses of tundra turn into impenetrable swamps during the summer.

Except in central Yakutskaya ASSR, the native population always has been sparse. Labor, both compulsory and voluntary, for the development of the region must be imported from other parts of the USSR. The region is poor in all of the resources which provide food, shelter, and clothing for humans. Natural foods consist primarily of reindeer, wild fowl, fish, and berries and are insufficient to support the present population. Furs and skins are the only local materials suitable for clothing, and the supply of even these materials is wholly inadequate. Local construction materials generally are too sparse and too poor in quality to meet the needs of the region in terms of modern economic development. The same is true of local fuels.

Thus the accelerated economic development which has been under way in recent years necessitates a large and steady flow of supplies and manpower into the area from other parts of the USSR.

Water and air are the primary means of access to the Soviet Arctic and sub-Arctic. The major water supply lines are the Northern Sea Route (between Nar'yan-Mar and the Bering Strait*); the Pacific Ocean shipping lane (north from Vladivostok to Provideniya); and the Ob', Yenisey, and Lena Rivers, whose upper reaches connect with the Trans-Siberian Railroad.** Access to the interior regions from the Northern Sea Route is by means of several major rivers -- the Pechora, Khatanga, Olenek, Yana, Indigirka, Kolyma, and, on the eastern coast of the Chukotski Peninsula (Chukotskiy Poluostrov), the Anadyr'. The only notable highways in the area are the Magadan-Kolyma highway, which links the Vladivostok-Provideniya ocean supply route with the interior of the area controlled by the Chief Directorate of Far Northern Construction (Dal'stroy), and a highway from Never to Tommot,*** which links the Trans-Siberian Railroad to the Aldan River, a major tributary of the Lena. 1/****

These main arteries into the Soviet Arctic are all dependent upon the length of the Arctic navigation season. In the northern regions, sea passages are open for about 3 months of the year. Navigation on the rivers may be possible for as much as 5 to 6 months. Local distribution from central points relies upon small rivers and unimproved trails. The trails frequently are impassable during the

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* This definition of the Northern Sea Route was adopted to provide a uniform basis for comparison with on the same subject dating back to the 1947 navigation season, as well as to exclude peripheral Anadyr' Bay and White Sea - Kola Peninsula shipping. The inclusion of shipping in the latter area would result only in a misleadingly inflated estimate of the number of vessels operating on the Northern Sea Route.

** See the map, Merchant Shipping Operations on the Northern Sea Route, 1954, inside back cover.

*** An unimproved extension of this highway goes through and beyond Yakutsk into the Dal'stroy area.

**** For serially numbered source references, see Appendix D.

summer, when large tracts of permafrost turn to swamp. Such trails, notwithstanding their limitations, are used even to supply major airfields. The airfield at Tanyurer, for example, is served by transshipment from Anadyr' up the Anadyr' and Tanyurer Rivers by barge during the navigation season and by sled and tractor over trails during the winter. 2/

Air transportation, in the past, has had a rather limited role in the total Arctic supply picture. It has been used in special situations requiring the quick delivery of equipment or supplies. On occasion, it has been used to supplement supplies early in the spring before the water routes were open, or to set up an operation in areas in which regular supply routes have not yet been established. In most cases, however, such measures have been temporary expedients. Even a considerable expansion of the present airfield construction program in the Soviet Arctic would not permit air transportation to replace regular water routes as the principal means of supply.

The management of shipping on the Northern Sea Route is the basic activity of the Chief Directorate of the Northern Sea Route (GUSMP), in the Ministry of the Maritime Fleet, around which most of GUSMP's other operations are centered. The Fourth Five Year Plan (1946-50) provided that the work of transforming the Northern Sea Route into a "normal navigational lane" should be completed by 1950. This aim seems to have been attained.

Most of the vessels which operate on the Northern Sea Route do not traverse the full length of the Northern Sea Route, but operate within either the Eastern or the Western Sectors.* The Western Sector is served by the Murmansk Arctic Steamship Agency (MAP) of the Directorate of Arctic Fleets and Ports (UAFIP), GUSMP. This steamship agency distributes within the western Arctic the supplies which are funneled through the Arkhangel'sk Section of the Arctic Supply Directorate (Arktiksnab), GUSMP. Vessels operating under

* In this report the term "Western Sector" refers to that part of the Northern Sea Route between Nar'yan-Mar and Mys Chelyuskin. The term "Eastern Sector" refers to that part of the Northern Sea Route between Mys Chelyuskin and Uelen.

MAP charter also deliver some cargo as far east as Khatanga and Tiksi in the Eastern Sector. But, on the whole, the quantity of supplies coming into the eastern Arctic region via Arkhangel'sk and other ports in northern European Russia is comparatively small.

The eastern Arctic is served primarily by vessels coming from Primorskiy Kray which have operated under charter to the Vladivostok Arctic Steamship Agency (VAP), UAFIP.* Supplies carried over this route are funneled through the Vladivostok office of Arktiksnab, and, for Dal'stroy, through the Nakhodka and Vanino offices of the Kolyma Supply Organization, Dal'stroy.

Two other inland supply offices channel supplies down two important river supply routes -- Krasnoyarsk for the Yenisey and Osetrovo for the Lena. 4/ The Yenisey River route is of rather secondary importance for the Northern Sea Route, but it is used to a much greater extent by other organizations operating in the Yenisey estuary region -- that is, the Noril'sk Combine, the lumber industry, and the enterprises once subordinate to the former Chief Directorate of Yenisey Construction (Yeniseystroy).

The Lena River, because of its central location, is the major inland supply route to the eastern Arctic. Shipping on the Lena is in the charge of the Lena River Steamship Agency (LRP) of the Ministry of the River Fleet, with headquarters in Yakutsk. The Osetrovo supply office was transferred from Arktiksnab to LRP in November 1954. The Lena River is one of the more important Dal'stroy supply routes, and the port of Tiksi, at the mouth of the Lena, is a major transshipment base. The Lena Gold Fleet also operates on the Lena River.

Dal'stroy controls shipping on the Yana, Indigirka, and Kolyma Rivers, which are the local routes leading to the interior of the Dal'stroy area from the Northern Sea Route. The Khatanga River office of the UAFIP is concerned with local transportation in the Khatanga basin. GUSMP also conducts limited shipping operations on some of the other small rivers in the Soviet Arctic.

Through this transportation network, delivery of considerable quantities of almost every type of supply, from medical goods to

* Since about February 1955, renamed the Eastern Arctic Steamship Agency. 3/

heavy construction equipment, is effected to every center of activity in the Soviet Arctic and sub-Arctic.

A transport service or activity that is conducted under the difficult, complex, and costly conditions inherent in Northern Sea Route operations operates only where great need exists for its services. The past 10 years have seen a considerable expansion in basic scientific research in the central Polar Basin, in the development of new rail lines in northwestern Siberia, and in the several GUSMP activities. The strong desire to develop the area springs not only from economic but also from strategic considerations based on the fact that its geographic location makes the area a potential jumping-off point for military operations against North America. The development of the area is therefore carried on by both civilian and military agencies, 5/ both of which, obviously, give attention to the economic as well as the strategic aspects of the undertaking. Raw materials needed by Soviet industry make up the bulk of the exports from the Arctic. Imports consist largely of equipment, labor, and supplies of food and fuel needed by the industries producing raw materials and by military and scientific operations in the area. Because of its participation in the process of moving these imports and exports, the Northern Sea Route "plays an important role in the economic life of the country. It is difficult to overestimate its transportation importance. The use of the Northern Sea Route will make it possible to reduce transportation costs and sharply reduce the time it takes to deliver cargoes to the outlying points in the Arctic and Far East." 6/ More important still, expanded use of the Northern Sea Route will increase the tonnage of supplies which can be brought to the Soviet Arctic area, thus accelerating its military and economic capability.

II Administration.

The management of shipping on the Northern Sea Route is a complicated and time-consuming process. Preseason planning begins as early as December, with a long-term forecast of ice conditions to be expected during the coming navigation season. A revised version of the December forecast is issued in February 7/ The Council of Ministers, USSR, then issues a decree in late February or early

March which usually contains the plan for shipments to the Arctic during the forthcoming navigation season. 8/ Before formalization of the decree, there is presumably a considerable amount of discussion relative to contracts and planning between GUSMP officials in Moscow and those in the field, as well as with customers of GUSMP. 9/ In some instances the planning by GUSMP's customers starts a full year in advance of the opening of the navigation season.

In the early spring the preseason concentration of freight begins at certain southern Far Eastern and probably northern European ports from which shipments to the Arctic are made. In 1953 this concentration began in Vladivostok on 17 May and continued until the opening of the navigation season. 11/

A further concentration of cargo takes place at Provideniya. Freight is shipped to that far northern port in the interval between the end of navigation on the Northern Sea Route in mid-October and the closing of the port of Provideniya in early December 1953. 13/

Vessels designated for service on the Northern Sea Route receive "top-priority" servicing during late winter and spring, so that they can begin their voyages on schedule. Repair work is pushed to completion before the opening of the navigation season.

... 17/ This special priority and processing accorded to vessels scheduled for service upon the Northern Sea Route indicates the importance attached by the USSR to the prompt and orderly management of Arctic shipping operations.

navigat

Once the navigation season opens, active direction of shipping operations is transferred to the North. The present system of shipping control was introduced first during the 1935 navigation season. In place of over-all control by one man -- the Chief of GUSMP or his deputy -- the area of operations is divided into an Eastern Sector and a Western Sector, Mys Chelyuskin being the dividing point. Each sector has a Director of Operations who originally was stationed aboard the duty icebreaker in his sector, but now one director is based at Pevek in the Eastern Sector and the other at Dikson in the Western Sector. When necessary the directors go out on icebreakers to supervise operations. This system

* Believed to be subordinate to the Chief Directorate for Health of the Maritime and River Fleets, Ministry of Health.

represents an improvement over that of control by one man, who did not possess as detailed a picture of conditions as can be achieved by having regional directors of operations. 22/

Mikhail Yakovlevich Fomin, former Chief of the Directorate of the Maritime and River Fleets, GUSMP, was in charge of shipping operations on the Eastern Sector of the Northern Sea Route during the 1951, 1952, and 1953 navigation seasons. 23/ Vasily Andreyevich Fedoseyev, Chief of the VAP, apparently held this position in 1954. 24/ Fomin, who will occupy the post for 1955, 25/ is Chief of the Provideniya Regional Administration. The Director of Operations for the Eastern Sector usually begins operations at Pevek about mid-June and completes his work there late in October. 26/ Assisting the Director of Operations were Mikhail Vladimirovich Gotskiy, I. V. Gurskiy, and Viktor P. Lebedev. The exact duties of these 3 individuals are undetermined, although it is known that Gotskiy has been at Pevek for the last 5 navigation seasons and is concerned with ice reconnaissance in support of shipping. Gurskiy is a former First Deputy Chief and Acting Chief of the VAP, and Lebedev was at one time on the staff of the VAP. 27/

Navigation in the Western Sector is controlled from Dikson. The Director of Operations, who was formerly the Chief of the Archangel'sk Arctic Steamship Agency (AAP), is the chief of MAP. 28/ (MAP is virtually the same organization as AAP, the change in title reflecting little more than the change in location of headquarters.) N. A. Yermeyev was the director in 1954 29/ and also held the position in 1949. It was reported that Strekalovskiy would occupy the post in 1955. 30/ His past duties are not known, although in August 1954 Strekalovskiy occupied the post of Director of the Tulubevo Repair Shops in the Northern River Steamship Line. During the 1953 navigation season the assistants to the Director of Operations for the Western Sector were Vladimir Viktorovich Varley, Deputy Chief of the MAP, and Boris Ivanovich Kulagin, Chief of the Dikson Port. 31/ As in the case of the Eastern Sector, their exact duties are unknown.

Northern Sea Route operations have reached the point where standard operating procedures relative to the movements of vessels are in effect. The chiefs of steamship agencies and of marine operations

are required to provide promptly the schedules of approach of vessels to ports and to advise ship captains of the specific dates of access to ports. 32/ Ship captains are required to report their estimated time of arrival and the type and disposition of their cargo to ports, and failure to do so is cause for reprimand. 33/ Socialist competition is organized between shore workers and the crews of vessels and between ports and their supplying organizations. 34/ Plans apparently undergo constant revision throughout the navigation season.

After the close of the navigation season, most of the vessels of GUSMP, many of which undergo severe strains during the summer's operations, enter open ports outside the area for inspection and are repaired if necessary. 36/ Repairs, primarily to engines and propellors, also are carried out at Provideniya throughout the navigation season. During 1954 a minimum of 20 vessels was repaired at that far Northern port. 37/ Most vessels are employed on other routes during the Northern Sea Route off-season, 38/ although some of the smaller vessels winter on the Northern Sea Route. 39/

The over-all approach of the USSR to the fundamental problems of the administration of an Arctic shipping lane seems to be reasonably successful. In 1935, after a brief period of trial and error, the basic organization which is still in use was adopted. The fact that it has worked for 20 years is a testimonial to the general feasibility of the Soviet concept, although many errors have been made. Vessels have not always met their schedules, cargo has not always been ready, and an occasional disaster has occurred. There does not seem to have been a really serious underfulfillment of the plan since 1937, however, in spite of the fact that the plan has become progressively more ambitious. From this, as well as from the careful planning and administration which go into a navigation season, it might be inferred that the USSR has a well-organized and smoothly operating plan for the development of the Northern Sea Route.

III. Shipping Operations, 1954.*

A minimum of 275 vessels of all flags has been identified as probably in operation on the Northern Sea Route during the 1954 navigation season. This number includes only those ocean-going vessels which have been noted between Nar'yan-Mar in the west and Uelen in the east. Siberian river vessels which called at Northern Sea Route ports at the mouths of the several Siberian rivers have been excluded from this count, although some of them may have been engaged in coastwise traffic. Table 1 and Table 2** give a comparison of the 1954 navigation season with the seasons of 1947, 1948, 1950, 1951, 1952, and 1953, by type of vessel and by area of operation.

The number of vessels using the Northern Sea Route in 1954 has increased by almost 80 percent over the number using the Northern Sea Route in 1951. The increase in traffic, which was facilitated by an evidently efficient organization within GUSMP, points to an expansion of military and economic activity in the Soviet Arctic. The greater number of hydrographic vessels included in this traffic indicates an expanded program for study of the Arctic in support of greater exploitation of the Northern Sea Route and suggests that plans for future increases in traffic are being evolved.***

The determination of the approximate volume of cargo carried on the Northern Sea Route has always been difficult. Certain figures indicating total cargo turnover are available for the 1930's but, for several reasons, these are not necessarily trustworthy. Since 1940 there have been only 2 references to the amount of freight moved, and both of them have been expressed in terms of a percentage of 1940, when 491,400 tons of cargo were transported. 40/

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* See Figure 2, following p. 12.

** Tables 1 and 2 follow on pp. 13 and 15, respectively.

*** The establishment of three drifting stations -- North Pole 3, North Pole 4, and North Pole 5 -- in the central Polar Basin during the past 14 months is further evidence of this increased program for the study of the Arctic. See p. 27, below.

Table 1

Reported Types and Number of Vessels
Operating on the Northern Sea Route
1947-48 and 1950-54 Navigation Seasons

Vessels

Type of Vessel	1947 a/*	1948 b/	1950 c/	1951 d/	1952 e/	1953 f/	1954 f/
Cargo							
Freighters	57	38	107	91	90	93	117
Gas-driven			1				
Icebreaker-cargo	4	2	3	3	4	4	4
Lighters (barges)			5	12	26	27	47
River vessels					4		
Unidentified	3	1				1	3
Noncargo							
Cutters					1		1
Dredges				1	3	4	1
Hydrographic	14	10	12	12	15	20	17
Icebreakers	11	10	12	12	7	9	9
Icebreaker-tug				3	5	4	
Luggers						2	3
Naval			3		16	15	23
Patrol					1		
Railroad ferry							2
Refrigerator-trawlers						9	
Schooners				1	2	2	8
Sealers			4		1	6	

* Footnotes for Table 1 follow on p. 14.

Table 1

Reported Types and Number of Vessels
Operating on the Northern Sea Route
1947-48 and 1950-54 Navigation Seasons
(Continued)

Vessels

Type of Vessel	1947 [a]	1948 [b]	1950 [c]	1951 [d]	1952 [e]	1953 [f]	1954 [f]
Noncargo (Continued)							
Tankers	2	3	4	4	5	6	3
Training					1	1	1
Trawlers				1	5		
Tugs	5		13	13	22	31	36
Whalers		1					
Total	96	65	160	153	208	228	275

a. 41/
b. 42/
c. 43/
d. 44/
e. 45/
f.

Table 2

Reported Number of Vessels
Operating on the Northern Sea Route
by Area of Operation
1947-48 and 1950-54 Navigation Seasons

Vessels

Area of Operation	1947 a/	1948 b/	1950 c/	1951 d/	1952 e/	1953 f/	1954 f/
Eastern Sector	30	23	60	38	54	44	62
Western Sector	60	30	89	105	124	133	167
Complete crossing (east to west)	4	3	8	1	2	1	4
Complete crossing (west to east)	2	9	2	8	28	51	35
Double crossing (east to west and west to east)			1				
Double crossing (west to east and east to west)							2
Three-fourths crossing (west to east) and return (east to west)				1			5
Total	96	65	160	153	208 g/	229 h/	275

a. 47/ b. 48/ c. 49/ d. 50/ e. 51/
f

g. Revised estimate.

h. The tug Udarnyy made 2 voyages on the Western Sector and then crossed the Northern Sea Route from west to east -- therefore, in this table, the Udarnyy appears in 2 categories, the Western Sector and complete crossing (west to east). This accounts for the discrepancy between Table 1 and this table for the year 1953.

A Pravda reference indicates that there was a freight turnover of approximately 880,000 tons in 1945. 52/ The Minister of the River Fleet stated in 1954 that "water transport in the Far East Basin and along the Northern Sea Route increased more than four times." 53/

A recent study stated that cargo vessels operating on the Northern Sea Route in 1954 carried a minimum of 812,618 tons. 54/ This figure does not include 72 additional vessels* with an estimated 376,000 gross tons. The cargo tonnage carried by these 72 vessels, assuming optimum operating conditions, is estimated to have been 1 - 1/3 times the gross tonnage, or 500,000 cargo tons.** The load carried by coastal shipping and by voyages out of the area is estimated to have been 120,000 cargo tons.*** The estimate of cargo tons in 1954 is therefore approximately 1.5 million (812,618 plus 500,000 plus 120,000 equals 1,432,618 cargo tons).

an estimate of total cargo tonnage carried on the Northern Sea Route in 1954, based on all sources, would be 2 million cargo tons. This estimate appears rather conservative. It differs relatively little from the estimate of 1,975,000 cargo tons and fits into the pattern of increasing vessel traffic since 1951.

A. Complete Crossing.*****

A minimum of 46 vessels -- 18 cargo, 2 icebreakers, 2 schooners, 1 hydrographic, and 23 naval vessels (5 submarines,

* Included in Table 1 and Table 2. Each of these 72 vessels completed 1 or more trips.

** The formula, as used in an earlier report, 55/ is that cargo tonnage equals 1 - 1/3 times the gross tonnage for each ship. The estimate is a maximum figure. The ships may not always have operated at the optimum level.

*** This figure is based on the assumption that the additional cargoes averaged at least one-half load per vessel, operating in the Eastern Sector. The Western Sector [illegible] this figure

**** See Figure 2, following p. 12, above.

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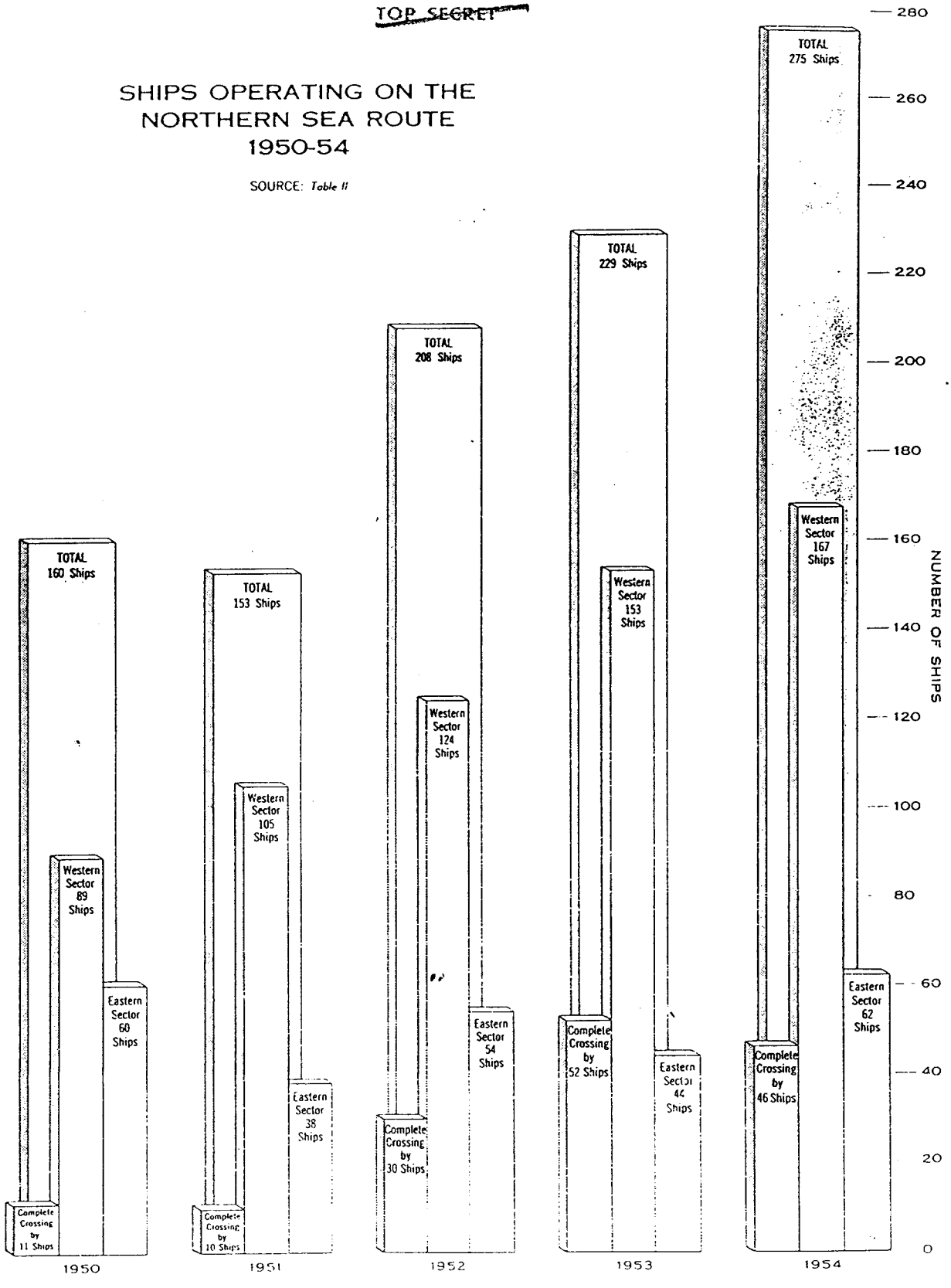
SHIPS OPERATING ON THE NORTHERN SEA ROUTE 1950-54

SOURCE: *Table II*



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7 destroyer-escort type ships, and 11 minesweepers 56/) -- is believed to have crossed the Northern Sea Route during the 1954 navigation season. This represents the second highest number in the history of the Northern Sea Route and may be compared with a total of 51 vessels -- 5 cargo, 2 tankers, 12 tugs, 6 lighters, 9 refrigerator-trawlers, 1 schooner, 1 ice-breaker, and 15 minesweepers -- which crossed in 1953.

Of particular interest is the number of vessels which made round trips on the Northern Sea Route, all from west to east and return, during the 1954 navigation season. These included 2 trips from the west to Provideniya, 3 to Pevek, 1 to Kuogostaakh, and 1 to Tiksi, and return to the west. Never before have so many vessels made double transits of the Northern Sea Route. This fact is a further indication of the efficiency with which Northern Sea Route shipping operations are being conducted.

During the 1954 navigation season a total of 18 cargo vessels, approximately double the usual number, made either partial or complete crossings of the Northern Sea Route. Although this may indicate that somewhat greater attention than before is being paid to the Northern Sea Route as a through shipping lane, it does not obviate the fact that these 18 vessels represent only a small portion of the total number of vessels in service on the Northern Sea Route during 1954. Furthermore, although the type, amount, and destination of most of the cargo carried by these 18 vessels are unknown, in at least 5 instances, cargo was not transported completely across the Northern Sea Route but was unloaded at intermediate ports. It is possible that some of these vessels proceeded on to Provideniya and Vladivostok in order to derive greater benefit from the Northern Sea Route. Thus it is evident that the primary economic significance of the Northern Sea Route is its utilization as the major supply lane to the various installations along the Arctic coast and the transshipment points for the hinterland and as the route by which a large proportion of the products of the Arctic are exported. The Northern Sea Route itself has relatively minor economic significance as an ocean-to-ocean shipping lane.

B. Eastern Sector.

The Eastern Sector of the Northern Sea Route extends from Mys Chelyuskin, the northernmost point on the Eurasian land mass, to the port of Provideniya, on the southern side of Bering Strait. A minimum of 62 vessels was noted operating in the Eastern Sector during the 1954 navigation season.* No non-Soviet Bloc vessels operated in this sector.

The major economic organization operating in the eastern Arctic is Dal'stroy, whose primary function is the exploitation of the mineral resources of northeast Siberia (the area east of 132° and north of 59°, excluding the Kamchatka Peninsula). The headquarters of Dal'stroy are at Magadan.

Subordinate to Dal'stroy are seven regional mining industry directorates, each of which is responsible for the mines in its area. Headquarters of these directorates are located at Yagodnyy, Susman, Ust'-Omchuk, Ust'-Nera, Omsukchan, Pevek, and Ege-Khaya. Gold, tin, tungsten, and cobalt are the principal ores mined by these regional directorates. There are facilities for ore concentration at many of the major mining enterprises, especially those designated as combines.

In addition to these regional mining organizations there is the First Directorate, which is administered by Dal'stroy but is engaged in the production of uranium and possibly other radioactive ores for the First Chief Directorate and the Second Chief Directorate attached to the Council of Ministers, the organizations responsible for the Soviet atomic energy program. This directorate, organized in 1949, operates throughout the Dal'stroy area. It has mining combines at Butygychag and Pevek.

* This may be compared with a minimum of 44 vessels which operated in the Eastern Sector during the 1953 navigation season. Only those vessels which operated to or beyond Uelen, on the north side of Bering Strait, have been counted. For an explanation of this geographical limitation, see p. 12, above.

A recent estimate states that Dal'stroy requires a minimum of approximately 1 million tons of imports per year. 57/ There are three surface transportation lanes which carry these supplies into Dal'stroy, although the proportion carried on each lane is unknown. The most important of these is the ocean shipping lane north from Nakhodka or Vanino to Nagayevo, the port for Magadan. Over this route move the majority of Dal'stroy's supplies. The secondary supply lane to Dal'stroy is the Northern Sea Route, which connects with rivers leading from the Arctic coast into the hinterland. The tertiary lane, the Lena River route, has two variants -- the first follows the Lena and Aldan Rivers and then travels overland to the Yana area (or less frequently to the western Dal'stroy area), and the second follows the Lena River to Tiksi, where it joins the Northern Sea Route. Cargoes for Dal'stroy brought in by way of the Northern Sea Route are deposited at Pevek and at ports at the mouths of the Kolyma, Indigirka, and Yana Rivers. From these ports the cargoes are transshipped to the hinterland.

Pevek, the port for the Chaun Directorate of the First Directorate and the Chaun-Chukotka Mining Industry Directorate of Dal'stroy, is the major Dal'stroy port on the Northern Sea Route. All types of cargo, including heavy construction equipment, vehicles, chemicals, electric and power equipment, timber and other construction materials, oil products, coal, food, fodder, and alcoholic beverages are shipped into Pevek. 58/

No ore shipments were observed leaving Pevek in 1954. One such cargo was noted during the 1953 navigation season. This was apparently a high-priority ore mined by the First Directorate of Dal'stroy, believed to produce uranium and possibly other radioactive ores. 59/ This shipment represents the first export of ore of any kind which has been observed leaving Pevek for many years.* Although no direct ore shipments from Pevek were noted in 1954, the Chaun-Chukotka Mining Industry Directorate received 45,813,000 rubles from Plant No. 520, a tin smelter at Novosibirsk, on 13 September 1954. 60/

* This lack of information is the result of extremely high security on the part of the USSR rather than the failure to make such shipments.

The Kolyma-Indigirka River Steamship Agency carries upriver the cargoes deposited at ports at the mouths of the Kolyma and Indigirka Rivers. 61/ The Yana River is served by the Yana River Steamship Agency, Dal'stroy.

Dal'stroy mines, primarily gold, long have been active in the upper reaches of the many-tributaried Kolyma River, and river transport facilities appear to be well developed. Cargo imported by way of the Northern Sea Route includes food, petroleum products, construction materials, and manufactured goods for the mining organizations. Much of the cargo destined for the Kolyma area is transshipped at Pevek, although this port is approximately 225 miles from the mouth of the river. The Kolyma River area ships coal (at least 54,000 tons in 1954), timber (at least 22,000 tons in 1954), and some swine, fish, reindeer meat, and vegetables. These shipments are consumed within the eastern Arctic.

There has been little change in the slow pace of development in the lower Indigirka area over the past few years. Imports into the area for the gold-producing Indigirka Mining Industry Directorate of Dal'stroy are similar to those of the Kolyma region, and exports from the area consist of some fish and meat. Again, these products are consumed in the eastern Arctic.

In contrast with the Indigirka, there was a noticeable increase in activity in the Yana River delta in 1954. The transshipment port for the river, Kuogostaakh, was scheduled for considerable development, the population was increasing, and apparently a larger number of ships called than ever before. The Yana River is the easiest route into the Yana Mining Industry Directorate of Dal'stroy, with headquarters at Ege-Khaya, the production of which is despatched over the Northern Sea Route. The Ege-Khaya area is believed to have the richest tin deposits in the USSR. 62/

The officials of GUSMP apparently make a determined effort to deposit during the navigation season as much cargo as possible at the mouths of the Kolyma, Indigirka, and Yana Rivers -- more cargo than can be transported on the rivers during the summer. This cargo

is stored at the several transshipment bases and sent upriver after the close of the Northern Sea Route navigation season. For example, approximately 20,000 tons of cargo, of which approximately 13,000 tons were shipped during the month of June, were despatched up the Yana River to the Yana Mining Industry Directorate during the first 6 months of 1953. 63/ The cargo shipped before the opening of the Yana River navigation season probably was transported by tractor train. 64/

The Lena River is a major transportation artery between the Trans-Siberian Railroad and the Eastern Sector of the Northern Sea Route. The river connects with a railhead at Osetrov and flows northeastward and northward to the port of Tiksi, on the shore of the Laptev Sea (More Laptevykh). The navigation season on the rivers is from 30 to 60 days longer than the navigation season on the Northern Sea Route. Goods moved down the rivers to the coast, when the Northern Sea Route is not open, are stored at ports on the coast until ocean vessels can transport them. Apparently the ships on the Northern Sea Route carry away from each port of call as much cargo as they can, and thus always travel with near-capacity loadings. The tonnage estimate in this report is based on fully loaded vessels, and the tonnage figures include the goods stored at the river mouths.

Partial statistics for the 1954 navigation season indicated that the Lena River Steamship Agency had shipped 481,723 tons of cargo up to the end of September. In addition to this amount, a total of 170,650 tons were either undergoing or awaiting shipment, giving a combined total of 652,373 tons. Of the amount already shipped, 225,800 tons was "dry" cargo, while liquid cargo and timber accounted for approximately 130,000 tons each. 66/

67/* The river cargoes which are not transshipped are excluded from the estimates of flow into the Arctic.

It is indeterminable what proportion of this cargo is consumed by the diversified activities -- lumbering, mining, prospecting, farming, manufacturing, and shipbuilding -- along the Lena and its tributaries, or is carried the full length of the river and transshipped from Tiksi, or is shipped up the Aldan River and then transported overland from Khandyga to the western Dal'stroy area.

The port of Tiksi serves as a transshipment base for Lena River cargoes destined for various points throughout the eastern Arctic. The primary export from Tiksi apparently is timber. During the 1954 navigation season the following approximate amounts of timber were shipped to the following locations: Pevek, 54,000 tons, including at least 32,000 tons for Dal'stroy 68/; Shmidta, 4,000 tons; Nizhniye Kresty, 2,279 tons; Provideniya, 3,000 tons; and Ugol'nyy, 3,357 tons. 69/ In addition to timber, construction materials and over 44,000 tons of coal for Dal'stroy were transshipped through Tiksi. 70/

The importance of the Lena River supply route is evident when it is considered in the context of the supply problem of eastern Siberia. If it were not for the Lena, the 654,000 tons of oil products and "dry" cargo planned for shipment on the river during 1955 would have to be carried into the eastern Arctic either across the Northern Sea Route from the west or across the Trans-Siberian Railroad to Vladivostok, and north via the Pacific Ocean shipping lane and the Northern Sea Route. The Lena River relieves both the Northern Sea Route and the eastern half of the Trans-Siberian Railroad of the responsibility for carrying this cargo, as well as providing a broad highway which offers easy access to the mineral resources of the eastern Arctic.

In addition to the operations discussed above, cargo is moved throughout the Eastern Sector to the many GUSMP installations on both the mainland and the Arctic islands. Information on this cargo movement is very sparse and is not sufficient to permit a reconstruction of the pattern. All types of construction equipment and materials, foodstuffs, and supplies necessary for the maintenance of the scattered settlements are transported throughout the Eastern Sector. Some are produced locally, but the majority are imported. Two cargo figures which are available indicate that the Khatanga River Office of GUSMP, handles approximately 50,000 tons of cargo per year. This includes coal, which is mined at Kotuy and shipped through the central Arctic, as well as construction materials, lumber, and oil. 71/

C. Western Sector.

The Western Sector of the Northern Sea Route reaches from Murmansk to Mys Chelyuskin. Only that portion of the Western Sector lying between Nar'yan-Mar, at the mouth of the Pechora River, and Mys Chelyuskin is considered in this report, and all references to the "Western Sector" should be construed as referring to this limited definition of the area.

During the 1954 navigation season a minimum of 167 vessels operated in the Western Sector. These vessels served four primary areas in the Western Sector where raw materials are being exploited. These include the Vorkuta coalfields, the Pay-Khoy fluorspar deposits, the coal and ore deposits in the vicinity of Noril'sk, and the timber resources of the middle Yenisey River.

The Vorkuta coalfields are the most important of the western Arctic. The coal is of good quality and is believed to include grades suitable for metallurgical coke. The brown coal deposits also found in the area are not exploited. The Vorkuta reserves of hard coal alone are about 20 billion tons, and production in 1954 is estimated to have been over 12 million tons. Some of this production is consumed locally, but the preponderance goes to the European USSR by way of the Pechora Railroad. 72/ Shipments of Vorkuta coal also are made from the Northern Sea Route port of Nar'yan-Mar to Arkhangel'sk and

Murmansk, where it is used, among other purposes, for bunkering ships. 73/ It is also possible that some of this coal is carried to eastern ports of the Northern Sea Route.

The Pay-Khoy Peninsula contains the largest known reserve of acid-grade fluorspar in the USSR, amounting to about 1 million tons. Ores from these deposits are concentrated at Amderma, and it is estimated that this area accounts for 20 percent of total Soviet fluorspar production. The concentrates are shipped by way of the Northern Sea Route to the Kola Peninsula (Kol'skiy Poluostrov) and Leningrad. 74/

The copper, nickel, cobalt, and coal deposits near the estuary of the Yenisey River are exploited by the Noril'sk Combine of the Ministry of Nonferrous Metallurgy. A nickel smelter and a refinery exist at the Combine, and their products are shipped by rail to the port of Dudinka, on the Yenisey River. From Dudinka, Noril'sk production is sent either up the river to Krasnoyarsk or across the Northern Sea Route to Murmansk and Arkhangel'sk. There is no information on the ultimate destination of these products. 75/

Noril'sk is an important producer of coal as well as metal products. Approximately 85,000 tons of coal were shipped in river vessels from Dudinka to various consumers along the Yenisey River during the 1954 navigation season. The major recipient of this coal was the Directorate of Arctic Supply, GUSMP, at Dikson, a primary bunkering point for ships operating in the Western Sector. In addition to these river shipments, an unknown amount of coal was transported over the Northern Sea Route. 77/

Timber from the middle reaches of the Yenisey River is floated downstream to Igarka, from which the greater part is transshipped to Murmansk, Arkhangel'sk, and western Europe. Some timber, used primarily for construction purposes, also is distributed throughout the Western Sector of the Northern Sea Route -- for example, for the

construction of a naval installation at Guba Belush'ya on Novaya Zemlya during 1954. 78/ The timber shipped from Igarka to Soviet and non-Soviet northern European ports or along the Northern Sea Route is carried in Soviet vessels; that going to western European ports generally is carried in non-Soviet Bloc vessels chartered for service on the Northern Sea Route. The use of these non-Soviet Bloc vessels has been increasing in recent years. Thirty-three such vessels were noted carrying timber from Igarka to England, Belgium, France, and Egypt during the 1954 navigation season. This number may be compared with a total of 17 such vessels in 1950, 10 in 1951, 79/ 23 in 1952, 80/ and 28 in 1953.* Since these non-Soviet Bloc vessels have been used exclusively for foreign operations -- that is, timber sales to western Europe -- any increase in the number of these vessels is a reflection of an increasing number of such sales.

In addition to the cargoes discussed above, general cargo, supplies, food, construction materials, and technical equipment are transported throughout the Western Sector. For example, the Khatanga Fish Processing Plant shipped fish to Dudinka, 81/ probably for the Noril'sk Combine.

IV. Support of Shipping.

A comprehensive meteorological and hydrographic program in support of Northern Sea Route shipping is conducted each navigation season. In the past, this program has been under the control of the Arctic Scientific Research Institute, Leningrad, and the now defunct Directorate of Polar Stations and Scientific Institutions, GUSMP, which operated approximately 110 polar stations, 82/ most of which are located within a few miles of the shipping lanes. The work of the polar stations is supplemented by observations taken aboard icebreakers and hydrographic vessels, as well as by aerial reconnaissance. Early in 1955 the Directorate of Polar Stations and Scientific Institutions was merged with and subordinated to the Directorate of Arctic Fleets and Ports. 83/

Aerial ice reconnaissance takes place every year throughout the navigation season. Flights are made almost daily in both sectors of the Northern Sea Route by aircraft of the Directorate of Polar Aviation, GUSMP, which are chartered each year to work with Northern Sea R

Between 15 and 20 hydrographic vessels have operated on the Northern Sea Route each year for the past 3 years. During the 1954 navigation season, hydrographic surveying was concentrated in the following areas: Zemlya Georga and Zemlya Aleksandry in Franz Josef Land, the east coast of Novaya Zemlya, the northwest coast of the Taymyr Peninsula between Dikson and the Borisa Vil'kitskogo Strait, the eastern Laptev Sea between Tiksi and the

Novo Sibirski Islands (Novosibirskiye Ostrova), and the Chukchi Sea. These hydrographic parties were charting the seas and erecting navigational aids. Some of them may have furnished weather information.

Another phase of the program for the study of the Arctic is the establishment of three* drifting stations -- North Pole 3, North Pole 4, and North Pole 5 -- in the central Polar Basin. These stations, the announced purpose of which is to further the

* North Pole 3 was abandoned shortly after North Pole 5 was established.

development of the Northern Sea Route, have carried out an extensive program of geophysical research. Although the actual purpose of these expeditions probably is the collection of data for the Soviet basic scientific research program during the forthcoming International Geophysical Year, they do have certain implications for Northern Sea Route shipping. The work of the drifting stations almost certainly has resulted in an improvement in Soviet meteorological reporting for the Arctic. In addition to this, the study of the behavior of the sea ice in the central Polar Basin will make possible more accurate ice-forecasting techniques, which, in turn, should result in the operation of more vessels for longer periods of time on the Northern Sea Route.

Thus, through an apparently efficient, accurate, and highly organized system of weather and ice reporting and forecasting, GUSMP furnishes what seems to be adequate support to shipping operations on the Northern Sea Route.

APPENDIX A

METHODOLOGY

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APPENDIX B

GAPS IN INTELLIGENCE

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APPENDIX C

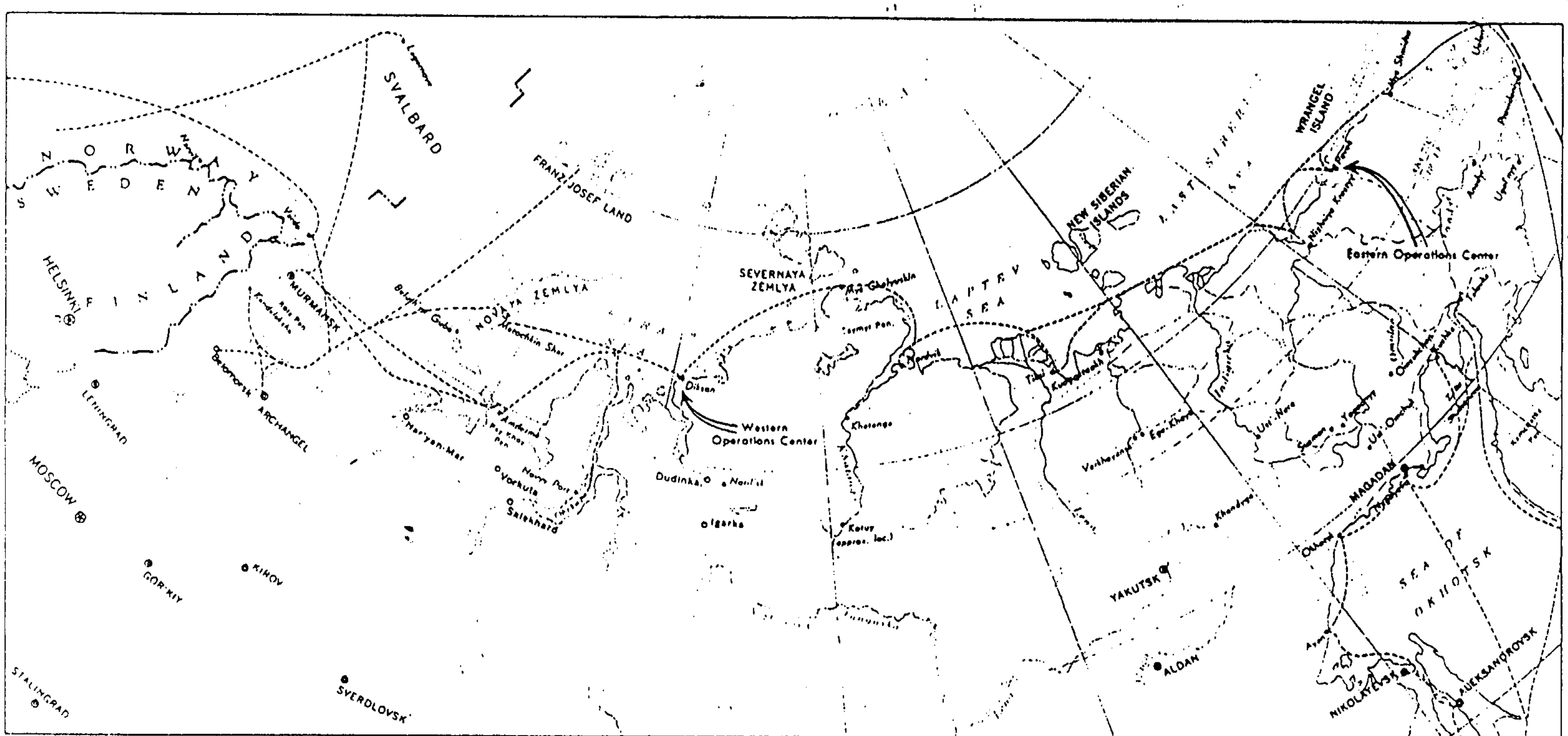
SOURCE REFERENCES

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

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

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.



USSR

SOVIET NORTH

MERCHANT SHIPPING OPERATIONS ON THE NORTHERN SEA ROUTE - 1954

Area under Dalstroy control | Sea route | Railroad (selected) | Road (selected) | Trail (selected)

250 500 750 1,000 Miles
250 500 750 1,000 Kilometers