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OUTLINES OF RAILWAY ECONOMICS



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OUTLINES OF RAILWAY ECONOMICS

BY

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PREFACE

THIS book owes its origin to a course of lectures on "Economics with special reference to Railways," which I gave at the Midland Railway Institute, Derby, and at the University of Sheffield, during the past winter. Each week a resumé of the lecture was published in *The Railway News*, and these resúmes form the basis of the book. I owe my best thanks to Mr. Frederick M'Dermott, the Editor of *The Railway News*, for kindly allowing me to make what use I wanted of the resúmes. I have revised the whole of them, eliminated the lecture form, divided the matter up into chapters, re-written certain portions, and made various additions and alterations.

I have approached railway problems from the standpoint of an economist, and have sought to show how the economic principles which underlie business and industry in general apply to railways in particular. Either I had to assume that the reader had a knowledge of general economics, or I had to devote space to the discussion of certain

portions of economic theory ; I selected the latter alternative. As a consequence, the book includes a good deal of matter which would ordinarily be excluded from a book on railways, but its inclusion has the advantage of emphasising the connection between general economics and railway economics. The book is based primarily on a study of railway conditions in this country, but reference is frequently made to conditions abroad, particularly in Prussia.

My obligations are very numerous. In what concerns those parts of the book which deal with general economics, my primary obligation is to Professor S. J. Chapman of the University of Manchester, who first taught me the subject. I also owe much to various economists whose ideas I have assimilated since I began to study economics, and especially since I began to prepare lectures. In most cases, I can no longer say to whom I owe a particular idea ; there are, however, two acknowledgments of this kind which I should like to make. Mr. Macrosty's account of industrial combinations in this country, and Professor Pigou's treatment of the subject of differential charging, have been especially helpful to me in writing certain chapters.

For the information concerning railways, I am indebted to three sources : in the first place, to numerous authors who have dealt with different aspects of railway economics ; in the second place,

to various parliamentary papers, a list of which, as also of the authors consulted, will be found at the end of the book. In the third place, I am indebted to many of the railwaymen who attended my lectures at Derby and at Sheffield, as in the essays which they wrote, and in the discussions which they raised at the end of lectures, they were kind enough to supplement and correct, in a way which it is only possible for railwaymen to do, information which I had obtained from other sources. In particular, I am under a great obligation to three of my students of the Midland Railway staff, Mr. H. Curwen of the Goods Department, Sheffield; Mr. E. Falconer of the Chief Goods Manager's Office, Derby; and Mr. T. Radford of the Chief Goods Manager's Office, Derby. These gentlemen took the trouble of going through the resumés in *The Railway News* after the lectures were finished, and made many valuable suggestions and criticisms which have been of great assistance to me in preparing the manuscript for the press.

I am further under obligation to my colleagues, Dr. J. D. Jones and Mr. T. S. Ashton; and to Mr. E. Falconer and Mr. K. L. Gould, for their great kindness in reading the proof-sheets of the book while it has been passing through the press.

DOUGLAS KNOOP.

SHEFFIELD, *June*, 1913.

INTRODUCTION TO THE 1923 EDITION

DURING the ten years which have elapsed since the first edition of this book was published, the position of the railways in Great Britain has undergone great changes, which have not yet fully worked themselves out. Three phases of this recent transformation of the British railway system can be distinguished :

1. The first began at midnight on August 4th/5th, 1914, and lasted until August 15th, 1921. This was the war period, during which the principal railways of Great Britain were "controlled" by the Government, which guaranteed to the companies their 1913 net revenue, subject to certain modifications. It was a period of rapidly rising prices, which necessitated the payment of higher wages and increased outlay on coal and materials; the working expenses of the railways increased by leaps and bounds and the deficits to be made good by the government became greater and greater. During the war, cheap fares were abolished and ordinary fares were raised, though probably both

these steps were taken as much with the object of discouraging civilian traffic, as in the hope of securing more revenue. After the Armistice, fares were further raised and rates and other charges were approximately doubled with the object of making railway revenue meet railway expenditure : these readjustments reduced, but did not eliminate, the unfavourable balances which had to be met out of the National Exchequer. The expenditure shown in the *Finance Accounts* under the heading of " Railway Agreements " was £59,800,010 in 1919-20, £38,253,427 in 1920-21, and £72,748,077 in 1921-22, the last sum presumably including the first of two instalments of £30,000,000 payable in liquidation of all claims in connexion with the " de-control " of the railways.

One of the many problems which had to be solved by the Government shortly after the Armistice was what to do with the railways, as the war-time system of " control " could hardly continue indefinitely. The conditions prevailing made it practically impossible to restore the pre-war arrangements. On the other hand, the Government did not appear anxious to nationalize the railways ; perhaps the heavy deficits which were being incurred, in conjunction with the pressing need for economy in State expenditure, had something to do with this decision. In any case, the Government took a middle course, which may be briefly described

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as the State regulation of privately owned monopolies. Both the monopoly element and the state regulation element had existed under pre-war conditions, but they were to be greatly intensified under the new system as established by the Railways Act, 1921.

2. The second phase began on August 16th, 1921, and lasted until December 31st, 1922. It was the interregnum between the war-time system of Government "control" and the new system to be set up under the Railways Act, 1921. During this comparatively short period, the railways were once again under the management of the old companies, which were engaged in the double task of trying to restore their undertakings to a sound financial position, whilst at the same time negotiating the terms of the amalgamations and absorptions which were to come into force with the inauguration of the new system on January 1st, 1923.

3. The third phase began on January 1st, 1923; it is the new system in process of being set up; some time must elapse before it is firmly established. At the moment, therefore, the railways of Great Britain are passing through a transitional stage, several of the most important changes provided for in the Railways Act, 1921, not having yet been put into force. Even when this has been done, it will not be until general economic conditions in the country become more normal that the railway

situation is likely to settle down to a position of comparative stability. In view of the uncertain and fluctuating character of the present railway position, no attempt has been made to deal with it in the text of the book, which remains as in the previous edition. The leading features of the new system must, however, be described :

(i.) The principal railways in Great Britain have been merged into four great groups, viz., (a) the *Southern Railway Co.*, which includes the London and South Western Railway Co., the London, Brighton and South Coast Railway Co., the South Eastern Railway Co., and the London, Chatham and Dover Railway Co.; (b) the *Great Western Railway Co.*, which includes the old Great Western Railway Co., the Barry Railway Co., the Cambrian Railway Co., the Cardiff Railway Co., and the Taff Vale Railway Co.; (c) the *London, Midland and Scottish Railway Co.*, which includes the London and North Western Railway Co., the Midland Railway Co., the Lancashire and Yorkshire Railway Co., the North Staffordshire Railway Co., the Furness Railway Co., the Caledonian Railway Co., the Glasgow and South Western Railway Co. and the Highland Railway Co.; and (d) the *London and North Eastern Railway Co.*, which includes the North Eastern Railway Co., the Great Central Railway Co., the Great Eastern Railway Co., the Great Northern Railway Co., the Hull and Barnsley

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Railway Co., the North British Railway Co., and the Great North of Scotland Railway Co. Roughly, each group has a monopoly in its own area, as is the case with the French railways, though there remains competition where the areas touch, or where they overlap. It is expected that very considerable economies will result from this consolidation of the railway undertakings, and that these, whilst to some extent benefitting the shareholders, will to a much larger extent benefit the general public, by enabling the charges to be reduced. Obviously some time must elapse before the full economies can be effected.

The terms of most of the amalgamations and absorptions were reached by agreement between the companies concerned and merely submitted to the Railways Amalgamation Tribunal for approval. In two cases, however, viz., those of the amalgamation of the North Staffordshire Railway Co., and of the Caledonian Railway Co., with the London, Midland and Scottish Railway Co., the Amalgamation Tribunal which was set up under the Railways Act, 1921, had to settle the terms, as the companies concerned were unable to reach agreement.

(ii.) The principles which should govern the fixing of tolls, rates and charges for the carriage of merchandise by freight and passenger trains and for other services were considered by the

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Rates Advisory Committee, set up under Section 21 of the Ministry of Transport Act, 1919. This Committee, after an inquiry which lasted 40 days, reported that the existing general scheme of railway rates gives satisfaction and that it should be continued. Consequently, no change in this respect is made in the Railways Act, 1921.

(iii.) The classification of merchandise is to be revised. In the first instance, the new classification is to be settled by the Rates Advisory Committee. The Committee in determining the class into which any particular merchandise is to be placed shall (in the words of the Act), in addition to all other relevant circumstances, have regard to value, to the bulk in comparison to weight, to the risk of damage, to the cost of handling and to the saving of cost which may result when merchandise is forwarded in large quantities. Considerable progress with the revision has been made by the Committee, which appears to be taking as a basis a proposed classification of merchandise by goods train divided into 21 classes instead of the old 8 classes. This new scheme was put forward by the railway companies, the object of the additional classes being, so far as possible, to merge exceptional rates into the new standard rates. The draft classification, as determined by the Committee, is now nearly ready for final approval and issue.

(iv.) When the Rates Advisory Committee re-

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ported in December, 1920, they stated that the great increase in the cost of materials and wages during the last few years rendered necessary new adjustments of rates which would involve sweeping away the maximum scales of rates and charges embodied in the Railway Rates and Charges Orders Confirmation Acts, 1891 and 1892, and the limitation on tolls for the use of railways imposed by the Special Acts. They recommended that in future the principle of fixing maximum scales and allowing the railway companies to fix actual rates within those maximum scales should be abandoned, and that the actual standard rates and tolls should be fixed by an independent tribunal. This recommendation was accepted by the Government, and incorporated in the Railways Act, 1921. By sections 30, 31 and 32 of that Act, schedules of standard charges, formed according to the new classification, are to be submitted by the amalgamated companies to the newly-constituted Rates Tribunal, which, after considering objections by interested parties, is finally to settle the schedule of charges and appoint a day when the same shall come into operation. On and after the "appointed day" the companies will be obliged to charge the standard charges, unless they put into force an exceptional rate or exceptional fare granted in accordance with the provisions of the Act. At the end of January, 1923, the Tribunals had not received the proposed schedules from the companies, but certain

preliminary questions of principle had been under discussion.

(v.) On and from the "appointed day," all then existing exceptional rates will cease to operate (subject to certain modifications laid down in the Act), with the exception of those which comply with the three following conditions, viz., (a) that they are not less than 5 nor more than 40 per cent. below the standard rates; (b) that they have been continued by agreement in writing between the railway company and the trader concerned; and (c) that they have actually been applied during 1921 or 1922. As from the same date, the companies will be allowed to grant new exceptional rates provided (a) that they are not less than 5 nor more than 40 per cent. below the standard rates, and (b) that they are reported within fourteen days to the Minister of Transport, who may refer them to the Rates Tribunal for decision. Where an exceptional rate has been fixed by the Tribunal, it cannot be increased or cancelled without the consent of the Tribunal, though it can be reduced by the company, but not to more than 40 per cent. below the standard rate, provided the reduction is reported to the Minister. Where an exceptional rate has been granted without reference to the Tribunal, it can be increased or cancelled by the company, on giving thirty days' notice, subject to the right of any interested party to appeal to the Tribunal. In view of the great increase in the

number of classes under the new classification. it is probable that far less traffic will be carried at exceptional rates than has been the case in the past.

(vi.) The independent Tribunal for the fixing of rates and fares, the establishment of which was recommended by the Rates Advisory Committee. has been set up under Section 20 of the Railways Act, 1921. It consists of three permanent members, one of whom must be a person of experience in commercial affairs, one a person of experience in railway business, and one, the president, an experienced lawyer. There has also been constituted a General Panel of 36 persons, and a Railway Panel of 12 persons. For the purpose of any particular case, one person from each panel may be added to the Tribunal, such additional members exercising all the powers and functions of a permanent member. The decisions of the Tribunals are by a majority of the members, including the additional members.

The main functions of the Railway Tribunal are :—

(a) To complete the general revision of railway charges commenced by the Rates Advisory Committee, by determining in the first instance the standard charges, and in certain cases the exceptional rates, to be charged by the railway companies, and by settling standard terms and conditions of carriage. The charges are to be so fixed in the first instance that with good management they, together with the other sources of revenue, will yield an

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annual net revenue (to be called the standard revenue) equal to the aggregate net revenues of the constituent companies in 1913, together with (approximately) 5 per cent. on the capital expenditure incurred since 1913 or not fully remunerative in 1913.

(b) To review periodically such standard charges and exceptional rates. These are to be readjusted periodically (i) by raising the charges to provide the standard revenue, with an allowance for additional capital, if there is found to be a deficiency which is likely to continue, and (ii) by lowering the charges so as to reduce the subsequent excess by 80 per cent. if there is found to be an excess which is likely to continue. If at one revision an excess is found, the basis for a future revision, in the case of a further excess, is to be the standard revenue, with an allowance for additional capital, *plus* 20 per cent. of the previous excess, which is to be known as the "increased standard." Such "increased standard" may be increased as the result of subsequent excesses.

(c) To determine questions relating to railway charges brought before the court both before and after the "appointed day." Twelve such applications, mostly asking for a reduction of particular rates, were brought before the Tribunal during 1922.

The existing powers of the Railway and Canal Commission, in so far as they are exercisable by the Rates Tribunal under the Railways Act, 1921, will

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cease to be exercisable by that Commission, as from the "appointed day."

For more details concerning the Railways Act, 1921, the reader is advised to consult the Act itself and the first Annual Report of the Railway Rates Tribunal for 1922.

Reference must be made to one other development which has considerably affected the position of the railways in Great Britain during the past ten years, viz., the great extension of road transport by motor. This has become particularly acute since the Armistice, with the release of vast numbers of motor vehicles from the army and the removal of the petrol restrictions. Much motoring is indulged in for its own sake, so that a good many of the people who may be seen motoring on a fine afternoon cannot be regarded as potential passengers who have been lost to the railway companies. The same is true of motorists who now use cars instead of carriages and horses. On the other hand, a great many people who have to travel for business reasons, or who wish to reach particular destinations for pleasure purposes, do avail themselves of charabancs, motor buses, motor cars and motor cycles, so that the railway companies must lose a large amount of traffic. In the case of the transport of goods by motor, some represents traffic formerly conveyed by horse-drawn vehicles, but much has been captured from the rail-

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ways. In some cases it is the manufacturer or wholesaler who maintains his own fleet of vans ; in others, it is a firm of carriers which has established itself in the motor transport business. The possibility of delivering goods from consignor to consignee without transshipment or intermediate handling enables considerable economies to be effected in time and packing. It is high class, rather than low class traffic, and small, rather than big consignments which are concerned, though it is obvious that a very large number of small consignments of high class goods lost to the railway companies is a very serious matter to these companies. In the case of both passengers and goods it is short distance rather than long distance traffic which has been diverted from rail to road, though the long distance road traffic is by no means negligible.

Motor transport has made great headway, partly because of the real facilities it offers in certain cases both in respect of promptness of delivery and saving in packing, and partly because of its lower cost. This lower cost is probably due largely, if not entirely, to the fact that the motor-owner does not bear his full share of the expense of providing and maintaining the roads he uses. Motor taxation meets some of this cost, but the bulk of it falls upon the local ratepayer and the general taxpayer. People who travel by motor or send their goods by motor are really being subsidised by the local and national exchequers.

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Thus, in so far as the railway companies are large ratepayers, they are actually contributing substantial amounts towards the subsidies granted to their competitors. As under the Railways Act, 1921, railway charges are to be fixed so as to yield to the companies their 1913 net revenues, together with an allowance for additional capital expenditure, it may perhaps not unreasonably be urged, that it does not matter very much to the railway companies. They will recoup themselves by higher charges, and the public, which travels by railway and which uses goods transported by rail, will have to bear the burden. Whether justice, however, is thus meted out to all the parties concerned is somewhat problematical.

DOUGLAS KNOOP.

SHEFFIELD, *July*, 1923.

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CHAPTER X.

THE DETERMINATION OF PRICES UNDER COMPETITIVE CONDITIONS

Definition of value. We now approach what may be described as the central problem of economics, the determination of the value or price of a commodity or service. Value means power in exchange, and value expressed in terms of money is price. In common parlance "value" is not used exclusively in the sense in which it is defined here. A man may speak of a valuable picture, and mean either that the possession of it gives him great satisfaction, as it happens to be the portrait of an ancestor, or that it is worth a lot of money. In the one case, he contemplates the picture alone and expresses a personal opinion about it; in the other, he compares it with a second article—money. Formerly, economists used the expressions "value in use" or "intrinsic value," and "value in exchange" to distinguish between two kinds of "value"; to-day, they speak of "utility" where "value in use" is implied, and restrict the word "value" to one meaning—power in exchange. The picture