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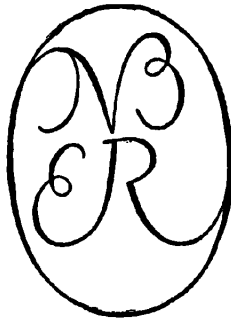
# Freight Transportation in the Soviet Union

Including Comparisons with  
the United States

ERNEST W. WILLIAMS, JR.

GRADUATE SCHOOL OF BUSINESS  
COLUMBIA UNIVERSITY

WITH THE ASSISTANCE OF  
GEORGE NOVAK AND HOLLAND HUNTER



A STUDY BY THE  
NATIONAL BUREAU OF ECONOMIC RESEARCH

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in the Soviet Union**



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## Preface

THIS study of Soviet freight transportation is a rather thorough revision of an earlier working memorandum which was circulated for comment and criticism. The original analysis was based upon extensive background research undertaken by George Novak with the Soviet sources and upon the nearly completed investigation by Holland Hunter from which his *Soviet Transportation Policy* was developed. Novak developed the statistical series upon which much of the analysis rests. In addition, he prepared various special analyses of railroad and maritime reporting and statistical methods, and brought together considerable qualitative evidence bearing upon the character of Soviet transport operations.

About the time that the working memorandum was ready for circulation, the Soviet Union released much additional statistical information, including important series which had not been reported since the mid-thirties. In preparation for this revision, Hunter reviewed these newly published data and revised all of the basic tables. This has permitted a far more simple presentation and has made possible the substitution of published for calculated or estimated observations in many of the series. On the whole, however, the data worked out with considerable ingenuity by Novak have stood the test of comparison with the more recently published material and have permitted an analysis to be made in advance of the release of more comprehensive data.

The revision has benefited by the careful review given the working memorandum by Melvin G. de Chazeau, Holland Hunter, Thor Hultgren, G. Warren Nutter, Harry Scherman, and Boris Shishkin. In addition, it has been possible to consider the reports of the railway and water carrier missions which went over to the USSR in an exchange program during 1959 and 1960, even though the complete observations of these missions are not yet available. The suggestions of Geoffrey Moore have been of particular help in the revision of Chapter 1. Marie-Christine Culbert has undertaken with great industry and patience the onerous task of checking and arranging tables and sources, as well as general editorial work which has lent clarity to the text. H. Irving Forman drew the charts.

For the interpretation of data, despite generous help, the author must accept sole responsibility.

July 1961

ERNEST W. WILLIAMS, JR.



## Foreword

THIS is the third in a series of books reporting the results of a study of Soviet economic growth begun at the National Bureau in 1954 under a grant from the Rockefeller Foundation.<sup>1</sup> It shifts the scene from industry, the subject of the first two reports, and surveys instead the structure, growth, and mode of operations of Soviet transportation.

The primary objective is to assess Soviet performance in moving freight, a matter of interest in itself but also important for checking measures of growth independently calculated for other sectors, particularly industry and agriculture. This requires, first, an understanding of the unique characteristics of Soviet transportation, to which Professor Williams contributes at the start by contrasting trends in Soviet and American transportation. The Soviet Union, as Williams notes in his opening words, has always been and has increasingly become a "railroad economy." In no period covered by statistics has the railroad dominated transport in the United States to the same extent as in the Soviet Union. In recent years the fraction of commercial freight traffic accounted for by rail transport has risen to nine-tenths in the Soviet Union while falling to less than four-tenths in the United States. Precisely for this reason the simple comparisons that are sometimes made between isolated statistics on Soviet transportation and developments in the United States can be highly misleading.

Since the history of Soviet transportation is essentially the history of rail transport, the latter forms the subject of the remainder of the book. As usual in studies of the Soviet economy, the initial problem is to audit the basic data, to evaluate their meaning and reliability. Again as usual, there are severe limits to what can be learned from direct analysis of Soviet statistical sources, but within those limits Williams leads us through the maze of Soviet data by comparing them with their apparent American counterparts. We discover that, by virtue of differences in concepts and methods of compilation, Soviet traffic statistics are exaggerated relative to their American counterparts and more so for later than for earlier years. Unfortunately, the degree of exaggeration can only be guessed at, though Williams believes it could easily be as high as 10 per cent for recent years.

<sup>1</sup> Gregory Grossman, *Soviet Statistics of Physical Output of Industrial Commodities: Their Compilation and Quality*, Princeton University Press for National Bureau of Economic Research, 1960; and G. Warren Nutter, *Growth of Industrial Production in the Soviet Union*, Princeton for NBER, 1962.

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Those versed in the operations of Western railroads have long suspected that something was wrong with the figures because plant and equipment, as reported in Soviet statistics, seem to be insufficient to support the claimed traffic. Williams finds this suspicion to be well grounded and points out that it results from faulty statistics on both sides: underreporting of rolling stock as well as overreporting of traffic. The explanation lies in the dual emphasis placed by Soviet authorities on meeting targets in both haulage of freight and utilization of equipment, which, when taken together with inadequate auditing of data reported to statistical authorities by operating units with a stake in the figures they report, leads to uncorrected misreporting of data in the indicated directions.

While the statistical illusion is real enough, it is by no means the end of the story. After a careful analysis of Soviet railroad operations compared with practices in the United States, a similar continental economy from the point of view of transport problems, Williams concludes that the Soviet railway system has in fact achieved an unusually intensive utilization of plant and equipment. He attributes the exceptional performance in this regard to the following factors: close scheduling of all trains at standard speeds, freight having general priority over passengers; collecting and delivering of goods at the convenience of the hauler, even at seasonal peaks, with a constant backlog of goods awaiting shipment; rapid loading and unloading, day and night, by a work force about three-quarters as large as the more narrowly defined operating personnel; organizing of work under virtual military discipline; standardizing of equipment with heavy reliance on all-purpose open cars; operating of a simple, noncompetitive rail network; and so on. The resulting service is, by the same token, quite different in nature from that provided by Western railroads. As Williams shows by a number of interesting examples, when American railroads have operated under similar circumstances, they have achieved comparable densities of traffic and intensive utilization of equipment.

While the comparisons made in this study between the Soviet and U.S. transportation systems and their growth trends are designed primarily to aid analysis of such specific issues as those just mentioned, they have a broader interest as well. At the same time, this work does not pretend to be a definitive study of comparative economic performance in the transportation sector of those two economies. For example, the important question of productivity of resources is but

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briefly touched upon, and then only in the case of narrowly defined railroad operating personnel (see Table 23 and the surrounding text). Measures of labor productivity based on total employment would come out quite differently from those shown in that particular case, primarily because persons engaged in loading and unloading activities, not counted in the operating work force, are so much more important in the Soviet Union than in the United States. There are serious difficulties in interpreting Soviet data on employment in the transportation sector and in making them comparable with U.S. data, but we may suppose they are no different in kind from those posed by other types of data. In any event, we hope to present in a later report in this series a more comprehensive analysis of levels and trends in labor productivity appropriately compared with performance in the United States, a task now greatly lightened by the publication of John W. Kendrick's *Productivity Trends in the United States*.<sup>2</sup>

We also plan in the later report to examine the consistency between measured growth trends for transportation and for other sectors of the Soviet economy. It is already possible to note certain roughly parallel developments in Soviet and U.S. economic history. In the Soviet Union, freight traffic multiplied about 13.5 times and industrial output about 7.5 times between 1913 and 1958; in the United States, transportation output multiplied about 13.9 times and industrial output about 8.9 times between 1875 and 1920, a comparable period in the sense that U.S. industrial output in 1875 was at more or less the same level as in the Soviet Union of 1913.<sup>3</sup> This kind of comparison is obviously crude and unsatisfactory in and of itself, but it indicates promising fields for further exploration.

We cannot, therefore, assess as yet the full importance of specific elements in the large body of information that Williams has brought to bear on the phenomenon he has studied: growth of productive activity in the sphere of Soviet transportation. We can, however, be sure that his work has moved us well forward in our successive approximations to knowledge and understanding. And this is the basic test of successful research.

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<sup>2</sup> Princeton for NBER, 1961.

<sup>3</sup> These figures are derived from this book, Table 1; Kendrick, *Productivity*, p. 540; and Nutter, *Industrial Production*, pp. 196 and 227.



Freight Transportation  
in the Soviet Union



