

THE RUSSIAN ARCTIC SEA LANE: ENDEAVOUR AND ACHIEVEMENT

THE NORTHERN SEA ROUTE: Soviet exploration of the North East Passage.

By TERENCE ARMSTRONG. *Cambridge: Scott Polar Research Institute (Sp. Publ. No. 1), 1952. 9½ x 6½ inches; xiii + 162 pages; illustrations, sketch-maps, and folding map. 21s. [In Canada, Macmillan Company, \$4.00].*

It is four hundred years since the notion of Northwest and Northeast Passages was conceived in Western Europe. Yet it is only within the last two decades that spectacular results have been achieved in the pursuit of this idea. In the American North, the Northwest Passage has been barely conquered. In the Soviet North, a useful sea lane, called the "Northern Sea Route", has been developed. After so many years, it is not surprising that the West is still asking questions about the Russian success.

It is unfortunate that the available facts admit of little more than historical presentation. But Mr. Armstrong confines his historical survey to the period prior to 1933. Thereafter, undaunted, he marshals his data under the headings of physical characteristics, traffic, administration, equipment, and scientific support, in order to make a sustained and courageous effort at analysis. The result is more than an exhaustive collation, and a number of interesting conclusions, convincingly documented; it is the author's especial achievement, that, working with scanty and rapidly aging materials, he provides or adumbrates the answers to many major questions.

The subtitle of this study emphasizes that there is a long record of navigation in Russian Arctic waters. This is to be digested before one approaches the Soviet achievement. It is a somewhat tangled story. There were voyages which were made both by Russians and by non-Russians; which were inspired by economic, scientific, or strategic ends, or by a mixture of these; and which were confined to one or more sectors of the Russian Arctic, as well as directed along the entire northern coast of Russia. An outline of events in each of three regions unravels the skein. Most important is the Kara Sea, which was penetrated from the West. There is the sector east of the Lena, which was entered from the Pacific. Finally, there is the central sector, and the difficult navigation around the Poluostrov Taymyr (Taymyr Peninsula). It is a treatment by which the few attempts to sail the entire Northeast Passage are left for the reader in easy isolation.

Russian navigation in arctic waters apparently dates from the ninth century, but this was confined, in all probability, to the Barents Sea. This fascinating, but less relevant mediaeval link in the story is omitted. It is sufficient for the narrative to begin in the first half of the sixteenth century, to show that Russian vessels were already in the Kara Sea, and probably also in the Laptev Sea before mariners from Western Europe first entered the waters of the Barents in their search for a sea route to China. But these vessels were manned by traders from the White Sea coast, where the expanding Russians first debouched on the arctic seas. They were exploiting what a later age might have called a "Sable Coast", and none are known to have dreamed of an Orient beyond. Nevertheless, it emerges that the native contribution to navigation in Russian Arctic waters is very old and that it is important. It also develops that the Soviet government did not discover the Northeast Passage, and was not the first Russian administration to commission voyages along the entire route.

If the reader is grateful for a clarification of the confusing maritime history of the Russian Arctic, he is especially indebted for the story of operations in the Kara Sea. Of all the activities in the waters north of Russia, these were and probably remain unique for their commercial importance. Appropriately, they occupy almost

one-fifth of the book. Many will be surprised at the revelation that the Kara Sea route emerged from the pioneer stage as long ago as 1905, and to learn that one resolute businessman, only eleven years later, was enjoying profits of 40 per cent. Given such a return, and a diminishing risk, there is no surprise that the Revolution failed to stop the Kara trade, but merely altered the form of capital involved and substituted a different source of initiative.

The physiographical study of the Russian Arctic, done prior to 1933, is also briefly reviewed. By lumping scientific work done before 1917 and 1933, and by juxtaposing this with what followed, the author inevitably magnifies the lack of plan and "cohesion" in the earlier periods. One is clearly invited to a definite historical judgment which some may be reluctant to accept without a comparison of contemporary work in Scandinavia and North America.

The survey ends at a notable juncture in the development of the Russian Arctic, the establishment of the Chief Administration of the Northern Sea Route (G.U.S.M.P.) in late 1932. This act by the Soviet government has great importance in several respects.

Over one of these, its timing, the author does well to pause. He is apparently unable to say whether the founding of the G.U.S.M.P. coincided with an increase in planned expenditure on either the Northern Sea Route or on the North in general. He implies what is probable, that planned expenditure on the Route was intended to rise. He rightly dismisses the possibility of such a decision during the 'twenties, a period of reconstruction. He notes that the first steps toward the industrialization of the U.S.S.R. had not been completed until the end of the First Five Year Plan in 1932. He points to the desirability of coordinating the planned development of the shipping lane and of the Subarctic with that of the rest of the country during the ensuing quinquennium. But the relevance of a jejune industry to the birth of a major effort in the North after 1932 may be called in question. It would seem that demands placed by the development of the North on basic industry have ever been slender; and it would seem that coordination with the first national plan would have been equally desirable, for the government had long been active in the region. The question remains: why, when other projects were urgently needed, did the government begin a serious effort to develop the Northern Sea Route? One possibility has not been explored, and, indeed, defies examination. We know that expenditures during the First Five Year Plan lagged behind those planned, apparently due to the lack of capital equipment. In 1933 it is possible that inputs critical to more urgent projects were in short supply, whereas inputs useful in the North, such as forced labour, were in surfeit.

The higher policy of the Soviet press is, explicitly, the repudiation of failure and the celebration of success. The former is achieved largely by silence, the latter by the announcement of plans conceived and fulfilled. The difficulty is as much to detect defeat as it is to evaluate success. To equate the appearance of the G.U.S.M.P. with that of a plan for the North is perhaps to succumb to the sources. The evidence relative to the Subarctic as a whole, rather than to the Northern Sea Route alone, suggests that the coordination of a northern program under the G.U.S.M.P. points to the failure of the First Five Year Plan in the North. It is apparent that an effort *was* made to apply the essential features of the plan throughout the country as a whole, and that most efforts in the North were inarticulate and premature. Despite the name, the *Komseverput'* seems to have done little about the Northern Sea Route between 1923 and 1932. Obviously, the lessons to be learned were many and costly. Not the least was the fact that the government was faced with a peculiar problem in applying its plan throughout a vast region. It was unable to define this region, and this problem, until about 1932. Thereafter, the directions taken in the North were uniform with those already taken elsewhere during the previous plan. That the government made the new agency responsible for the Northern Sea Route also responsible for its plan in most of the Subarctic

suggests that it viewed the Route as the key to its problem. Whether or not one is justified in seeing more than a merely convenient association of the two developments, it is clear that the establishment of the G.U.S.M.P. did not mark the inception of planning in the North, but that it marked rather an effort to improve the implementation of a plan, to increase control.

Of the two important functions of government in a planned society, implementation is vastly more difficult than prognostication. For the former involves the erection of a complex mechanism of controls. In both respects, the whole Soviet experiment is instructive. In the former respect, the G.U.S.M.P. emerges implicitly from this study as an especially interesting case-history. Broadly speaking, the Soviet administrative pattern had crystallized by 1932. It was marked, as had been expected, by a phenomenal degree of centralization. Planning, perforce, was tightly concentrated at the centre. It is true that each enterprise still had a contribution to make, but this was little more than a conservative forecast, based on local knowledge, and utilized by the centre as a confirmatory source of information. In the field of control, the degree of centralization already achieved was equalled only by the boldness of the effort to this end. Decentralization was accepted only along functional lines, and existed, essentially, at only one level, the Council of People's Commissars. The larger function of the Commissariats was control, and each retained, and exercised, a power of prescription which was and remains unknown outside the Soviet polity. Under the circumstances, it is difficult to understand the statement that: "An organisation is set up in order to shape events rather than co-ordinate work already being done" (p. 54).

Before 1933, the Soviet North was thus subject to parallel channels of control, operating downward through various federal, provincial, republican, and local authorities. There was, in addition, an "actionary" company, the primary purpose of which appeared to be still dimly connected with the development of the Northern Sea Route. This was one of several relics of pre-Revolutionary trading practice which had been retained in the 'twenties, as the book shows, only to facilitate certain regional operations involving several commissariats. After 1929, as the book does not show, these were subject to liquidation during the First Five Year Plan. A capitalistic victim was involved in a socialist prosecution. It is impossible to say whether this particular company was more inefficient than many other similar or nationalized enterprises; and it is possible that the charges that it was inefficient (p. 22) were little more than the typical Soviet *odium theologicum*. After four years of blundering effort, it is highly conceivable that the situation called for an inter-ministerial organ to coordinate operations in a region newly recognized as homogeneous. The *Komseverput'* had been expanding; but national policy called for its demise, and existing controls had to be fused otherwise. The Russian administrative system was dynamic and experimental. The compromise which it threw up was a curious Chief Administration. It lacked a ministerial "home", but, in the Soviet administrative hierarchy, it was only one rank below a commissariat; it was given the rare status of direct attachment to the Council of People's Commissars, and, as such, it was a vastly more powerful body than any previously active in the North. The circumstances of the birth of the G.U.S.M.P. suggest increasing centralization of control. A fact of some importance for the timing of the step, as well as for other questions, is obscured, if it is denied that planning was attempted in the North prior to 1932. If, given its complexity and power, the G.U.S.M.P. was also to any degree autonomous in the field of planning, it is strange that no "planning" or "projects" administration was set up (pp. 55, ff).

The circumstances of the drastic reorganization after 1937 are similarly interesting. Some apologists may suggest that the failure of that year was partly due to too much decentralization. That a large measure of this existed, as the author believes (p. 57) is debatable. In the G.U.S.M.P. of the Second Five Year Plan, we have an organization responsible for a gigantic empire embracing only less than

one-third of the U.S.S.R., as well as for the Northern Sea Route. Under an administration ambitious beyond its capacity, this involved obligations perhaps as great, if not greater than those ever assumed by a single institution of its status. In the Soviet system, as we have noted, these obligations had long been subject to central control which was delegated between various commissariats and their subordinate territorial authorities. Against the background of a proven administrative system, the old G.U.S.M.P. emerges as an anomalous regional authority unique in the Soviet political scene. That its reorganization took the form of a redistribution of all its duties not directly related to the Northern Sea Route among orthodox channels of control, and that this coincided with the appearance in the State Planning Commission of branches specifically concerned with the North and the Route, suggests that within four years too much centralization had been achieved. Altogether, on the part of a nation with a considerable experience in the definition, administration, and development of regions, we have an interesting failure to evolve a single regional authority for the North.

In the economic context, the most troublesome questions put to the evidence by Western observers generally reduce to profitableness. Has the effort expended on the Northern Sea Route been repaid? In so far as the Russians occasionally pay lip service to basic economic concepts, the evidence has certainly been adduced. But it proves intractable, and a good deal less suggestive than even this careful study makes it appear. There is no doubt that the Kara Sea route was profitable prior to 1917. The author concludes that it was profitable in the 'twenties also, especially in the export of timber. But Voyevodin's figures, quoted in this connection (p. 21), are not entirely convincing. For behind these there lay already a peculiar Russian policy for the formation of prices and freight rates, as well as monumental mismanagement. Tempting as these are to the data-hungry West, who can be certain whether these exaggerate, or even depreciate the margin ostensibly in favour of the Kara Sea route? The author admits the impossibility of determining the effectiveness of early Soviet investment in this route (p. 22). In any case, such figures are intrinsically incapable of supporting the strong presumption that, profitable or not, the route had value in that it carried freights which at that time simply could not be carried otherwise, economically or not. In this connection, there are probably figures available which might hint whether the quantities so moved were, or were not, of national importance. At this point, it is well to remember that, however impressive the Kara Sea route as an historical antecedent of the Northern Sea Route, its profitableness has never implied that of the Northern Sea Route as a whole.

After the inception of planning in 1928, one must begin with a notion of profit which has uncertain connotations in the Soviet planned economy, in both the short term and the long. Short term profits are planned profits, they seem to bear no relationship with an initial capital investment, they vary between industries making producer goods and those making consumer goods, and the manner of their determination is obscure. Nevertheless, the drive to achieve *rentabelnost'*, which the Russians define in a typical circumlocution as "purposiveness in the economic sense", is an old one. But two things seem clear: profits exist and constitute some kind of return to an investment; and this return is widely and energetically pursued in both the short term and the long. Thus far, the author appears to be justified in searching the more specific evidence for profitableness. But it is not strictly true to say that profit, even in the short term, is irrelevant in the Soviet Union (pp. 103, 112).

The question of subsidies is apposite, and is raised at this point (p. 113). In this context, it merits perhaps slightly fuller treatment than it has received. In literature concerning Soviet economics, the term has been subject to some loose usage. Major capital construction is financed out of the budget through non-repayable, non-interest bearing appropriations. The broad assumption is that an

enterprise emerges from the pioneering stage when it ceases to require a regular appropriation. It would seem to be such an appropriation which is referred to as the "subsidy" out of which 90 per cent of the employees of the Moscow office of the G.U.S.M.P. were to be paid (p. 113). In addition, the state has found it necessary to support already established industries with more or less extemporized annual grants (*dotatsii*). In the Soviet system, it is probably only these which merit the name "subsidies". In 1936 an effort was made to extirpate all of these "subsidies", and it was made clear that only a small number of enterprises which were considered vital to the state should continue to receive these, i.e., should be permitted an extended or continuous failure to achieve *rentabelnost'*. It is doubtful that the effort has ever been successful. Three years later, the Eighteenth Party Congress was characterized by a number of public commitments by various enterprises to operate without "subsidies". If, under the circumstances, Papanin on this occasion also referred to a *dotatsiya* (p. 113), he said little of the profitableness of the fleet of the G.U.S.M.P.

In several passages the author refers to the application of *khozraschet*, the Soviet cost-accounting system, to various units of the G.U.S.M.P. He explains the extension of this system to further units in 1939 merely in terms of attention to costs, thereby emphasizing that, contrary to the Western assumption, to reduce costs in the Soviet system is not necessarily likely to raise profits. This is a formally inadequate definition of the system, but embodies that aspect which is popularly stressed. An enterprise is not beset with the repayment of an initial investment in itself; indeed, it appears that even amortization rates have often been set too low. We are far short of an incentive to economic operations; we are very far short of an incentive toward profits. As the author says, *khozraschet* becomes little more than another device to reduce operating expenditures. It is forlornly optimistic to cite its introduction, and a fashionable promise to try to forego a "subsidy", in the context of "the possibility of making the Northern Sea Route a paying proposition" (p. 47) and of steps toward making ends meet (p. 113). The system also has legal implications: the application of *khozraschet* loses even some of its residual power to suggest economic progress if it is remembered that those units of the G.U.S.M.P. which applied it earliest were probably the first to need legal personality.

One continues to ask the exact meaning of the year of "trial exploitation" (p. 43), of a "normally working" sea route (pp. 43, 59), of "normal commercial exploitation" (p. 47), and of "the first season of trial commercial exploitation" (p. 113). To these questions, the evidence maintains a stubborn silence. It is a silence which does not allay the suspicion that it was such questions which led to the castigation of B. V. Lavrov (p. 113) and to the dissolution of the Institute of Economics of the North (p. 61).

In the long term, the Northern Sea Route remains one more example of the puzzling manner in which the Soviet system disregards costs and courts, perhaps, production. The Stalinist truism that profitableness must be judged from the standpoint of the economy of the whole nation and over a period of several years is quoted on p. 103 and is typically evasive and unhelpful. Yet post-war theoretical literature seems to reveal that no satisfactory method of arriving at such a judgment has yet been worked out; and one wonders how Soviet planners¹ do their job. We are compelled to examine the apparent usefulness of the Route to the nation as a whole. First, there are those resources which, without the Route, might not otherwise be exploited. Many of these have long been the object of a general search, by which Russia has tried to insulate herself from the world market and to achieve strategic self-sufficiency. It is clear that the ability to sail into all sectors, and to

¹On the eve of the Nineteenth All-Union Congress of the Communist Party, held last October, Stalin made it clear that in his opinion, despite years of official pressure, his economists have not yet produced a theory to explain the planned economy of the U.S.S.R.

pass from one sector to another, has expedited the exploitation of these resources. One is tempted to ask, however, whether any of these resources really owe their use to a through sea lane, and whether the gigantic organization set up to create this was really necessary. Timber can be, and was, exported from the Yenisey without a Northern Sea Route. After two decades, there is still no sign of either the need or the intention to export from commercially useful timberlands farther east. Is the availability of coal to arctic shipping ultimately dependent on a through route? The history of arctic navigation suggests that Nordvik salt could have been delivered to the Pacific fisheries without a G.U.S.M.P. The author has looked hard, but apparently in vain, for evidence to substantiate the Soviet claim that subarctic minerals are carried by the Route. Nor is the Northern Sea Route apparently necessary for the use of those river systems which drain into the Arctic. Again, the past suggests that operations to all these estuaries could have been more modestly coordinated from the west and from the east, and perhaps all the necessary scientific work could have been brought together, by, say, the commissariat controlling the merchant fleet. Second, there is no evidence that the Northern Sea Route has seriously relieved the Trans-Siberian Railway. It is strange that the extensive literature on the need to reduce long hauls by rail, and therefore the transport component in commodity prices, has never once referred to the magnificent effort to build a Northern Sea Route. One suspects a certain sophistry in the data given by Ioffe and Shmidt (p. 107). While Papanin could claim that sea freights to Yakutiya were cheaper than rail freights, it is interesting to note that the Trans-Siberian may have since been linked with Bratsk and even Ust-Kut' (p. 109), i.e., that the extension of the railway to the navigable headwaters of the Lena has nevertheless been found necessary. This is merely consistent with the fact that developments planned in the southern portions of the Subarctic still seem vastly greater than any achieved or planned farther north. *Dal'stroy*, an organization operating in the northeast of Siberia, seems to have swung over at an early date to the use of an overland road, and to have allowed the development of Ambarchik to lag. All of this seems to add up, strictly speaking, to the non-essentiality of the Northern Sea Route, so far as the resources of the hinterland are concerned, and, second, to non-profitableness in this respect in the long term.

The apparent failure of the Northern Sea Route to achieve profitableness suggests more than the collapse of a hope. It raises the question as to how careful Soviet planning has been. In an age of Colombo Plans and Tennessee Valley Authorities, it is a question whether a peculiar attitude toward costs, rather than careful planning (p. 37), remains the truly essential feature of the Soviet attack on the North. In a nation noisily committed to "the good life", this attitude toward costs argues either an incredibly secular stupidity, or some all-encompassing motive other than profit.

Towards the close of the book, the author reveals his quiet concern about the motives of the Soviet government in developing the Northern Sea Route. Although it has not repaid the effort (p. 112), he concludes that the initial motive was economic (p. 117). He reaches this conclusion by an approach which is carefully confined to an inductive estimate of the usefulness of the Route to the country. His handling of the evidence relative to the economic motive may be generally sound. The same method, applied to the strategic motive, however, is inadequate. As the author says, the necessary evidence is lacking. But obvious strategic usefulness is not the only criterion—in the case of the U.S.S.R. it is a most unlikely criterion—of the strength of the strategic motive. Elsewhere, the book does bring evidence which can be construed as indicating a very strong, if not predominant strategic motive.

We go back to the early years of the present century. On the one hand, there has been no digression to emphasize the "urge to the sea", infecting a nation whose maritime frontiers were twice as long as her land borders, and who was

deeply conscious of her limitations as a land power. On the other hand, there is reference to Tsushima. But its impact, which meant for Russia, not only the loss of a fleet, but the *coup de grâce* to her century-old and moribund position as a naval power, is inadequately pointed. In the contemporary international situation, the Russians partly attributed this catastrophe, and with much justice, to the need to move the fleet half way round the world, and through foreign waters, to reach the Pacific. The author notes that a change then took place in the attitude of the government toward the Northern Sea Route, and, significantly, in the attitude of the then Minister of Transport. "This was the only occasion before 1917 on which strategic motives can be said to have played an active part in the development of the Northern Sea Route" (p. 113). But what an occasion! The realities of naval power, and the realities of Russia, old or new, can be discerned only against a broad chronological canvas. In such a canvas, ever since 1905, we see a continuous effort to rebuild the fleet, and we see a stubbornly recurring interest in the Northern Sea Route. It is only a decade later that we find the *Taymyr* and *Vaygach* beginning their voyages along the Route, for admittedly strategic ends. Four years later, the name of the committee established by Kolchak, unless its nomenclature is meaningless, and however fatuous its ambitions, indicates a primary interest, not in the Kara Sea route, but in the entire Northern Sea Route (p. 17). The survival of a similar priority of interest seems to be reflected in the names of its successors, set up one and eight years later. The book brings no evidence that the development of the Northern Sea Route had been, explicitly or tacitly, deleted from the tasks of the last in the line.

To what extent arctic enthusiasts, probably senior to Shmidt, enjoyed the sympathy of the Politburo in the early 'twenties is a question which an unusually taciturn bureaucracy will probably never answer. By the end of the historical survey, the inference is possible that more than inherited enthusiasms and economic stimuli explain the promptness with which Soviet Moscow turned its attention to the North and to the Northern Sea Route in particular. The author observes that the career of Schmidt may indicate deliberate planning as early as 1929 (pp. 62-3), and it has been argued that this began at least in 1928. The initial preparation of control figures must, clearly, have begun some years prior to even that date. Politically, the formation of the G.U.S.M.P. in 1932 suggests an effort to improve control. Economically, its formation suggests sacrifice, for there may be no other major project undertaken by the Soviet government for which a compelling economic explanation is so hard to find. Against this background, the objective of a normally operating sea route in five years suggests more than ambition, it suggests acceleration, some sense of urgency. Is it therefore prudent to infer that the unusual attachment of the G.U.S.M.P. to the Council of Ministers was no more than an administrative compromise dictated by the fact that it was not subordinated to any commissariat? The author makes the interesting observation that of the three most important ports (Ostrov Diksona, Tiksi, and Bukhta Provideniya) the first and last do not appear to have been built for the export trade. Nor does it appear that these are the most important for trans-shipment of the principal goods coming out of the Subarctic. The West is now painfully aware of the sensitivity of the Soviet borders, because the U.S.S.R. has the power to express that sensitivity. Her truculent sensitivity in the 'twenties was not as obvious, since she lacked that power. Nevertheless, it is intriguing to note that the G.U.S.M.P. was formed only six years after Russia laid formal claim to "her" Arctic and eight years after she had reacted strongly to one contesting claim; only four years after Stalin had inaugurated the first national plan with the warning to his people that they had only ten years to prepare; and at about the very time that Soviet defence policy was beginning to react to the rise of the Nazi Party in Germany. Finally, if it seemed a little strange that a report by the head of one enterprise, the Northern Sea Route, should appear on the agenda of the Eighteenth

Party Congress, it is interesting to note that the same agenda was marked by a number of reports by senior officers of the armed forces. The pace and nature of the efforts to build a through route suggest a deep and abiding defensive interest on the part of the Kremlin. This interest is, after all, merely one more reflection of the typical conservatism of a revolutionary power.

Concern with the motives of the government should not blind us to the motives of the many employees of the G.U.S.M.P. and of the many arctic specialists in the U.S.S.R. There is little doubt that a body of eager workers has been forthcoming, at least in the more responsible, technical grades. Much of this is due to the Russian background, that is, to a national life which is hard, because it must combat an inclement nature. To this ancient need, modern Soviet psychology has added an impetus in the formal view of man as an active creature, whose consciousness has no meaning except in terms of a struggle with its environment. The twin stimuli of environment and ideology go far to explain the collective response to a program designed to deal with drought in the steppes, with desert in Soviet Central Asia, and with the *osvoyeniye* or conquest of the North. The Soviet system for the formation of public opinion has skilfully exploited these stimuli. Hence the precedence of the political branch in all organizations, and therefore in the G.U.S.M.P. (p. 62). Hence a collective response in which the substitution of the emotional for the rational seems to have taken place to an unusual degree. It is not always clear whether the Centre, which keeps its motives to itself, alone inspires public castigation of deviation on the part of its servants. Were the criticism of Lavrov and the dissolution of the Institute of Economics of the North not merely consistent with a general tendency to wish to get on with the job, and to proscribe the recognition of certain kinds of difficulties? It is not surprising to find instances of apparent victimization by official propaganda (p. 46). Perhaps the stimuli which are employed by the Soviet government, and the native response of the Russians, are more important than the allegedly "scientific" basis of Marxism (p. 88). One questions the statement that because of this basis an extensive scientific program was undertaken in the North (p. 88). Marxism cannot presume to claim the Russian *furor technicus* as its child.

This book has been written with scrupulous care and chaste artistry. The selection of statistics has been most judicious, the dangerous drama of the North has been suppressed, and the sources purged of their extravagance. Even those passages which summarize much technical data are a pleasure to read. That the transliterations are so consistent bears witness to the author's special contributions in this field. Minor carping about a half-dozen lapses in proof-reading could not alter the fact that we now possess one mature study of an especially awkward Soviet development.

Space makes it difficult to do justice to the major individual revelations and contributions made by this book. The appendices are particularly valuable, and have clearly called for an effort almost as laborious as that involved in writing the book. It is understood that the author has since found it possible to amplify his important passages on the situation concerning ice forecasting (pp. 95, ff). It is to be hoped that he will similarly find it possible to expand his treatment of Soviet arctic convoy techniques (p. 79). The description of arctic ports and fuel supply will put much flesh on a skeleton of place names. The statute of the G.U.S.M.P. of 1941 was not previously available in English; nor was a definitive bibliography of the materials accessible to scholars in the West. Perhaps most important, the author has demonstrated that recent Soviet silence about the Northern Sea Route does not indicate that this much touted project has been quietly abandoned, or its scale reduced. His data on the performance of Liberty ships suggest that many of the limitations in the use of the Route thus far apparent can be largely attributed to the lack of greater virility in the Soviet economic potential.

The maps on pp. 80 and 107 should show the Kotlas-Vorkuta Railway as reaching the west bank of the Ob' at Labytnangi, just west of Salekhard. Recent Soviet maps, and they are probably to be believed, have thus clarified the question of a terminus once mooted at Khabarovo which is mentioned on p. 83. Such an extension argues possibly greater use of the Ob' than has been implied on pp. 65 and 108. On the other hand, the latest maps no longer show the projected route of the Baykal-Amur Trunk Line, which is given on p. 107. It now seems doubtful that this project will be completed, as long as Japan, or some other Oriental power, does not rise to threaten the borders of the Soviet Far East. It is not clear that Mangazeya is only a site, and that if any settlement now exists there, it is not so called (p. 2). On p. 80, the placing of Turukhansk is somewhat ambiguous. One would welcome documentation for the estimate of the territory controlled by the G.U.S.M.P. after 1938 (p. 56). It is scarcely fair to describe the *Sovmarkom* (now the Council of Ministers) as the equivalent of our Cabinet (p. 37), for it appears to lack the real power of policy. A footnote to explain the usages "Murman" (p. 33) and "Chukotka" (p. 23) would have been helpful, even for readers who command Russian. There would seem to be little point in restricting the definition of the Northern Sea Route to the waters between the Barents Sea and the Pacific (p. xii). It does not appear that the Russians so think of the Route; and, in that it would make no difference either to the substance of the study or to the presentation thereof, there is perhaps some merit in adhering to the Russian concept, vague as it is. This is, apparently, all the coastal waters lying between Murmansk and the Pacific, and therefore includes the Barents Sea.

Virtually all the evidence pertaining to the Northern Sea Route has been assembled in this book. The interpretations placed on this which differ from those of Mr. Armstrong require little which he has not brought to the reader. To the extent that other interpretations are possible, we are really faced with an instance of the difficulty as to how much of Russia must be examined for the appreciation of one development. To a degree perhaps unique among societies, the U.S.S.R. seems to challenge the contemplation of any of its institutions in isolation; it seems to query the adequacy of the use by a foreign observer of only one discipline; and it seems to encourage the integration of conventionally disparate streams of evidence. The latter seems to be the only wedge capable of penetrating the extraordinarily oblique grain of Soviet public expression.

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