Railway accounts and finance, an exposition of the principles and practice of railway accounting in all its branches

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RAILWAY ACCOUNTS
AND
FINANCE
AN EXPOSITION OF THE PRINCIPLES AND
PRACTICE OF RAILWAY ACCOUNTING
IN ALL ITS BRANCHES

BY

J. ALFRED FISHER
JOINT MANAGING DIRECTOR OF BELL'S UNITED ASBESTOS COMPANY,
LIMITED, LONDON; AND FORMERLY FOR MANY YEARS
CONNECTED WITH ONE OF THE PRINCIPAL
ENGLISH RAILWAY COMPANIES

FOURTH EDITION

UNIVERSITY OF CALIFORNIA

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TO THE

DIRECTORS AND OFFICERS

OF

THE RAILWAYS OF THE UNITED KINGDOM

THIS VOLUME

IS

RESPECTFULLY DEDICATED

BY

THE AUTHOR

261492
PREFACE TO THIRD EDITION.

It has not been thought necessary to make many alterations in the text of this edition. Variations in form and detail, connected with the compilation of statistical and other returns, have been made since the publication of the Second Edition; but the principles of Railway Accountancy involved in recording and controlling expenditure and receipts, and in effecting periodical settlements between companies through the Railway Clearing House and otherwise, remain unaltered.

These principles have now, however, a far wider application than formerly. This is due not only to natural expansion and development, but to the larger acquisition by Railway Companies of subsidiary services such as steamboats, harbours, docks, highway motors, hotels, &c., and to requirements in consequence of closer co-operation between rival companies.

One of the great essentials of any system of Railway Accounts is its adaptability to the varied and ever-extending operations which expansion, rivalry, and co-operation are continuously and increasingly bringing about.

Without perfect organisation, and a system of accounts both sound in principle and elastic in working, arrangements for the interchange of traffic, through bookings of passengers and merchandise, pooling and equitable division of receipts and apportionment of expenditure would be impossible, because, short of complete amalgamation, they would lead to hopeless confusion and litigation.
The chief alterations in detail that are likely to take place in the near future arise out of the report and recommendations of the Committee appointed by the Board of Trade in the year 1906, "To consider and report what changes, if any, are desirable in the form and scope of the Accounts and Statistical Returns (Capital, Traffic, Receipts, and Expenditure) rendered by Railway Companies under the Railway Regulation Acts."

The results of this enquiry were given in a Report to the President of the Board of Trade on the 25th May 1909, and the principal changes recommended by the Committee have been embodied in a Bill to amend the law on the subject.

This Bill (a copy of which, together with the new forms prescribed, will be found in the Appendix) has not yet received the sanction of Parliament, but in all probability it will shortly do so without important modification.

It provides:—

(1) That the accounts and returns of Railway Companies shall in future be made up yearly. Companies will no longer be under an obligation to submit accounts half yearly (except where half-yearly accounts are required in connection with any guarantee of dividend under any existing statutory provisions), nor to hold general meetings of shareholders more than once a year, and Directors may, "if it appears to them that the profits are sufficient, declare and pay an interim dividend for the first half of any year, notwithstanding that the accounts are not audited for the half-year, and that a statement of accounts and balance-sheet for the half-year is not submitted to the shareholders";

(2) That the accounts shall be prepared in accordance with the forms set out in the schedule to the Bill;

(3) That they shall be signed by the officer responsible for their correctness and by the Chairman or Deputy Chairman of the Company;

(4) That they shall be made up to the 31st December in each year, "or such other day as the Board of Trade may fix
in the case of any Company or class of Companies to meet the special circumstances of that Company or class of Companies."

The Bill further provides that six copies of the annual accounts and returns shall be sent to the Board of Trade, and a copy to any shareholder or debenture-holder of the Company "who applies for" the same. There is no doubt that, as formerly, a printed copy of the accounts will be sent by post to every shareholder on the registers.

Other clauses provide for the filing by the "Registrar of Companies" of particulars of the share and loan capital, together with a copy of the general balance-sheet of each Company, and authorise inspection thereof by any person, who may also require a copy, or extract therefrom, on payment of merely nominal fees. The existing obligation, under the Railway Companies Securities Act, 1866, to file accounts relating to loan capital is abolished.

Powers are conferred upon the Board of Trade, subject to certain provisions for the protection of the Companies, to alter or add to the forms of account prescribed in the schedule to the Bill, and, on the application of any Company, the Board of Trade is empowered "to make, as respects that Company, any special variation in the form of the accounts and returns ... which appears to the Board to be required for the purpose of adapting the form to the particular circumstances of that Company."

Clause 5 provides that—

"Nothing in this Act shall affect or limit any obligations imposed upon a Railway Company, or any rights or powers conferred upon the Board of Trade by section 9 of the Regulation of Railways Act, 1871, as amended by section 32 of the Railway and Canal Traffic Act, 1888, but the returns required of a Railway Company by those sections shall only be made at the instance of the Board of Trade, and at such times as the Board of Trade may direct."
Light railways already exempted under any special Act from
the operation of sections 9 and 10 of the Regulation of Railways
Act, 1871, will be exempt from the obligation "to prepare, submit,
and forward accounts and returns under this Act; and the Board
of Trade may exempt any Company or authority from that
obligation if they are satisfied that the business of a Railway
Company is merely subsidiary to the main business carried on
by the Company or authority and that the Company or authority
are under an obligation to publish their accounts in a form
prescribed by the Board of Trade or to present them to
Parliament."

TON AND PASSENGER MILE STATISTICS.

The amended forms of account prescribed in the Bill before
referred to are the result of exhaustive enquiry by a Committee
exceptionally well qualified to deal with a complicated subject.

It is no secret, however, that the view of several members
of the Committee that the adoption and publication of what
are known as Ton and Passenger Mile Statistics would be of
real and practical value by enabling those responsible for the
management of our railways to obtain a better grip of earnings
and expenditure, and that this would result in increased efficiency
and economy, was intended to be, and was, persistently main-
tained. The report says: "At an early stage of our deliberations
it became evident that the usefulness of Ton Mile and Passenger
Mile Statistics was a highly controversial question."

These terms are defined in the report as a "system of
statistics based upon ton mileage and passenger mileage, taking
as its foundation the principle of combining in a comprehensive
figure the two factors of weight or number and of distance; the
fundamental units (the ton mile and the passenger mile) being
respectively one ton carried one mile and one passenger carried
one mile,” and it was further stated that from such a system might be deduced—

“(1) The average train load of goods and of passengers, obtained by dividing the ton mileage and the passenger mileage respectively by the train mileage.

(2) The average wagon load and the average carriage load, obtained by dividing the ton mileage by the wagon mileage and the passenger mileage by the carriage mileage.

(3) Ton miles per engine hour.

(4) The average length of haul for goods and passengers respectively, obtained by dividing the ton mileage and the passenger mileage by the total tonnage and total number of passengers conveyed.

(5) The average receipts per ton per mile and per passenger per mile, obtained by dividing the goods receipts by the ton mileage and the passenger receipts by the passenger mileage.

(6) The average density of traffic per mile of road or per mile of track, obtained by dividing the ton mileage and passenger mileage by the length of road or by the length of track.”

To those who may not be familiar with railway technicalities, the following examples may serve to illustrate what is meant by “train mileage,” “ton miles,” &c.

EXAMPLE NO. 1. (“TON MILE” STATISTICS.)

Let us suppose that fifteen hundred tons of merchandise and minerals have been conveyed a distance of thirty miles (this being assumed to be the total length of the road) in ten trains, each composed of twenty-five wagons, at a total charge of £135.

Therefore:

| 10 (trains) | × 30 (miles) | = 300 | = “Goods train mileage” |
| 1,500 (tons) | × 30 (miles) | =45,000 | = “Ton miles” |
| 45,000 (ton miles) | ÷ 300 (train miles) | = 150 (tons) | = “Average train load” |
| 25 (wagons) | × 300 (train miles) | = 7,500 | = “Wagon miles” |
| 45,000 (ton miles) | ÷ 7,500 (wagon miles) | = 6 (tons) | = “Average wagon load” |
| 45,000 (ton miles) | ÷ 1,500 (tons conveyed) | = 30 (miles) | = “Average length of haul” |

£135 (total receipts) ÷ 45,000 (ton miles) = 0.02 pence = “Average receipt per ton per mile”

45,000 (ton miles) ÷ 30 (miles of road) = 1,500 | = “Density of traffic”
The "ton miles per engine hour" are ascertained by dividing the ton miles by the aggregate number of hours the engines were employed, say fifty hours.

Therefore:

\[ 45,000 \text{ (ton miles)} \div 50 \text{ (engine hours)} = 900 = "\text{Ton miles per engine hour}."

**Example No. 2. ("Passenger Mile" Statistics.)**

We will assume that one thousand passengers are carried a distance of thirty miles (the total length of the railway) in eight trains of six carriages each, at a total charge of £100.

The method of ascertaining the "passenger mileage" is similar to that described above, viz.:

<table>
<thead>
<tr>
<th>Description</th>
<th>Calculation</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (trains)</td>
<td>( \times ) 30 (miles)</td>
<td>240</td>
</tr>
<tr>
<td>1,000 (passengers)</td>
<td>( \times ) 30 (miles)</td>
<td>30,000</td>
</tr>
<tr>
<td>30,000 (passenger miles)</td>
<td>( \div ) 240 (train miles)</td>
<td>125 passengers = &quot;Average train load&quot;</td>
</tr>
<tr>
<td>6 (carriages)</td>
<td>( \times ) 240 (train miles)</td>
<td>1,440</td>
</tr>
<tr>
<td>30,000 (passenger miles)</td>
<td>( \div ) 1,440 (carriage miles)</td>
<td>20.8</td>
</tr>
<tr>
<td>30,000 (passenger miles)</td>
<td>( \div ) 1,000 (passengers)</td>
<td>30 miles</td>
</tr>
<tr>
<td>£100 (total receipts)</td>
<td>( \div ) 30,000 (passenger miles)</td>
<td>0.8d</td>
</tr>
<tr>
<td>30,000 (passenger miles)</td>
<td>( \div ) 30 (miles of road)</td>
<td>1,000 = &quot;Density of traffic&quot;</td>
</tr>
</tbody>
</table>

These are the simplest possible examples, and omit numerous important factors which materially affect results. The process of ascertaining the desired quotients becomes immeasurably longer, more complicated, and unreliable when the following points (not exhaustive, but sufficiently illustrative) are considered:

1. Nearly thirteen hundred million passengers and five hundred million tons of merchandise and minerals are carried in trains running a total distance of four hundred and twenty million miles on the railways of the United Kingdom yearly.

2. Merchandise traffic consists of some seven thousand descriptions or groups, and is conveyed between several