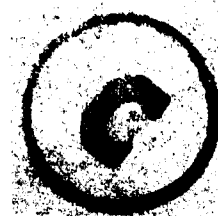


Railway Accounts and Finance.

Vol 7. No. 25. Part II.

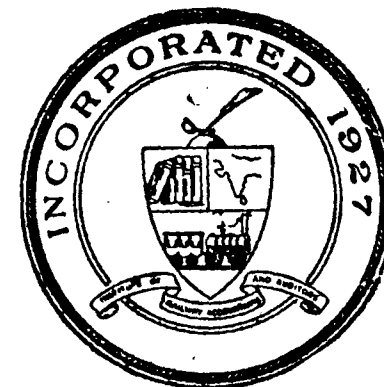
1941.





[Vol. VII]

RAILWAY ACCOUNTS & FINANCE



THE QUARTERLY JOURNAL OF
The Institute of Railway Accountants
and Auditors

I. <i>Special Articles—</i>	
1. RATE REGISTERS, HOW THEY CAN HELP MECHANISATION, J. H. BAVIN, <i>Chief Auditor, A. B. Railway</i> ..	65
2. LOCOMOTIVE REPAIRS IN THE WORKSHOPS AND THE METHOD OF THEIR COSTING, M. S. MONGA, <i>E. I. Railway</i> ..	73
II. <i>Reviews</i> ..	78
III. <i>Official Papers</i> ..	83
LOCOMOTIVE MANUFACTURE IN INDIA ..	83
SOUTH AFRICAN RAILWAYS AND HARBOURS ..	85
IV. <i>Notes and Memoranda</i> ..	87
SIR ANDREW CLOW ON STATE-SOCIALISM ON RAILWAYS ..	91
EMERGENCY CONTROL OF BRITISH RAILWAYS ..	93
UNIT REVENUES AND EXPENSES ON RAILWAY SERVICES ..	96
MOTIVES FOR ROLLING STOCK PURCHASES ..	98
EFFECT OF HEAVIER RAIL ON LABOUR ..	100
V. <i>Institute News</i> ..	101
VI. <i>Railway Statistics</i> ..	106
VII. <i>Current Periodicals</i> ..	112

CALCUTTA

Price Four Rupees Net

Annual Subscription Rs. 12 net

ALL RIGHTS RESERVED

JL
X415:8C m2, n4,
n41
169507

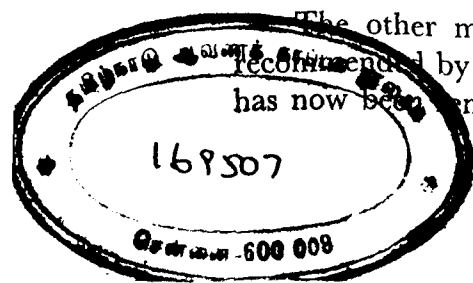
mechanical sorting and printing, is more suited to our traffic accounts and statistical work than any other type of machine. But in this paragraph Sir A. Lowes Dickinson has shown his preference for Hollerith machines for, he states, the punched cards can be mechanically checked, whereas with the Powers a visual check is necessary. This is not the case to-day; in fact the pendulum has swung the other way, in that the Hollerith verifying machine cannot check spaces nor is it able to detect a card which has two perforations in one column where there should be only one. The Powers machine does both.

However, as to mechanical verification I do not attach much importance since I have found, on investigation in several offices, that visual verification from machine printed slips is preferred. The advantages claimed from a visual verification between a print of the punched cards and the original documents are that it is quicker, and that a printed record is obtained of the work at each stage. I use both methods in my office, and was surprised to find that in a large railway office in England, where the operators have attained much greater speeds than in this country, verifying machines are not used at all. The Clearing Accounts Office in Delhi itself dropped the use of Hollerith verifying machines as they found they were not reliable.

The Clearing Accounts Office was the most obvious place to install the punched card type of machine, since a greater volume of work is handled there than in any other traffic accounts office in India. It is a sad omen for those of us who advocate an extended use of machines that they have been turned out of there in favour of the head and hand method. However, the experience gained in that Office should be invaluable, and let us hope that use is made of it before it falls into oblivion.

For most traffic accounts offices the Hollerith machines are too big and too expensive to run to be accepted for general use. (I believe this was the prime cause of their downfall in the Clearing Accounts Office even.) Further more they cannot be purchased and are only hired to the user at standard rates. This in itself increases running costs.

The other machine of the punched card type which was recommended by Sir A. Lowes Dickinson (his objection to which has now been removed) is the Powers machine. Now this firm,



32
X415782 m2, 1041
241

Messrs. Powers Samas Accounting Machines, Ltd., hire or sell their machines. They make them in three sizes—the Powers Samas, Powers Four, and Powers One. The Samas has a card capacity of 45 columns, the Four 36 columns, and the One 21 columns. The Four has all the capabilities of the Samas machines, but the One is limited to two accumulative registers and no subtract mechanism. There are, however, several ingenious ways of getting over the limitations of the One, which is an extremely economical machine to run; it is, all the same, generally speaking, too small for traffic audit requirements.

As the result of my investigations I am convinced that the Four is the machine best suited to our needs, though there is no reason why some should not use the Samas or the Hollerith while others use the Four, so long as there is collaboration in the preparation and the use of codes. To purchase and to run, the Four is by a wide margin more economical than its big brothers.

SYSTEM.

Our present system in India of goods traffic accountal is based on the documents of the receiving station. This, owing to large distances, results in delays in bringing traffic into account in our Division sheets. If we try to centralize the place where the accountal is to be made the delay will be accentuated owing to the time taken for documents to travel from the stations to the clearing house. Two points therefore are worthy of consideration :—(i) Could we not improve our methods by basing our accounts on the forwarding stations documents? (ii) Could we not decentralise the Clearing Accounts Office or preferably mechanise each individual railway?

METHOD OF ACCOUNTAL.

As regards the first. A move has already been made toward an efficient method of supplying forwarding stations with correct rates by the introduction of the rate registers, referred to early in this note. Whether the advantage to be gained from such registers by Accounts Offices has been fully appreciated, I am doubtful. The introduction of these registers is not going forward with the speed that was hoped for—in fact several railways still do not support this very essential reform. On the Assam-Bengal Railway we have tackled the problem in quite a new way; it

has met with unqualified success and has proved to be inexpensive compared with the advantages to be gained from it.

To obtain the full advantage from these rate registers the information which should be shown for each rate is—

Commodity (Code No.)	Route (Code No.)	Station from (Code No.)
Station to (Code No.)		
Rate per maund for each Railway. (code No. of each railway)		Total rate per maund.
Conditions.		

It will be realised that if the code numbers are shown in these registers the station staff will be in a position to make out an invoice completely from the one reference they have to turn up in their Rate Register, including the filling in of code numbers. Their calculations will be limited to the simple multiplication of the rates shown by the weight.

Now assuming that a system of rate registers as visualised exists and stations are supplied with correct rates prepared by experts for the traffic they handle, and are not left with tariffs, rate circulars, mileage tables, and other publications to wade through in order to ascertain a rate, there is every reason to assume that the rates, conditions, and proportions, shown on invoices will be correct. Errors in calculation there will be, but the check of these presents no difficulty. These rate registers, supplied to stations by the experts, can also be supplied to the Accounts Office. The Accounts Office, so equipped, will find invoice checking a simple and speedy matter if they check the outward invoices of their own railway instead of the inward invoices issued by other railways.

I therefore advocate, with the introduction of rate registers (and this is an essential step if we are to progress) that the check and account of goods traffic should be made on the forwarded documents, which should be sent to accounts offices daily by large stations and periodically by others, and thereby secure earlier account of our traffic and simplify check.

LOCATION OF MACHINES.

As regards the second point. Sir A. Lowes Dickinson, while thoroughly approving of the central Clearing House, advocated

that at very large stations branch accounts offices should be opened to check the accounts and prepare the stations abstracts and summaries and furnish the stations with figures for their balance sheets. He further recommended the opening of other centres to compile earnings of groups of stations, where the work was of sufficient volume to justify the use of Clearing House machine methods. (Chapter VIII, paragraphs 178 to 181.)

The volume of work is an important consideration and it is with this in view that I express the opinion that the Powers Four is the machine best suited to our needs. It is big enough to do all the work we require of it, yet small enough to merit consideration for installation in most traffic accounts offices. Should each railway be able to have its own machine or machines, it would then be possible to give effect to the recommendation that the bigger stations should have their abstracts and summaries prepared for them and be supplied with figures for their balance sheets, since it would be possible to do this work on the machines.

I therefore urge that each traffic accounts office should be equipped with its own machines if the volume of work justifies it, and that where it is not justified they should at any rate be supplied with punching units and verifying machines, sending their cards to the nearest tabulating office for preparation and analysis of their accounts. With the accuracy that should be obtained with the introduction of rate registers, I do not consider any advantage would be obtained by following the further suggestion that large stations should have accounts clerks attached to them to check invoices on the spot.

So far I have touched only on accounts, but since, with these machines, the statistical work can also be done from the punched cards, and in some small traffic accounts offices the machines could not be employed fully on accounts, we must also consider what can be done in this direction.

In spite of the Hollerith machines in the Clearing Accounts Office, Railways party to that office also had Hollerith or Powers machines working quite independently from traffic accounts for traffic statistics. The foreign traffic of such railways was dealt with in the Accounts Office, who prepared statements or punched cards which were sent to the railways' statistical offices. Such

a procedure could not, to my mind, produce the best machine utilisation or produce the earliest possible results. Now if you punch a copy of every invoice, that punched card can serve the purposes of both accounts and statistics and more conveniently so, if the machines for this work are localised at the same place. If the work is such that more than one battery of machines is necessary to handle both jobs, then at the time of punching the cards a duplicate card for statistical purposes can be punched at the same time, with almost no additional labour, if automatic key punches are used. Even if you have more than one battery of machines, they can be better utilised, and rush periods can be eased, if the batteries are localised on each railway. On a small railway where the traffic accounts could utilise only a small portion of the time of a Powers Four, there would be no difficulty in utilising the spare time to the full, on statistics. This could not be done if accounts and statistics are dealt with at centres many miles apart.

ECONOMY IN STATISTICS.

As regards statistics, once cards have been punched for the initial documents, any required analysis can be made by passing the cards through the machines. This opens up possibilities of saving a large wastage of cards, machine time, and labour, by avoiding overlapping by contiguous railways. Each railway analyses its inward and outward traffic by various junctions. Since what is the outward traffic of one railway is the inward traffic of another it should be a simple matter, if all railways analyse their outward traffic, for each railway to supply the contiguous railway with an analysis of the outward traffic to that railway by each junction. For the contiguous railway such analysis would be of its inward traffic, and the separate analysis now made by that railway would not be necessary. Before, however, this can be attempted, we have got to devise a system of codes acceptable to all railways, and a design of card to meet the needs of all. That this can be done, I am convinced, provided railways are prepared to co-operate in the matter. But it is important that it is done soon, since as years go by individual railways are building up their own system of codes with which their staff are becoming familiar, and in time (if not already) they will be loathe to upset an established system.

CODES.

As to the use of codes, the criticism of many is that you cannot rely on the coding being done by the station staff. If this is the case then the cost of staff required in the accounts office to code the initial documents and to check the codes will offset, by a large degree, the economies gained by the use of the machines. I, however, do not agree with this criticism, and those who hold it, will, I think, find a solution in the Rate Registers referred to early in this note.

On the Assam-Bengal Railway the code numbers required are shown in the Rate Registers. If common codes are devised all code numbers can be so shown, as detailed in my paragraph dealing with these registers under "Method of Accountal." Surely I am not expecting too much when I say that station staff can be relied on to copy these code numbers on to the invoices? Further more, the invoice checkers, checking the invoices from the Rate Registers, will have no difficulty in checking the code numbers at the same time as they check the rates. Therefore coding staff and code checkers should be quite unnecessary.

Stations even now use code letters for the designation of stations extensively, and make no errors in them. It is only a matter of usage, and in time it will become as easy for them to use code numbers as it is to use code letters. I would go further and suggest that code numbers should eventually be adopted in place of code letters for all purposes.

SUMMARY.

To sum up, my suggestions are :—

1. That the punched card type of machine should be adopted as standard for the mechanisation of traffic accounts and statistical offices ;
2. That each railway should have its own machines when the traffic is large enough to justify this ; small railways being grouped ;
3. That accountal of foreign traffic shall be made on outward traffic instead of the inward traffic, by the forwarding railway ;
4. That standard codes shall be prepared to designate railways, routes, junctions, stations, and commodities ;
5. That Rate Registers as visualised in the Indian Railway Conference Association resolution No. 7 of the Spring Conference, 1938, in

which all codes required shall be shown, should be prepared and supplied to stations at an early date; and

6. That each railway should analyse its outward traffic only, and supply such analysis to the intermediate and receiving railways to serve as their cross and inward traffic analysis.

The benefits to be derived from such a scheme are, in my estimation :—

1. The earlier accountal of traffic and publication of statistics ;
2. A reduction in work at stations ;
3. The simplification of work in traffic accounts offices and the avoidance of the duplication of work in statistical offices ;
4. Economy in labour, machine time, and in expenses ;
5. Greater efficiency.

J. H. BAVIN.

LOCOMOTIVE REPAIRS IN WORKSHOPS AND THE METHOD OF THEIR COSTING.¹

An engine is subjected to two kinds of repairs— (1) running repairs in the running sheds existing at various points of a Railway system and (2) Workshop repairs when it involves extensive work which cannot be safely done in a running shed. It is proposed to examine in this paper the position of workshop repairs with a view to see how they are controlled and accounted for.

2. There are three kinds of repairs which are carried out in a workshop, firstly periodical overhauls which involve thorough repairs of engine, boiler and tender in order to make a locomotive fit to run a prescribed mileage or period to the next such overhaul. On the E. I. Railway the following limits are observed to give an engine the next overhaul:—

Service.	Mileage.	Period.
Mail and Express Passenger	120,000	3 years
Goods	75,000	"
Ballast	75,000	"
Shunting	40,000	"

3. Lately these limits have been revised to make up for a larger mileage and period of life. These are ordinary limits but when an engine has been kept out of service for sometime the limit of three years is extended by the stabled period.

4. In between two periodical overhauls, an engine is given what is called Intermediate repairs. These usually involve semi-heavy repairs and like the P. O. undertaken after an engine has done a stipulated mileage or has completed 2 years after the last P. O. The following items usually receive attention in the shops:—

1. Axle Boxes, Engine and Tender.
2. Axle box bearing, Engine and Tender.
3. Axle Box springs, Engine and Tender.
4. Wheels, Engine and Tender.
5. Axle box horn wedges and bolts.

¹ Paper presented for the Conference.

6. Side rod bushes.
7. Connecting rod big end and little end.
8. Slide bars.
9. Cross head and slipper blocks.
10. Piston rods, heads and rings.
11. Port faces and rubbing plates.
12. Valve setting.
13. Piston valves and bushes.
14. Cylinder bolts.
15. Engine and Tender drag boxes.
16. Smoke box bolts and seams.
17. Brake gear (Engine and Tender).
18. Engines to be weighed and adjusted.
19. Anti-vacuum valves.
20. Bye Pass valves.
21. Drifting valves.

5. Thirdly the engines undergo special repairs at the request of the Divisional Superintendents. These are necessary where an engine has been damaged in an accident or has shown a particular defect or weakness and involves the repair or replacement of parts which cannot be done in the running sheds. Its cost is borne by the Divisional budget whereas the expenditure on P. O. and Inter overhauls is finally charged off against the workshop budget.

6. My next object is to explain how this expenditure is incurred and how it is accounted for. An annual programme of the periodical and Inter-overhauls is fixed in advance by the Mechanical Department in consultation with the Operating Department, on the basis of the mileage and life statistics of the Locomotives. The engines are released from the line in regular flow and are sent to the workshops for repairs. The extent of special repairs is a very intermediate factor and cannot be fixed in advance.

7. The method of carrying out repairs on work orders is a common feature of all the workshops, but there is a good deal of diversity in the internal organisation. In some workshops separate standing work orders are allotted for P. O., Inter and Special repairs respectively, which in turn are sub-divided into sub-work orders to book the expenditure by different classes. In certain others, individual work orders are issued to find out the repair cost for each engine. Yet in certain others, only three work

orders are issued to allocate the costs on engines, boilers and tenders respectively and all classes of repairs whether P. O., Inter or Special are carried out on these work orders and the costs distributed on the basis of what is known as "point system of accounting."

8. Of these, the first two methods are simple enough and need no elaboration. The last named method is a bit comprehensive. The object of this system is to do away with the necessity of issuing so many work orders to arrive at the costs of individual engines. As explained above, only 3 work orders are issued—(1) for engines, (2) for boilers and (3) for tenders. The entire expenditure incurred in the various shops in the shape of labour and stores is allocated to these work orders. Each locomotive comprising of an Engine, a tender and a boiler is taken to be a composite unit and 100 points are allotted to the whole, of which the maximum allowance for the engine and tender portion is 60% and the boiler 40%. Separate tables 'A' and 'B' have been worked out for Engine (including tender) and boiler respectively. In each table different number of points have been allotted to the parts repaired, reconditioned or replaced. The allocation of points to the various parts has a relation to the costs incurred on them. The bookings in these two tables are made by the Erecting and Boiler Shops respectively and then forwarded to the Workshop Accounts Office in the 1st week of the following month. As it would be anomalous to book the same number of points against different classes of engines although the cost varied, the number of points given by the shop against an engine or boiler is multiplied by the tractive effort of the engine and divided by the average tractive effort which is 20,000 as fixed by the Railway Board. This process converts the points booked to the standard points. The following concrete example will illustrate the point more clearly :

X. E. Class Engine No. 1995 was given 50 points by the shop and the tractive effort of this class is 48086, Therefore

$$\frac{50 \times 48086}{20,000} = 120.2 \text{ are taken to the standard points for that engine.}$$

9. Having converted all these points into the standard points (for engines and boilers separately) the Accounts Office

starts to distribute costs. To the costs as collected under the work orders for engines and tenders is added the percentage of shop oncost and the general oncost and then the total divided by the total number of points to arrive at the cost per standard engine point. Similarly the standard boiler points are worked out and the costs distributed to the various boilers whether for P. O., Inter or Special repairs. A very vigilant watch is maintained to see that the cost per standard P. O. (*i.e.*, the cost of 60 points on the engine and 40 on boiler) does not exceed the limit usually between Rs. 10,000 to Rs. 12,000 laid down by the Railway Board.

10. Seemingly this process of costing is a very attractive one due to its great simplicity, but this too suffers from certain defects which practically take away all the virtue it has. The distribution of costs in tables 'A' and 'B' has a definite relation to the costs of the parts repaired or replaced. For instance a new cylinder is allowed 6 points and in order that a new piston is given two points it is necessary that the cost of the piston should be 1/3rd of the cylinder. In actual practice these costs keep varying from period to period and it is very necessary that the relationship of points must constantly be kept changing if these are to represent the true values. It is, however, the practical experience that the points once tabled are seldom changed and the usual tendency is to follow the original fixations done some years back.

This inevitably leads to wrong costs for different classes of locomotives and thus deprives the management of a very important index to judge which class is really more economic in the long run.

11. Another drawback under this system is that although a considerable amount of work on some engines is done in a month, the full points are booked in a subsequent month in which the engines are actually sent out. This, therefore, results in higher costs in some months and lower costs in others unless the work in progress is always constant at the end of each month. It is, however, a very indeterminate factor and an improvement is called for in this direction. It is desirable that points should be booked even on partly finished engines and taken into relevant month's account to determine the standard costs. If the manage-

ment desires that repair costs should be brought under the final head B. 2120 only in the month in which the locomotives are placed on the line, the proportionate repair cost on these partly finished engines may be temporarily kept under the Suspense Account and charged off later when the locomotives are actually despatched from the workshop. Otherwise it would be in conformity with the strict principles of accounting to book the repair expenditure to the final head (*i.e.* B. 2120) in the month in which it is incurred.

12. In the opinion of the author of this paper, the only reliable method of getting out true cost is to issue separate work orders for individual engines whether on P. O., Inter or Special repairs.

REVIEWS.

A History of Transportation in Canada: By G. P. Glazebrook (Toronto: The Ryerson Press. Pp. xxv + 475, Five maps. Price \$5-50.)

"The present volume," states Professor Glazebrook in his preface, "represents an attempt to trace the story of transportation through the whole range of the history of Canada, describing the methods, and relating them to the more general theme of the rise of Canadian civilization." The economic development of Canada has been largely one of the progress of transportation. The present work, therefore, presents less the technical aspects of the growth of transportation than the vital influence exerted by them on the development of the Dominion itself. The result has been a vivid account, recording the pulsations of the economic life of a rapidly advancing nation. Professor Glazebrook has, therefore, given a narrative of unusual interest, on the reactions of economic needs on transport enterprise and *vice versa*.

The work falls into two parts. In Part I, entitled "Continental Strategy," Professor Glazebrook deals with the earlier period of the history of transportation in Canada, prior to the Confederation. He starts with the problems of the 17th century under the French regime, when fur trade was the motive and the birch canoe was the principal means of transport. The rivalry in the fur trade between the British and the French led to the exploitation of transport facilities to offer competitive advantages. Professor Glazebrook describes the advent of steam boats and the canals, the construction and development of roads in the old Provinces, down to the year 1867. The first experiments at railway construction derived encouragement from the hope of diverting the traffic of the United States, but there were difficulties in the way of a poor and under populated colony. Joseph Howe hoped for a trunk railway subsidised, if not owned, by the State. Thanks to the English capital and more or less English control, personnel and methods, the railway policy before the Confederation had assumed continental scope.

The author next turns in Part II to the period following the Confederation, during which the Canadian national economy, the project, construction and effects of the Pacific Railway are examined in full detail. With the commencement of the present century came the expenditure of other transcontinental lines, which were later to cost the country dear and to form one of the important contributory causes to the Canadian Railway problem. After reviewing the question of nationalisation of the Grand Trunk and the Drayton-Acworth Commission's recommendations, the formation of the Canadian National system and its subsequent career are described. In Chapter XII, Professor Glazebrook discusses with considerable ability the railway situation during and after the depression. The responsibility for what has not proved to be financial miscalculations should not, in his judgment, be laid solely at the doors of the railways. As he states:

"Faster and more frequent passenger trains, new outlets for grain, branch lines into progressing districts—all these were called for by the public, contractors and the Companies themselves. In years when factories were built for an imaginary future demand, when precarious fortunes were based on watered stock, when municipal bodies mortgaged the future, and when hardly a voice was raised against senseless gambling throughout the community—at such a time it was not to be expected that railways, whose profits depended on a capacity to undertake the business that was offered, should alone have adopted a wise and conservative policy" (p. 381).

These comments strike a sympathetic chord in the ear of the reader in India, who would recall the vast expenditures during the same period, which have failed to justify themselves.

The changes in the controlling authority since the Duff Commission report has once again brought to the fore the problem of State management. The author points out the inherent difficulties of reconciling parliamentary control and insulation from political interference. "A search has been earnestly made," he observes "for a passage between the Scylla of political control and the Charybdis of an irresponsible executive. If after the necessary years of experiment, Canadian democracy cannot trust its representative either to direct or to appoint those who should direct a public enterprise, the future of public ownership is doubtful indeed" (p. 415).

In the last two chapters there is a brief account of other forms of transport, namely, transport by waterways, electricity, motor vehicles, and air.

The work appears in the series of publications in the division of Economics and History of the Carnegie Endowment for International Peace. An introduction is contributed by Mr. H. A. Innis. There is a bibliographical note and an index.

British Railways To-day : By K. G. Fenelon (London : Messrs. Thomas Nelson & Sons, Ltd. xii + 187, Price 2/6).

This book on British Railways appears in the stimulating series of discussion books brought out by Messrs. Nelson & Sons, Ltd., under the editorship of Dr. Richard Wilson and A. J. J. Radcliffe. The series is remarkable for the variety of the subjects and problems discussed and the subject of railways could not be better dealt with than by one of the reputation of Dr. Fenelon. The British Railways do present several problems urging settlement. The rapid development of road transport has steadily undermined the unassailable position of dominance held by railways in the past while the growing demands of the community for transport of labour employed for increased wages, and of the shareholders who seem to have been left very much in the cold, alike require careful analysis. Dr. Fenelon has attempted to provide a survey of modern railway practice and has devoted particular attention to recent developments and new facilities. With a view to supply sufficient material for the informed discussion of railway problems he has not merely stated facts but has given viewpoints on a number of controversial matters and instituted comparisons with conditions on foreign railways.

After giving a brief summary of railway development in Great Britain the author refers to the State control as it has been exercised during the past 20 years especially after the Railways Act of 1921. The railway amalgamation, the restrictions regarding the power of charging rates and fares, the classification of goods, the exceptional rates, and the emergence of agreed charges are all explained in a lucid style and the author brings up the account to the "Square Deal" campaign. The author next turns to the passenger services and the goods services. The successive improvements in the facilities, the new types of demand

for better services, the improvements in the types of equipment adopted to meet the growing needs of the public, all these are dealt with. A separate chapter is devoted to the special services rendered to the British farmer. Apart from these, the railways also handle certain special services such as the Post Office services, the handling of perishables, refrigerated service, vegetable and fruit traffic, fish traffic, etc., all of which imply a remarkable efficiency and most careful organisation. Dr. Fenelon next takes up certain problems of railway operation such as the timetable, signalling, efficient utilization of the stock, Diesel engine and electrification. The effect of road motor transport on railways and the new services evolved to meet the competition such as the container services are described in the succeeding chapter.

The book concludes with a brief description of the British Railway Finance. In the Appendix are given some important statistics and a select bibliography.

Transport Control Abroad: By W. Rodney Long. (Washington, United States Government Printing Office, 1939. Pp. v+427, Price \$ 0.40).

This is a report prepared by the Bureau of Foreign and Domestic Commerce, United States, reviewing such changes in transport control methods in foreign countries as have developed since the publication of *Railway and Highway Transportation Abroad* in 1934. A very large amount of valuable material and comparative data have been obtained from the officials of the Bureau themselves in different countries and other unofficial sources.

After a brief introduction summarising the scope of the survey, the entire material has been presented in three separate chapters. The first chapter, covering almost 300 pages, presents brief accounts of the movement towards transport control in each of the 87 countries alphabetically arranged. In wealth of information and condensation, the account for each of the countries of the world is remarkable. Looking into the section on India in this chapter there is nothing that is left to be desired. There is a brief sketch of Railway Finance since the separation followed by an account of the attempts at road-rail co-ordination

beginning with the road-rail Conference at Simla, the Constitution of the Transport Advisory Council, the recommendations of the Wedgwood Report and an analysis of the Motor Vehicles Act, 1939. If this is a fair sample of the accounts of the developments in the other countries of the world, it speaks a great deal for the industry and accuracy of the information with which the book is written.

Chapter II of the report deals with the introduction of new types of equipment to facilitate co-ordination, to meet competition, or to effect operating economies. The principal types referred to are self-propelled rail cars for both freight and passenger services, the road-rail vehicle, the uses of unit containers or container cars.

In the last chapter is summarised the efforts other than legislation or uses of new equipment made by railways to meet competition from other forms of transport such as store-door delivery services; speeding up of services; inauguration of highway service; revision of passenger and freight rate schedules; railway construction and rehabilitation programmes; terminal improvements; development of tourist interest; advertising, etc. Mr. Rodney Long has given in the introduction a brief summary of the views expressed in the Report. The views of the Highways and the Railways are according to him best reflected in the conclusions recorded by the International Motor Congress, Berlin, in 1933, and the International Railway Congress Association held in Paris in 1937. Another viewpoint is also put forward by the committee of independent experts under the auspices of the International Chamber of Commerce. There are a number of appendices, dealing amongst other things with the League of Nations' study, the legislation in Italy and Japan and the principal sources of material for the present report. There are 25 illustrations. It should be regretted that in a volume of such an extraordinary large amount of data, an adequate index has been omitted.

A Statutory History of the Steam and Electric Railways of Canada, 1836-1937: Compiled by Robert Dorman (Canada, Department of Transport, 1938, Pp. 765, Price \$ 3).

This volume presents a chronological summary of the statutes relating to the construction of railways in Canada. It

is brought out by the Department of Transport, Canada, and compiled by Mr. Robert Dorman. There is a short summary of the railway history of the Dominion followed by an account of the railway gauges. Then follows a statutory history which takes about 650 pages. The various railway companies which had given rise to statutes from 1836 onwards have been arranged alphabetically, with details relating to the statutes passed in connection with each railway in a chronological order. The subject-matter of each statute is briefly referred to. There is next, in 34 pages, the statutes enacted in connection with the Departments of Railways and Canals, of Marine and its Services and of Transport. The constitution of the Board of Railway Commissioners for Canada has given rise to a number of statutes during 1903 to 1937, which are next listed. The concluding pages deal with general legislation affecting railways of Canada. With such a prodigious volume of legislation, it is impossible to use the book without a satisfactory index. This has been provided by five separate indexes under different heads, namely, statutes relating to merged lines, line subsidies and line subsidies by terminii, bridge subsidies, allocation and miscellaneous subsidies.

OFFICIAL PAPERS.

REPORT ON LOCOMOTIVE MANUFACTURE.

Domestic manufacture of locomotives has been one of the unfulfilled ambitions of Indian industrial enterprise during the last twenty years. The difficulties of obtaining supplies during the last war indicated the importance of production at home and with the assurance of generous State assistance—unfortunately somewhat too readily given—the Peninsular Locomotive Company was established. The great hopes entertained in 1921 came to grief before long. For, bereft of subsidy by the State which could not for various reasons redeem the promise of assistance, and of protection which the Tariff Board could not justify in the circumstances then prevalent, the Company went into liquidation without producing a single locomotive, and its assets valued at Rs. 30 lakhs were acquired for the State railway workshops at Tatanagar. The unfortunate termination of an enterprise started with so much hope hurt Indian pride.

The conditions facing a locomotive industry in India are of an especial character. The State-owned Railways provide the only market for locomotives and their requirements determined whether an industry could thrive or not. During the last fifteen years their demands have fluctuated so greatly as to

give little assurance of steady orders so essential to a private undertaking. If private enterprise was an uncertain proposition, could not something be done by the railways themselves? The non-official members in the Assembly now pinned their faith on State enterprise. The State Railway workshops were considered by the Wedgwood Committee as the last word in modernised and up-to-date equipment, if not in operation, and could undertake building locomotives. Although the question was raised by the Assembly and its Committees more than once during the past three years, there was little enthusiasm for the proposals. Within a month of the Railway Member twitting the Assembly for sponsoring "a new economic theory of buying 15 annas worth for 18 annas," the Pacific Locomotive Enquiry Committee commended the desirability and practicability of domestic manufacture. The Railway Board admitting that the circumstances had by then altered had the question investigated by a Mechanical Engineer and a Finance Officer. Their report published along with the Budget Estimates on February 16th, presents a workable scheme for the manufacture of locomotives in India.

According to the Report, there are no difficulties of a mechanical or technical character in the way of Indian Railways manufacturing their own locomotives. This is clear from the fact that the Jamalpur Workshops have built as many as 214 locomotives and a sufficient number of additional boilers and tenders before manufacture was given up in 1926. This is again reinforced by the fact that the Ajmer shops of the B. B. & C. I. Railway have produced during 1896-1940 no less than 435 metre gauge locomotives, which compare very favourably with those imported. During the last twenty years certain factors operated to keep down the annual requirements of locomotives below the minimum number necessary for profitable manufacture. Thus, the campaign of intensive utilization of locomotives, the reduction of time for repairs consequent on the remodelling and modernisation of the workshops, the pooling of locomotives at the instance of the Pope Committee, the electrification of lines displacing steam locomotives and the substitution of other kinds of motive power to meet motor competition have all conspired to create a surplus of locomotive power. The avoidance of purchase of locomotives, whether on capital or renewal account, has now led to an increased average age of the existing stock, which implies a concentration of renewals within a comparatively short period of time. It is on the estimate of the volume of renewals during the next fifteen years on this account that the case for locomotive manufacture developed in the report in fact rests. Taking the economic output for a factory at 70 broad gauge locomotives of 48,000 lbs. tractive effort, and 70 extra boilers and necessary components,—an equivalent of 100 locomotives of the same tractive power—it is argued that the average annual requirements on Indian Railways during the period 1940-80 are likely to come up to this level. The estimate seems to be conservative, for, compared to the annual requirements computed on the basis of a 35-year life cycle for the older locomotives due for renewals, the replacements during the next sixteen

years amount to twice the earlier estimate which also agrees with the locomotive requirements calculated on the basis of the number in daily use.

On these grounds the report recommends the establishment of the industry. For reasons of cheapness of land, proximity to existing workshops, accessibility to sources of supplies and availability of skilled labour at fair rates, the choice falls in favour of the two State railway workshops, at Jamalpur and at Kanchrapara. The final choice falls in favour of Kanchrapara situated 28 miles from Calcutta, as the conversion of the Loco shops there involves a capital outlay of Rs. 47½ lakhs against Rs. 109 lakhs for Jamalpur. According to the detailed calculations of the experts, an "NE" broad gauge locomotive is expected to cost under the pre-war prices about Rs. 98,000, which is about 20 per cent. below the lowest price at which imported locomotives can be placed on the line.

The problem of the manufacture of metre gauge locomotives is much simpler, as the B. B. & C. I. Railway is already producing locomotives of this type and parliamentary sanction has been obtained last year to enable it to supply the requirements of the other Indian Railways. The question, therefore, resolves itself into one of mere expansion in the output.

The project cannot well be more timely. In view of the situation created by the War, sole reliance on imports is likely to expose Indian Railways to grave difficulties similar to those experienced twenty years ago. Government are examining the implications of the report and judging from the references in the Railway Budget speeches in the Assembly, detailed proposals regarding the starting of the project may be expected to be laid before the Assembly before long.

SOUTH AFRICAN RAILWAYS AND HARBOURS.

The Report of the General Manager on the administration of the South African Railways and Harbours for the year ended March 31, 1939 shows a decrease of 2.36 per cent. in gross receipts as compared to the previous year. The total receipts from railways amounted to £32,600,141. The total expenditure excluding depreciation has gone up from £21,014,207 to £22,070,293 or by 5.03 per cent. The Gross Working expenses including depreciation amounted to £24,336,685 leaving a surplus of £8,263,456. The revenues from all sources total £38,533,092 and the expenditure incurred aggregated £38,971,758. The net result of working the combined services resulted in a deficit of £4,38,666.

The earnings declined mainly on account of the falling off in high-rated traffic which usually accounted for 60 per cent. of the revenue. Even a comparatively small decline in the tonnage of the high rated traffic adversely affects the revenue without permitting a proportionate decrease in the expenditure.

It is reported that as a result of the measures adopted for maintaining more direct control over all matters involving expenditure which included

the appointment of a Committee representing the senior officers of the various departments a report has been submitted containing valuable recommendations for improving the existing organisation in various directions. The Committee's report is receiving due consideration.

As regards road-motor competition it is stated that although a large measure of co-ordination and stability has been attained in the transportation industry as a result of the control exercised over road-motor transportation activities in the provisions of the Motor Carriers Transportation Act there has been a serious competition from motor taxis operating outside their legitimate sphere. With a view to bring under effective control the activities of this type of taxi the Central Road Transportation Board has recommended to the Minister that the Act be suitably amended.

It is gratifying to note that during the year under review the South African railways carried out experiments with gramophones for the purpose of ascertaining whether orchestral music could successfully be distributed by means of amplifiers in dining cars to relieve the monotony of long journeys. These experiments were favourably received by the travelling public and the question of the introduction of this amenity is receiving the consideration of the railways.

The General Manager has given a full account of the activities in the Report. Certain important statistics of working are given below :

	1937-38	1938-39
Average Mileage Operated	.. 13,263	13,272
Capital cost of construction	.. £156,698,405	£162,966,873
Gross Earnings	.. £33,388,773	£32,600,141
Working Expenses	.. £23,218,919	£24,336,685
Net Revenue	.. £10,169,854	8,263,456
Operating Ratio	.. 69.54	74.65
Percentage of net revenue to Capital	.. £6-14-3	£5-5-2
Number of passenger journeys	.. 105,475,637	113,703,459
Coaching earnings	.. £5,750,035	£5,919,931
Goods net ton	.. 29,974,816	29,477,710
Goods Earnings	.. £25,133,683	£24,109,359
Goods ton miles	.. 7,337,148,728	6,643,183,715
Train miles	.. 60,397,400	59,829,326



NOTES AND MEMORANDA
RAILWAY BUDGET ESTIMATES FOR 1940-41.

The Railway estimates introduced in the Assembly on February 16th revealed the characteristics of a war budget. The actuals for 1938-39 were on the whole a disappointment and yielded a smaller surplus than was expected. The current year, judging from the traffic trends down to August, foreshadowed a further deterioration, but the effect of the war since September has proved stimulating. The principal features of the estimates are the increase in traffic due to war and the enhancement with effect from March 1st. of rates and fares. The gross traffic earnings for the current year, 1939-40, are accordingly revised to Rs. 97.30 crores or Rs. $2\frac{1}{2}$ crores higher than the original estimates. Working expenses are also taken at a crore higher, namely, Rs. 65.35 crores. The net revenue is expected to be Rs. 32.53 crores, which after meeting the interest charges would leave a surplus of Rs. 3.61 crores to be paid to the State as compared to Rs. 1.37 crores for 1938-39.

The estimates for the budget year reflect the full effects of the enhancement of the rates and fares. The increase amounts to $12\frac{1}{2}$ per cent. on all goods except food grains, fodder, manures, and military traffic. A partial exception is made in respect of coal on which, besides removing the maximum, the surcharge is increased from $12\frac{1}{2}$ to 15 per cent. till November and 20 per cent. thereafter. Passenger fares exceeding a rupee have been increased by $6\frac{1}{4}$ per cent. The budget estimates for 1940-41 compared to the actuals for 1938-39 and the revised figures for 1939-40 are summarised below :

	1938-39	1939-40 RE	1940-41 B.E. (Rs. in crores).
Gross Traffic Receipts	.. 94.48	97.30	103.00
Working Expenses (inc. deprec.)	.. 64.04	65.35	66.64
Net Revenue (inc. misc. transactions)	.. 30.67	32.53	37.11
Interest charges	.. 29.30	28.92	28.82
Surplus	.. 1.37	3.61	5.31
Transferred to Reserve		..	2.98

Gross traffic receipts are estimated Rs. $5\frac{3}{4}$ crores higher than for the current year. Working Expenses, due largely to rise in the price of materials and an important accounting change transferring a charge of Rs. 30 lakhs from capital to revenue, show an increase by Rs. $1\frac{1}{4}$ crores to Rs. 66.64 crores. The net revenue for the year is expected to be Rs. 37.11 crores, higher than even the levels touched during the pre-depression years, and leaves after meeting the interest charges a surplus of Rs. $8\frac{1}{2}$ crores. It is proposed to pay the full contribution for the year and the balance of Rs. 90 lakhs for the previous year and transfer the remaining sum to the Reserve.

The criticism of the railway estimates has been mainly directed against the enhancement of the freight rates and fares, the case for which, judging

from the Railway Member's speech and the traffic trends does not appear to be as strong as is claimed. The budget speech in this respect is in sharp contrast to the assurance given by the British Minister of Transport to the effect that Government will not use its control to increase charges without sufficient grounds and full justification in Parliament. The Assembly was not in full strength—owing to the abstention of one of the parties and Government had a facile passage for all its proposals. There appears to be a large element of underestimating suggesting an apprehension that the reaction of the rate increases on trade and industry may hold some unpleasant surprises for the railways.

The moratorium of three years in respect of the accumulated liabilities, due to expire at the end of March 31st., has been extended for a further period of two years, namely to the end of March 31, 1942. As nothing has been paid so far since 1937, the loans from the Depreciation Fund taken to cover past deficits remain at the same figure of Rs. 30½ crores, but the liability on account of unpaid annual contributions has increased to Rs. 36½ crores. There is thus a total obligation of Rs. 66½ crores to be faced at the end of another two years.

The details of the Budget Estimates passed by the Central legislature may be judged from the following tables. As the statistics relating to the earlier years have been given in full in the previous numbers of the Journal the actuals and the estimates have been given only for the five years ending 1940-41.

TABLE I—COMMERCIAL AND STRATEGIC LINES TOGETHER.

(IN LAKHS OF RUPEES).

		1936-37	1937-38*	1938-39*	Revised Estimate* 1939-40	Budget Estimate* 1940-41
Mileage	State-owned	M	M	M	M	M
	Worked lines	31,729	29,764	29,725	29,725	29,809
		4,398	4,084	4,083	4,114	4,114
		Rs.	Rs.	Rs.	Rs.	Rs.
Gross traffic receipts	State-owned	9,549	9,501	9,448	9,730	10,300
	Worked lines	553	545	514	500	519
Operating expenses	State-owned	5,023	5,037	5,148	5,276	5,39
	Worked lines	266	264	253	256	262
Depreciation fund		1,315	1,257	1,256	1,259	1,266
Payments to worked lines		287	281	261	244	257
Net traffic receipts State lines		3,211	3,207	3,044	3,195	3,636
Net miscellaneous receipts after deducting miscellaneous charges and surplus profits payable to companies		—9	—5	23	58	75
Net revenue		3,202	3,202	3,067	3,253	3,711
Interest charges		3,081	2,926	2,930	2,892	2,882
Surplus		121	276	137	361	829
Paid as contribution to general revenues		..	276	137	361	531
Transferred to railway reserve		..	..	..	..	298

*Excluding Burma Railways.

Note 1.—The balance of the loss in 1931-32 and the total loss in the following years to 1938-39 have been met by temporary borrowing from the Depreciation Fund.

TABLE II—STATEMENT OF OPERATING RATIOS INCLUDING AND EXCLUDING DEPRECIATION.

Railway.	1936-37	1937-38	1938-39	1939-40	1940-41
Excluding Depreciation					
A. B.	63.5	65.2	62.5	59.8	56.3
B. N.	63.1	58.2	60.6	57.4	56.3
B. B. & C. I.	45.9	47.9	49.4	48.1	45.7
M. & S. M.	48.5	53.2	52.4	50.6	48.9
S. I.	52.3	53.6	55.3	57.0	54.1
E. B.	63.2	65.0	68.3	68.7	68.4
E. I.	47.4	48.8	50.2	50.7	48.6
G. I. P.	48.7	52.1	53.4	51.6	50.2
N. W.	51.7	56.0	57.5	59.8	58.1
Including Depreciation					
A. B.	86.7	86.5	82.4	79.2	74.3
B. N.	79.5	71.8	74.2	69.6	67.9
B. B. & C. I.	57.3	57.7	59.3	57.8	54.3
M. & S. M.	63.2	65.0	64.3	62.1	59.8
S. I.	68.0	67.2	69.2	71.0	67.2
E. B.	78.8	79.4	82.4	82.3	81.3
E. I.	60.6	60.5	62.0	62.3	59.8
G. I. P.	64.1	66.1	67.5	65.2	63.1
N. W.	67.8	69.9	71.9	74.5	72.1

TABLE III—GROSS RECEIPTS.

(IN LAKHS OF RUPEES.)

	1936-37	1937-38	1938-39	Revised Estimate 1939-40	Budget Estimate 1940-41
A. B.	168	176	190	198	215
B. N.	839	951	947	968	1,120
B. B. & C. I.	1,189	1,201	1,187	2,130	1,300
M. & S. M.	668	692	726	750	790
S. I.	512	534	524	523	560
E. B.	574	583	594	620	655
E. I.	1,944	2,100	2,084	2,118	2,250
G. I. P.	1,327	1,301	1,294	1,345	1,425
N. W.	1,700	1,697	1,639	1,622	1,720

TABLE IV—WORKING EXPENSES.

(IN LAKHS OF RUPEES.)

	1936-37	1937-38	1938-39	Revised Estimate 1939-40	Budget Estimate 1940-41
A. B.	1,50	1,56	1,61	1,61	1,64
B. N.	6,67	6,83	7,03	7,43	7,61
B. B. & C. I.	6,83	6,92	7,05	7,10	7,08
M. & S. M.	4,26	4,55	4,69	4,66	4,72
S. I.	3,47	3,58	3,62	3,70	3,74
E. B.	4,57	4,67	4,94	5,15	5,38
E. I.	11,78	12,70	12,94	13,20	13,45
G. I. P.	8,58	8,68	8,82	8,84	9,05
N. W.	11,61	11,97	11,90	12,20	12,50

Note 2.—Credits for material released from works not charges to revenue were taken in reduction of operating expenses up to 1931-32. From 1932-33 onwards they have been added to receipts and are included in net miscellaneous receipts. From 1936-37, they are taken in reduction of expenditure met from the Depreciation Fund. The amounts involved are as follows : in 1932-33 and 1933-34, 119 lakhs each ; in 1934-35, 90 lakhs ; and in 1935-36, 110 lakhs.

TABLE V-A—GENERAL ADMINISTRATION.

(IN LAKHS OF RUPEES.)

	1936-37	1937-38	1938-39	Revised Estimate 1939-40	Budget Estimate 1940-41
A. B.	35	35	36	36	37
B. N.	149	152	151	152	155
B. B. & C. I.	162	165	165	162	164
M. & S. M.	103	105	104	103	104
S. I.	83	85	84	83	85
E. B.	106	108	108	114	110
E. I.	258	262	260	270	266
G. I. P.	164	178	175	177	180
N. W.	238	243	238	239	243
B. REPAIRS AND MAINTENANCE.					
A. B.	41	44	53	54	54
B. N.	186	193	204	236	242
B. B. & C. I.	172	178	177	192	196
M. & S. M.	109	113	114	114	122
S. I.	67	68	71	77	84
E. B.	148	121	166	174	201
E. I.	349	333	250	348	365
G. I. P.	165	205	219	225	240
N. W.	281	281	304	323	340
C. OPERATION EXCLUDING FUEL.					
A. B.	28	29	37	38	39
B. N.	158	155	161	167	173
B. B. & C. I.	178	185	187	184	183
M. & S. M.	106	108	105	105	102
S. I.	87	89	87	89	92
E. B.	111	109	117	119	119
E. I.	305	324	330	342	337
G. I. P.	249	240	235	240	231
N. W.	324	251	242	243	247
D. OPERATION FUEL.					
A. B.	12	14	18	17	18
B. N.	46	51	58	61	62
B. B. & C. I.	75	80	85	84	82
M. & S. M.	63	78	70	72	72
S. I.	51	53	61	66	60
E. B.	38	41	47	46	47
E. I.	91	106	108	116	127
G. I. P.	79	87	88	85	95
N. W.	166	200	192	198	200
TABLE VI—PROFIT AND LOSS.					
A. B.	—75	—74	—66	—56	—41
B. N.	—152	—56	—83	8	41
B. B. & C. I.	216	216	192	232	303
M. & S. M.	—3	—11	6	49	84
S. I.	—10	..	—14	—19	16
E. B.	—79	—78	—94	—96	—74
E. I.	175	239	200	215	321
G. I. P.	46	12	—6	52	114
N. W.	—43	—78	—129	—167	—96

Note 3.—Working expenses were reduced in 1930-31 by 166 lakhs by a credit from the Depreciation Fund for correction of past accounting adjustments and in 1924-25 by 179 lakhs by certain abnormal refunds of expenditure in previous years.

INDIAN RAILWAY CONFERENCE ASSOCIATION.

The Presidential address delivered by Mr. J. W. Gordon, C. I. E., O. B. E., at the meeting of the Indian Railway Conference Association held on Thursday, March 14, 1940, presented a remarkable survey of the character the work of the Association and its status would assume in the new regime under the Federation. Mr. Gordon examined the constitution of the Federal Railway Authority and its relations to the Federal Government and the Indian States as defined in the Government of India Act of 1935. After a detailed review of the sections, sub-sections and schedules referring to the railways, the President expressed his opinion that “no difficulty will be experienced in finding in India men of the necessary qualifications, attainments and character to fill with success the appointments both in the Administrative and Executive Branches of the Federal Railway Authority.” He was also confident that the I. R. C. A., which was fundamentally a technical Association would remain independent and continue to offer valuable advice to the Railway Authority. The rest of the speech attempted a review of the important work done by the Association through its various committees.

Sir Andrew Clow, C.S.I., C. I. E., I. C. S., Member for Communications, gave what to the general public would have come as a more interesting speech. He dwelt on the relations of the State to the Railways especially in view of the large proprietary interest, which it has come to acquire in the course of our railway history. Sir Andrew said :

“Not least among the advantages which might be expected to follow from the establishment of a special administrative authority would be the gradual evolution of a system which will combine the advantages of socialism and capitalism in respect of railways. The State in this Country is the owner of at least nine-tenths of the railway system, and it has undertaken the management of the greater part of that system. So that we have, in practice, State socialism on a scale attempted in no other country where individual liberty is preserved. Public opinion, moreover, as I assess it, is still on the whole in favour of an extension of State management, although I do not feel confident that it would have taken this view had the companies holding the big railway contracts been Indian. Now control by the State has obvious advantages. It means that the policy pursued is not directed for the benefit of private or even sectional interests, but has to be framed so as to secure benefits for the community as a whole. The early economists believed that the good of the community could be secured best by each individual and presumably each corporation, pursuing his or its own interests ; but we no longer accept that view and there are various questions on which the interests on the railways, viewed in isolation, and the interests of India as a whole, can differ. There is no need for me to develop this fact in a company of experienced railway officials. You are all aware of the fact that railways could show better balance sheets if they were permitted to frame their goods schedules with an eye solely to profit. Such profits as our railways earn, all go, in one form or another, to the community.

Again, state organizations are not likely to forget their duties to those they employ. What-ever our trade union friends may say about the hardships of railway work, it is notorious that most people consider themselves very fortunate when they can secure a job in any of our big railways and that voluntary resignations and departures from railway service are, in any grade, extremely rare. The railwayman knows that his conditions of service are regulated by elaborate codes of rules to which he can appeal. He can feel confident that he does not depend for the retention of his job on the favour of individuals and even promotion is in many cases virtually secure. In the higher ranks, the railway officer knows that he will not, as sometimes happens in private businesses, be superseded in order to make room for a relative of the General Manager or of a Director of the Railway Board.

These are big advantages, but official administration of a commercial concern tends to bring disadvantages which are apt to be overlooked by those who frame socialist utopias. In the first place, State organizations find it difficult to deal sufficiently severely with the incompetent and sufficiently generously with the specially competent. In all Government services there is a tendency to be satisfied with a moderate standard and to discharge only those who have committed definite faults. At the same time, there is a tendency to pay too much attention to seniority in the matter of promotions with the result that the more competent men get discouraged because they feel that, whatever their exertions, the chance of rapid advancement is small. Promotion at times comes almost automatically to a man because there is nothing to be said against him, whereas the test ought to be how much there is to be said for him.

And Government is not greatly helped by public opinion to fight against these tendencies, for public opinion at present tends too often to look at the individual who is discharged or kept back rather than at the better man who can take his place or his promotion. How rarely are we urged to deal more sternly with the lazy and to supersede many by promoting the outstanding men over their heads; but it is in doing this too seldom rather than too often, that State organizations earn the criticism of discerning men.

In the second place, State organizations tend to be less enterprising than ordinary businesses. The bureaucrat, especially in matters of finance, is by nature a cautious individual. He is working with public money, and tends to look askance at anything savouring of a gamble with it. But all commercial enterprise, if it is to be successful, involves an element of speculation. The business man who only makes a venture when he is on a practical certainty will not get very far. And if a State business is to be a real success, it must be prepared, like other businesses, to undertake ventures which may not succeed.

Here again, Governments are not usually helped by public opinion. If an official takes a risk which does not come off, a vigilant public is ready to condemn him, whereas if he fails to take a risk and pursues the path of safety first, he stands in little danger of being reprimanded for his caution. Shareholders in a private concern are more ready than the general public to recognise that in the long run, the refusal to take financial risks is likely to prove unprofitable.

And, thirdly, there are obvious dangers in any State system that administration will be injured by political influences. You have stressed the importance of avoiding that, and the hope which the Federal Railway Authority holds out of this possibility. The true function of the politician, and the one which his experience and training equip him to perform, is the guiding of policy; this is the field of statesmanship. If a few tend to get interested in administrative detail, it has to be remembered that to any one with humanity, personal cases are bound to be interesting and that all who take part in politics are subjected to a pressure which is not easy to resist. Even those who fail to resist that pressure would often be relieved if it could be removed."

THE NEW MINOR WORKS LIMIT.

In the Budget for 1940-41 a new accounting change has been introduced as regards minor improvements and additions. In his review of the Accounts of Railways for 1934-35 the Financial Commissioner of Railways referred to certain aspects of the rules then in force regarding the allocation of expenditure on works between Capital and Revenue which had a tendency to undesirable overcapitalisation. The limit of Rs. 2,000 for new minor works he declared was a very low figure and he examined the effect of raising the figure to Rs. 5,000, Rs. 10,000 and Rs. 25,000/-. No action could be taken so far on account of the financial conditions at the time. The Government of India now consider that in the interest of sound railway finance it is not desirable to postpone giving effect in some measure to the principle then recognised and therefore proposes that from 1st April 1940, the existing limit

of Rs. 2,000/- for new minor works be raised to Rs. 10,000/-. This change involves according to the estimates for 1940-41 a transfer of Rs. 30 lakhs from capital to Revenue on State-managed railways. The question of its extension to the Company-managed railways is under consideration.

EMERGENCY CONTROL OF BRITISH RAILWAYS.

According to Regulation No. 69 of the Defence Regulations issued in pursuance of the emergency powers "Defence" Act, 1939, which received the Royal assent on August 24, "The Ministry of Transport may by order take control of such railway undertakings as may be specified in the Order; and an Order may under this Regulation in relation to any railway undertaking so operate as a requirement—(a) that any property from time to time held by the undertakers for the purposes of the undertaking (other than currency, gold, securities or negotiable instruments) shall be placed at the disposal of the ministers in accordance with the and directions which may be given by him or on his behalf while the Order is in force—(b) that the undertaking shall be carried on in accordance with the and directions which may be so given while the Order is in force."

On August 4, 1914, the railways were taken over under Section 16 of the Regulation of the Force Act, 1871, which provided "When Her Majesty, by Order in Council declares that an emergency has arisen in which it is expedient for the public services that Her Majesty's Government so have control over the railroads in the United Kingdom, or any of them, the Secretary of State may, by warrant under his hand, empower any person or persons named in such warrant to take possession in the name or on behalf of Her Majesty of any railroad in the United Kingdom, and of the plan belonging thereto."

On September 1, the Minister of Transport issued an Order taking control of the enterprise or portions of the enterprise in Great Britain wholly owned by, leased to, or operated by the

Southern Railway,
Great Western Railway,
London Midland and Scottish Railway,
London and North Eastern Railway,

London Passenger Transport Board and other smaller Railways. The Minister of Transport has appointed Sir Ralph Wedgwood, Chairman, Sir James Milne, Mr. C. H. Newton, Mr. Frank Pick, Mr. Gilbert Szlumper and Sir William Wood to be his agents for the purposes of giving directions under the Order and to act as Railway Executive Committee.

The minister has also requisitioned all privately owned wagons other than tank wagons, wagons set aside for specific traffic, wagons not suitable for running on main lines, wagons reserved for use in plants and mines, specially constructed wagons and other wagons required for special or emergency purposes. It is understood that by far the greatest change from the point of view of the public since the outbreak of the war, has been the

curtailment and deceleration of the passenger services. The Railway Executive Committee exhorted the public to put up with inconveniences on account of the heavy freight and Military Traffic of an urgent character. Freight services have to be mostly handled under exceptionally difficult lighting conditions.

The Minister's Order also relates to the road motor transport which will be worked in the same way as the railways, generally under the control of the Railway Executive Committee. In respect of those forming part of the London Passenger Transport Board, the other road transport undertakings have been organised for civil defence and for hauling war materials. But their control has been separated from the Railway Executive Committee under "Road Transport (Goods Vehicles) Defence Emergency Organisation." This organisation has been brought into existence on a voluntary basis in which without interfering with their normal requirements the undertakers have placed their vehicles into groups under group organisers, district managers through whom the government can secure the best use of road transport as well as valuable fuel during the emergency. Restrictions previously enforced on carriage for hire, for general haulage have been removed as that would be inappropriate under war conditions. The effect of these Orders issued under the emergency powers (Defence) Act is to ignore the differences between "A, B and C" licences defined in the Road-Rail Traffic Act of 1933. It also enables the regional transport commissioners to issue "certificates" where licences have expired or have not been obtained, to allow new services or issue "permits" for drivers of public service vehicles and heavy goods vehicles in lieu of family licences. The A, B and C licensees have been notified that they should register their vehicles in the emergency index or join groups referred to above as in view of the possibility of fuel rationing it would not be possible for Operators to obtain fuel for vehicles not registered in the emergency index. Thus owners of ungrouped vehicles unless specially exempted would be placed at a disadvantage. The Minister of Transport has indicated that war requirements have necessitated the reduction of vehicles at the disposal of both the industry and the auxiliary users and firms accustomed to having their own vehicles entirely for their own use are reminded that they cannot count on replacement if they lose a vehicle. The rates of compensation have been provisionally fixed at the following rates per week :—

Weight unladen.	Sh.
Under weight unladen not exceeding 1 ton	10
Exceeding 1 ton but not exceeding 5 tons	15
Exceeding 5 tons	30
Addition for each trailer	5
For public service vehicles	40
For taxi-cabs	50

Local authorities have been authorized to make interim payments on this scale and in addition meet the cost of any petrol consumed in running under their direction and also the wages of the driver if supplied with the vehicles at the local rates. Rationing of fuel has already been fixed. The immediate effect of the war on the bus industry has been the curtailment of

services after dark on account of the blackout conditions and recruitment and training of women labour. Several undertakings have lost a substantial portion of their operating staffs.

GOVERNMENT CONTROL OF RAILWAYS IN BRITAIN.

Early in February the Minister of Transport referred to the agreement reached between the Government on the one part and the four main-line railway companies and the London Passenger Transport Board on the other part as to the financial arrangements for the period during which these undertakings are under Government control.

The Minister said in answer to a question on the Order Paper that "The general principle is that the undertaking shall be operated under unified control on an economic basis and that appropriate charges shall be made for government traffic." The main provisions are as follows: The receipts and expenses of the controlled undertakings will be pooled and out of the pool they will be paid annually sums equivalent in the case of the railway companies to the average of their net revenues for the years 1935, 1936 and 1937 and in the case of the London Passenger Transport Board, to its net revenue for the year ended June 30, 1939. The payment of these sums, amounting approximately to £40 millions, will be guaranteed by the Government.

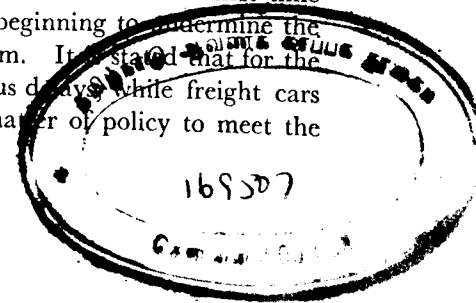
If the amount in the pool exceeds this guaranteed net revenues the undertakings will be allowed to retain in full the first 3½ millions of excess, but beyond that point the Exchequer will take one-half of the net revenue until the undertakings reached their standard revenue after which the whole of the balance in the pool will be taken by the Exchequer.

There are special provisions to deal with the case of the London Passenger Transport Board during the early months of the war when its undertaking suffered severe dislocation owing to the need for taking special precautions against air raids.

The agreement will provide for standard charges for maintenance for dealing with the problem of war damage, and for bringing the receipts and expenses arising from the requisitioning of privately owned wagons within the pool. There are also to be provisions dealing with the adjustment of rates, fares and charges to meet variations in working costs and war conditions.

GERMAN RAILWAYS.

A Special Supplement on the present position of the German Railways was issued by the Bureau of Foreign and Domestic Commerce, United States, towards the end of 1939. According to the Supplement, danger signs in the operation of the German Railways were to be observed for the first time during 1938 and 1939 and acute problems were beginning to undermine the former excellent standards of working of the system. It is stated that for the first time express trains began to arrive with serious delays while freight cars were loaded in excess of normal capacity as a matter of policy to meet the



exigencies of the second Four Year Plan. Wear and tear upon locomotives and all types of rolling stock began to become apparent while so numerous and so important were the calls upon the Reichsbahn that its available equipment could not be retired for reconditioning as should have been the case. Fuel used per ton kilometres consequently advanced, costs increased and the efficiency of the road was impaired. Absorbing the Austrian Bondsbahn, paralleling the annexation of the Ostmark as a whole, brought many problems along with the important material contribution in rolling stock and equipment. Overhead has threatened with the seriously aggravated load of top heavy administration expenses which have for years crippled the diminished Austrian system. Similar problems attend the projected assimilation of the railways in Bohemia and Moravia and that part of the Polish network which will become German. While the years 1938 and 1939 saw Germany extend its railway system till it became one of the most important in Europe, the increase also brought no remedy to the lack of operating equipment.

UNIT REVENUES AND EXPENSES OF RAILROAD SERVICES.

The Bureau of Statistics of the Interstate Commerce Commission, issued in 1931 a statement affording a convenient survey of the changes over a long period of years in the average revenues expenses and net railway operating income per ton-mile, per car-mile, per net freight ton-mile, per loaded freight car-mile, and per passenger train car-mile. This Statement has been brought up-to-date and the figures up to 1937 have been added. To assist in interpreting the expenses averages the tables showing such items as average haul, average car-load and average train-load are added.

The unit revenues and expenses are given both in absolute and relative figures, the latter showing the percentage relation of each year to the average of the three year period ended June 30th, 1917, which is called the "Test Period." The operating expenses per ton-mile in the test period was dollars 1.946. This relates to all services. It rose to £4.920 in 1920, fell to £3.044 in 1933, but increased to £3.527 in 1937, which is 81.3 per cent. above the test period average. In the test period the railways accrued 13.1 cents. in taxes per ton-mile. This average increased to 35.4 cents in 1937, and increase of 170.2 per cent. In the test period the railways received £2.830 in revenue per train-mile. This average rose to £5.295 in 1929, and in 1937 was £4.519 an increase of 59.6 per cent. The net railway operating income in 1937 was 63.8 cents. per train-mile compared with 75.4 cents. in the test period, or 84.6 per cent. as much.

During this period the average haul of freight on each railroad increased from 165.0 to 197.6 miles, the average journey per passenger from 34.8 to 49.6 miles, and the average revenue load per freight train increased from 536 to 724 tons. In the test period 51.4 per cent. of the train-miles were freight and 48.6 per cent. passenger, but in 1937, the freight train proportion was 54.6 per cent., of the passenger 45.4 per cent. In the test period 13.3 per cent. of the car-miles were in passenger train services, compared with 11.5 per cent. in 1937. The ratio of sleeping, parlour, observation and dining car-miles

to total passenger train car-miles rose from 27.4 per cent. in the test period to 35.4 per cent. in 1937. These changes in physical operations affect the comparability of the averages per train mile and per car-mile over a period of years somewhat, but do not deprive them of their significance as showing the general tendencies.

In the test period the railways earned 7.866 cents. net per passenger train car-mile above taxes but before interest; in 1937 they lost almost exactly the same amount. In this computation the passenger trains are charged with their use of the road-way, and there was not any actual out-of-pocket loss.

RAILWAY TRIBUNALS.*

While the question of statutory regulations of railways is under consideration, attention might well be drawn to the multiplicity of tribunals before which proceedings by or against railway companies and applications in general for legal pronouncements upon railway matters have to be brought. Actions at common law, or under Statutes such as the Fatal Accidents Acts or the Highways Acts, still come before the Kings Bench Division of the High Court. The High Court can also issue a writ of mandamus against a railway company for the maintenance of the line. But applications by traders and others for reasonable facilities, or complaints as to "undue preference" in rates, go before the Railway and Canal Commission now presided over by Mr. Justice Wrottesley.

The Railway Rates Tribunal appointed under the Railways Act of 1921 took over the functions of the Railway and Canal Commission as regards classification of merchandise and alteration of rates, terminal services and charges. The tribunal here consists of three members, one of whom is versed in commercial affairs, the second in railway business, and the third, who presides, must be an experienced lawyer. Appeals lie to the Court of Appeal on questions of law.

Finally, the Railways (Valuation for Rating Act) 1930 created a new body—the Railway Assessment Authority, and a corresponding body for the Scottish railway companies, to value for rating purposes. Appeals from this body lie to the Railway and Canal Commission.

If alterations are to be made in the law affecting railways, it is surely time that the work of the Railway and Canal Commission and the Railway Rates Tribunal be amalgamated and questions of the right of appeal considered. It is also desirable to accelerate the hearing of short points on railway matters which do not brook of delay.

RAILWAY BUILDING ENTERPRISE IN JAPAN.

The Japanese Government during 1940 will begin the construction of new lines between Tokyo, Yokohama, Osaka and Kobi to be used exclusively for electric trains. The project is expected to be completed by the end of 1942.

The new lines are expected to increase speed of transportation between the leading cities of the country and relieve congestion and minimise railway

* *Railway Gazette*, August 18, 1939.

accident. The new government railway line between Omiya and Koraigawa in the northern suburbs of Tokyo was expected to be complete in May, 1940. The new line is to facilitate transportation of fresh vegetables and fruits from producing centres with greater speed and lower rates than at present. It is also expected to promote the construction of homes for office workers in the suburban area. Further special programmes at a cost of Yen 556 millions over a 15 year period are also under way.

MOTIVES FOR ROLLING-STOCK PURCHASES.

In a recent address before the Harvard School of Business Administration reported in the *Railway Age*, Mr. L. K. Sillcox discussed the motives controlling the purchase of rolling-stock. Twenty-five to thirty years, Mr. Sillcox said, has been considered a reasonable estimate of perspective life for railway freight and passenger cars. Locomotives have been judged as durable, but competitive type of transportation has introduced the factor of obsolescence, which heretofore has been an element of little importance to railways. Wooden cars were rendered obsolete by steel equipment but the wooden cars were allowed a period of years in which to run out the balance of their useful lives. Competition existed only between railways and they shared a common problem, dealing with it realistically and rationally.

Relatively the life of a motor coach or automobile is measured in months, of an airplane, in hours. They have demonstrated to the railways the numbers for frequent renewal obtained through intensive utilisation. Building cheaply for short life, however, can be carried to the limit extended in all industries and two factors in particular bear heavily upon the railroads. First, the motive of operation, coupling one car behind another, calls for great strength of structure and consequent durability, in order that all may enact without damage. Secondly, seasonal and territorial peaks compel the maintenance of great surplus of equipment without a necessary interchange of all the new forms, requiring a period of many years to produce retiring mileages. In the matter of seasonal peaks, the burden has always fallen upon the railways as the mass carriers for the nation. Doubtless it always will be so.

The reasons which lead to the purchase of new rolling-stock are many and it is, according to him, seldom so easy a matter definitely to assign economies as the effect of intangibles outweighs in significance the benefits which may be definitely assigned. The reasons are thus enumerated by Mr. Sillcox. New locomotives may be purchased because :

- (1) More aggregate locomotive power may be required ;
- (2) It may operate more efficiently ;
- (3) It may reduce maintenance expenses ;
- (4) It may provide economies in crew wages ;
- (5) It may run at higher speeds ;
- (6) It may haul heavier trains ;
- (7) It may relieve rough handling ; and
- (8) It may be important from the standpoint of public relations.

New coaching stock may be purchased because :

- (1) They may be needed to handle traffic ;
- (2) Lower maintenance costs are expected ;
- (3) Riding qualities of existing equipment may be unsatisfactory at speeds demanded ;
- (4) Existing equipment may be uneconomical for high speeds ;
- (5) Greater capacity per train may be needed ;
- (6) Existing equipment may not lend itself to modernisation, and
- (7) Competition may compel complete modernisation.

New wagons may be purchased because :

- (1) Traffic may demand more wagons of a specific type ;
- (2) Existing wagons may offer insufficient strength for modern hauling methods involving long trains ;
- (3) It may reduce maintenance expenses ;
- (4) It may be uneconomical to adopt existing wagons to the uneasy requirements of interchange ;
- (5) Changes to adapt to modern high speeds may involve incommensurate expenses ; and
- (6) New and improved materials of construction, for which economic value is claimed are available.

Reviewing these Mr. Sillcox considers that the first item which may affect the decision is independent of any economic urge. Some of these items again may be tangible or intangible factors. The goods wagons offer an interesting study with respect to the peculiar conditions surrounding its use. For one thing Mr. Sillcox says it is no more than a spacious container which may be moved from one point to another thus offering temptation to include its maintenance during dull periods. Moreover, they move in unrestricted services over all railways, and the owning railway derives only a small fraction of its services. A wagon with much of its life to be spent on fallen lines is not the greatest producer of net revenue if not secured at the lowest expenses provided current maintenance expenses is not excessive. A railway dislikes to witness its own expensive wagons exchange in home services for minimum cost types of foreign ownership. Thus he concludes the tendency is to watch closely the unusual investment per wagon which in many cases produces an inferior type.

Discussing the different methods of acquiring new equipment he finds four practical methods whereby wagons serviceable may be acquired :

- (1) Restriction of existing equipment ;
- (2) Arranging for deferred payment through equipment trust ;
- (3) *Per diem* rental at a given rate per wagon day ; and
- (4) A form of four-party agreement whereby a wagon building associate company or another trustee borrows federal fund and arranges with a wagon builder for construction of wagons to be rented to a railway on a contract basis of monthly, quarterly or annual payment.

A detailed analysis of the first, second and the fourth methods gives respectively an annual total cost of £ 340, £ 295 and £ 308. The views of Mr. Sillcox on the retirement of assets deserve attention.

"Seldom is it a simple matter for railroads to evaluate the economics of equipment retirement and still more difficult do they find the problem of determining the type of substitute facilities which should be acquired." The matter of determining the economic status of any piece of production equipment in another industry is relatively simple and capable of reduction to fundamental formula. One machine duly built has developed a compound slide-rule whereby the influence of five or six factors may be instantly derived and the reasonable determination of the net economy becomes a matter of minutes where equipment necessities and equipment purchases are involved, railways are different and the effect adds measurably to their burdens. At the moment the cycle of equipment obsolescence is revolving at an accelerating tempo.

We are still witnessing the turning point in railway transportation. The day of intensive use of minimum plant is at hand since there is no escape from the policy. Every unit of railway equipment is inevitably more costly to acquire and will be suitable for a briefer space of years.

EFFECT OF HEAVIER RAIL ON LABOUR.*

The effects of heavier rail on track-labour were investigated by a sub-committee of the Committee on Economics of Railway Labour at the convention of the American Railway Engineering Association in March last. After a detailed investigation of all the problems involved the following conclusions were recorded :

- (1) The uses of heavy rails in heavy traffic ;
- (2) High speed lines reduce the amount of labour necessary to maintain a given standard of track excellence ; this reduction is both direct and indirect. The items affected directly include lines, surfaces, gauge, joint maintenance and long-rail. The items affected indirectly include tie renewals, cleaning ballast and ballast renewals.
- (3) Since labour is required for practically every item of track, and maintenance is affected also by factors that are of no relation to the weight of rail, it is impossible to segregate those factors in such a way that the effect of the heavier rail alone can be evaluated.
- (4) The magnitude of the economy that can be realised from increasing the weight of rail depends on the relative savings of the heavier rail and of the lighter rail it displaces, the volume of traffic, the axle loads and the speed of trains.
- (5) For lines of heavy traffic density, the saving in track labour following the installation of 112- and 131- Lb. sections in place of sections-way 100 Lbs. and lighter may reach 40 per cent. of the total expenditure for this item.

As the volume of traffic decreases, this saving also decreases until a point is reached where considerations other than savings in labour must justify an increase in weight of rail.

* *Railway Age*, September 2, 1939.

INSTITUTE NEWS.

Mr. L. A. Natesan, Secretary, Institute of Railway Accountants and Auditors, paid a visit to the South Indian Railway and addressed a meeting of the Officers and Accountants and other officials on Tuesday, May 28th, at 4-50 P.M. Rao Sahib M. Ramachandra Iyer, Ag. Chief Auditor, South Indian Railway, presided. Amongst those present were Messrs. K. P. Velu Pillai, Senior Assistant Secretary, Kasturi Rangachari, K. Sadagopan, G. W. Moore, M. A. R. Sequiera, R. I. Norris, Mobarik Ali, Assistant Auditors, S. Venkataramanan, Dy. Government Examiner, and N. V. Vaidyanatha Iyer, Publicity Officer.

Mr. Natesan spoke on some aspects of Railway Accounting. He said : " It is now some ten years since I had an opportunity of meeting the Accounting and other Officers of the S. I. Railway and of addressing a meeting like this. It is therefore with considerable gratification that I accepted an invitation to meet you. I feel that the work of the Institute, about the value of which some of you already know, and others ought to know and appreciate, is sufficient justification for me to inflict on you a speech of this sort.

Railway accounts in India have had little of those influences which have modelled and shaped the subject of railway accounts outside India. In the case of Great Britain, for example, Railway accounts have been mostly influenced by the commercial accountants and experts with experience and knowledge of the general theoretical side of accounts. But even in Great Britain, the Acts enforced by Government and sanctioned by legislative authority lay down the main steel-frame of the accounting system, with its forms and schedule of information required by the public. If you take the American railways you find railway accounting there also has been influenced by the commercial accountants.

Now, in respect of India, the Railways have been almost completely under the influence of Government, who by virtue of their ownership have exercised a great deal of control not only

on Railway development, but also on the financial administration of the undertaking. Both in the case of Railways worked by private undertakings and Railways worked by the Government themselves directly, the influence exercised by Government has been considerable.

Now this has profoundly affected the accounting system and organisation of the Indian Railways. The system on the State-managed Railways was perfected by the Railway Department of the Government of India and that on the Company-managed railways was regulated within certain limits under their contracts. These features have led to the development on the whole of a conservative and sound system of finance and accounting. Our railways have been singularly free from many of the evils of over-capitalisation and other financial ills from which the British and American railways have suffered in the past. Thanks to the conservatism and rigidity of our railway finance, Indian Railways have comparatively little water in their capital. But the anxiety to be safe and sound has led to an inelasticity of practice and elaborate and detailed regulation.

I have proposed to limit myself only to the human aspects. The importance of the human aspect here will be obvious if you consider that railway accounts by themselves have very little meaning except in the light of the human motives which affect the conduct of the operations of the undertaking and also the human medium with the aid of which we seek information bearing on the financial requirements of the enterprise. Now when a superior administrative authority lays down a principle or procedure and that authority happens to be the Government, the average employee will hesitate a great deal before disputing any of the measures which might have been promulgated by that authority. The tendency to produce an attitude of mind in such cases as this looking upon the State as the final authority which an employee would not find it easy to question has been inescapable all the world over. Under such conditions one is inclined to be passive and not critical of the system. Thus an instance to the point in this country is afforded by the accounting of the credits from released materials, minor works and depreciation since 1924. The manner in which the credits from released materials have been dealt with during the last ten years

is well known. Again the depreciation rules formulated in 1925 were, even before the late Sir Arthur L. Dickinson criticised them, known to have a tendency towards overcapitalisation. Although the defects of the rules were appreciated it took over a decade to introduce the sounder practice. All these are purely accounting questions on which professional judgment ought to be final. But it is not so easy for a State employee to adopt an attitude to these problems which his professional sense dictates. The position on the Company-managed railways is likely to be more favourable in this respect as their accountants may feel more unfettered to declare what their professional instincts indicated. They also have made a contribution which is no less important than that of their confreres on the State-managed railways. I have heard that the single ledger system in use on the South Indian Railway has recently attracted the attention of the State-managed railways.

It is important at the present time to develop and foster a higher professional sense among the railway accountants and auditors. The difficulties of distance and different administrations hampered the efforts of railways themselves in the past. On the State railways audit has been separated. The Institute of Railway Accountants and Auditors offers for the accountants and auditors a common meeting ground and through its Conferences, Journals, periodical lectures and examinations the Institute offers important services to the profession.

It is unfortunate that the value of institutional effort has not as yet as widely realised as it should be. Through pooling specialised knowledge and experience institutional effort enhances the professional efficiency and secures for all a higher social dividend. To secure these for the Indian railway accountants and auditors it is necessary to encourage group effort on all railways. This is precisely the main object of the Local Associations of the Institute."

After explaining the work of the Local Associations of the Institute at other centres Mr. Natesan appealed to the Officers and Accountants of the South Indian Railway to increase the membership strength of the Institute and to form a Local Association at Trichinopoly.

Rao Sahib M. Ramachandra Iyer, the Chairman, in concluding the meeting spoke as follows :

" We have now just heard a very interesting lecture by Mr. Natesan and I greatly appreciate it.

In the course of his speech he referred to the periodical Journals issued by the Institute of Railway Accountants and Auditors and the Single Ledger System of Stores Accounts and suggested that I would say a few words thereon.

I have been reading the Journals published by the Institute for a number of years and I can confidently say that I was much benefited by them. They contained articles from Railway Accounts experts and dealt with problems of great financial interest. Discussions of rules of allocation of expenditure and machine methods and allied subjects have been very interesting and useful. Mr. Natesan stated that criticisms of views were unlike Company-managed Railways rarely made by State worked lines. Where the rules issued contravene the general provisions of contracts, the Company-managed railways are inevitably obliged to carefully examine such questions.

With regard to the question of single ledger system of maintaining stores accounts, this formed the subject of discussion at one of the previous Conferences of the Institute. I felt that the opinion was generally more in favour of the system of maintaining combined numerical and priced ledgers at the depots themselves by a set of staff under the control of the Chief Accounts Officer. In my opinion, this system is simple, efficient and economical. I understand that this system of combined numerical and priced ledgers system is under introduction in at least one of the State-managed railways and I am sure it will give satisfaction.

Gentlemen, I thank you for responding to my invitation to attend this meeting to day. I thank the Agent and General Manager for having placed this Board room at our disposal for this meeting."

THE A. B. RAILWAY LOCAL ASSOCIATION.

The A. B. Railway Local Association had a meeting on Thursday, April, 25, 1940, at 5 P.M. in the Indian Institute Hall, with Mr. J. H. Bavin, F.I.R.A. in the Chair. Mr. E. R. Seshu Iyer, Director of Railway Audit and Fellow of the Institute who was at Chittagong on Inspection duty also attended.

After a group photograph of the Committee of Management and Tea the Chairman opened the meeting welcoming Mr. Iyer, Director of Railway Audit. The results of the Idea-competition were announced and the Director of Railway Audit gave away the prizes to the winners. Mr. P. S. Sachdev then read out his idea relating to the Centralization of machine work in the Audit Department. A discussion followed next centring round the necessity of giving the mechanics training in accounts and accountants training in machine technique. Mr. Seshu Iyer expressed his personal views on machine accounting in India and thanked the Association for the invitation.

NEW MEMBERS.

The Ballotting Committee of the Council have approved of the election of the following gentlemen to the class of membership indicated :—

Membership,—

- Mr. K. R. Sundaram Aiyar, Dy. Chief Auditor, S. I. Ry.
- " V. R. Riley, Asst. Auditor, S. I. Ry.
- " G. W. O. Moore, Asst. Auditor, S. I. Ry.
- " M. A. R. Sequeira, Asst. Auditor, S. I. Ry.

Associate Membership,—

- Mr. Supatinath Mitter, Supdt. Stat. Section, E. I. Ry.

The following gentlemen have been admitted to the Institute to the class of membership indicated :—

Membership,—

- Mr. S. Sundararaghavachari, Asst. Auditor, S. I. Ry.
- " S. S. Gore, Asst. Auditor, B. B. & C. I. Ry.
- " G. Venkataraya Pai, Accountant, Madras Port Trust.
- " Atma Ram Khosla, Asst. Audit Officer, G. I. P. Ry.
- " K. K. Roy, Asst. Accounts Officer, E. I. Ry.
- Rao Sahib K. S. N. Murthy, Asst. Auditor, B. N. Ry.

Associate Membership,—

- Mr. T. S. Subramaniam, Prob. Asst. Auditor, B. B. & C. I. Ry.
- " G. E. Robinson, " " "
- " T. P. Choudhury, Senior Accountant, Loco Audit, B. N. Ry.

Studentship,—

- Mr. Krishna Kishore Ganguli, Clerk, Est. Section, B. N. Ry.

CORRECTION.

On page 54 of the Journal No. 25, it was stated that a paper "The Structure of Traffic Accounts" was read by Mr. P. S. Sachdev. The paper was read by Mr. A. K. Shome, and Mr. Sachdev explained the application of the Powers Machines to railway statistical work.

RAILWAY STATISTICS

TABLE I.—TEN/ELEVEN DAYS APPROXIMATE GROSS EARNINGS
OF ALL STATE-OWNED RAILWAYS.

(IN LAKHS OF RUPEES)

Period.	Year.	
	1938	1939
Ten days ending 10th October	236	248
Ten days ending 20th October	259	270
Eleven days ending 31st October	270	272
Ten days ending 10th November	261	259
Ten days ending 20th November	254	246
Ten days ending 30th November	257	297
Ten days ending 10th December	..	..
Ten days ending 20th December	271	299
Eleven days ending 31st December	(1939)	(1940)
Ten days ending 10th January	271	291
Ten days ending 20th January	272	279
Eleven days ending 31st January	300	307
Ten days ending 10th February	277	276
Ten days ending 20th February	277	278
Nine days ending 29th February	264	307
Ten days ending 10th March	263	292
Ten days ending 20th March	275	312
Eleven days ending 31st March	321	322

TABLE II.—MONTHLY PROGRESS OF WORKING EXPENSES OF THE
PRINCIPAL STATE-OWNED RAILWAYS.

(IN LAKHS OF RUPEES).

Railways.	Up to October.		Up to November.		Up to December.	
	1938	1939	1938	1939	1938	1939
A. B.	70	71	80	79	89	88
B. N.	329	335	372	382	417	429
B. B. & C. I.	334	342	380	384	430	428
E. B.	232	240	264	269	297	301
E. I.	619	626	703	708	791	795
G. I. P.	405	391	460	448	516	504
M. & S. M.	221	220	251	250	279	280
N. W.	537	538	612	607	687	679
S. I.	167	163	191	186	215	210
Tirhoot & Lucknow Bareilly.	45	50	52	58	59	62
Other Railways	14	14	16	16	20	21
Total	2,973	2,990	3,381	3,387	3,800	3,797

TABLE II.—MONTHLY PROGRESS OF WORKING EXPENSES OF THE
PRINCIPAL STATE-OWNED RAILWAYS—(Contd).

(IN LAKHS OF RUPEES).

Railways.	Up to January.		Up to February.		Up to March.	
	1939	1940	1939	1940	1939	1940
A. B.	99	98	107	108	120	121
B. N.	465	483	504	533	574	607
B. B. & C. I.	476	470	515	515	582	582
E. B.	330	334	358	368	408	460
E. I.	880	876	959	960	1047	1,064
G. I. P.	570	561	621	617	691	696
M. & S. M.	307	309	336	342	379	380
N. W.	766	757	839	827	945	927
S. I.	235	233	256	256	286	289
Tirhoot & Lucknow-Bareilly.	67	68	76	75	88	89
Other Railways	22	22	23	24	28	29
Total	4,217	4,211	4,594	4,625	5,148	5,244

TABLE III.—PROGRESS OF UP-TO-DATE EARNINGS OF THE PRINCIPAL STATE-OWNED RAILWAYS.

(IN LAKHS OF RUPEES.)

Railway.	Total earnings for the period (ten/eleven days) ending						
	October 10th	October 20th	October 31st	November 10th	November 20th	November 30th	December 20th
A. B.	92	99	105	112	118	124	134
B. N.	98	105	111	117	123	129	140
	478	501	529	555	580	604	660
B. B. & C. I.	540	569	597	629	654	684	744
	598	629	661	694	727	760	828
E. B.	594	624	658	692	723	763	840
	287	306	326	347	363	378	415
E. I.	284	305	325	347	365	385	428
	1081	1141	1201	1259	1316	1372	1482
G. I. P.	1075	1142	1205	1263	1316	1378	1499
	644	678	715	749	783	820	894
M. & S. M.	373	391	411	429	449	467	509
	389	406	423	441	459	479	524
N. W.	825	870	917	960	1002	1050	1149
	782	826	872	920	964	1015	1118
S. I.	281	296	310	323	336	349	378
	281	294	309	321	331	345	375
Tirhoot & Lucknow Bareilly	104	109	114	120	126	132	143
	97	102	107	114	119	126	136
Other Railways	25	27	28	30	32	33	36
	25	28	29	31	33	34	38
Total	4788	5047	5317	5578	5832	6089	6628
	4807	5077	5349	5622	5868	6165	6759

TABLE III.—PROGRESS OF UP-TO-DATE EARNINGS OF THE PRINCIPAL STATE-OWNED RAILWAYS.

(IN LAKHS OF RUPEES.)

Railway.	Total earnings for the period (ten/eleven days) ending.						
	January 10th	January 20th	January 31st	February 10th	February 20th	February 28/29th	March 31st
A. B.	146	151	158	163	169	174	180
B. N.	133	138	145	150	155	161	166
	718	811	877	917	950	984	1,020
B. B. & C. I.	902	938	978	1,014	1,051	1,081	1,114
	920	956	994	1,031	1,066	1,104	1,145
E. B.	453	469	486	507	525	540	558
	469	487	506	526	543	560	582
E. I.	1,602	1,657	1,718	1,777	1,836	1,883	1,944
	1,626	1,684	1,747	1,811	1,873	1,932	2,002
G. I. P.	983	1,021	1,064	1,101	1,138	1,174	1,207
	1,015	1,059	1,104	1,140	1,186	1,229	1,265
M. & S. M.	555	576	598	620	642	661	681
	573	593	617	637	661	686	703
N. W.	1,258	1,310	1,362	1,409	1,454	1,489	1,532
	1,237	1,285	1,339	1,385	1,426	1,480	1,519
S. I.	408	421	437	451	465	477	491
	405	417	432	447	461	478	492
Tirhoot & Lucknow Bareilly	156	163	169	176	184	189	195
	149	155	162	169	176	182	190
Other railways	39	41	42	44	46	47	50
	42	43	44	48	49	51	54
Total	7,220	7,492	7,792	8,069	8,346	8,576	8,839
	7,400	7,679	7,986	8,281	8,560	8,867	9,162
							9,474
							9,435
							9,796

TABLE IV.—COMPARATIVE STATEMENT SHOWING THE PROGRESS OF UP-TO-DATE WAGON LOADINGS
ON CLASS I RAILWAYS.

Commodity.	Period ended.							
	October 10th	October 20th	October 31st	November 10th	November 20th	November 30th	December 10th	December 20th
Coal and Coke	5,84,114 .. { 1938-39 1939-40	6,18,944 6,40,010	6,51,031 6,78,848	6,82,391 7,16,411	7,14,339 7,47,816	7,45,111 7,82,173		8,11,984 8,47,986
Grain and Pulses	3,75,087 .. { 1938-39 1939-40	3,93,711 4,53,088	4,13,053 4,73,055	4,32,417 4,92,035	4,52,610 5,11,520	4,71,821 5,35,199		5,11,319 5,78,432
Oil-seeds	1,17,030 .. { 1938-39 1939-40	1,22,250 96,600	1,27,329 1,01,415	1,33,459 1,05,903	1,41,018 1,11,433	1,49,878 1,19,999		1,70,465 1,40,294
Cotton	61,518 .. { 1938-39 1939-40	65,530 71,146	70,164 75,599	75,172 80,279	80,317 85,067	86,307 92,134		98,900 1,07,778
Miscellaneous smalls	8,91,500 .. { 1938-39 1939-40	9,41,437 9,42,519	9,94,981 9,96,069	10,47,483 10,45,068	10,98,536 10,91,910	11,49,573 11,44,185		12,52,200 12,46,439
Miscellaneous full wagons	12,72,347 .. { 1938-39 1939-40	13,45,253 13,57,555	14,19,134 14,32,153	14,92,041 15,06,293	15,64,626 15,75,553	16,43,301 16,60,581		18,14,553 18,46,527
Home Line Stores and Ma- terials	2,28,237 .. { 1938-39 1939-40	2,40,423 2,55,320	2,52,146 2,68,413	2,63,900 2,81,838	2,74,980 2,92,077	2,86,002 3,03,083		3,08,378 3,24,736

TABLE IV.—COMPARATIVE STATEMENT SHOWING THE PROGRESS OF UP-TO-DATE WAGON LOADING
ON CLASS I RAILWAYS—(Contd.)

Commodity.	Period ended.							
	January 10th	January 20th	January 31st	February 10th	February 20th	February 28/29th	March 10th	March 31st
Coal and Coke	8,80,868 .. { 1938-39 1939-40	9,10,917 9,57,289	9,46,211 10,01,163	9,78,297 10,40,755	10,11,696 10,79,021	10,40,079 11,13,652	10,74,051 11,50,556	11,45,372 12,34,228
Grain and Pulses	5,57,254 .. { 1938-39 1939-40	5,77,239 6,37,259	5,99,068 6,61,119	6,19,703 6,81,671	6,40,661 7,04,552	6,58,120 7,25,473	6,79,456 7,45,162	7,24,745 7,92,799
Oil-seeds	1,95,303 .. { 1938-39 1939-40	2,05,972 1,72,116	2,16,891 1,83,286	2,26,311 1,92,277	2,35,349 2,01,559	2,42,815 2,12,035	2,51,558 2,18,441	2,70,485 2,35,216
Cotton	1,15,297 .. { 1938-39 1939-40	1,22,515 1,29,224	1,29,707 1,35,843	1,35,730 1,40,559	1,41,444 1,45,830	1,46,097 1,53,084	1,51,046 1,57,192	1,63,517 1,66,849
Miscellaneous smalls	13,59,700 .. { 1938-39 1939-40	14,11,054 13,94,316	14,66,286 14,44,862	15,16,621 14,95,908	15,67,538 15,45,511	16,08,782 15,94,867	16,56,332 16,43,256	17,05,929 16,95,674
Miscellaneous full wagons	20,14,157 .. { 1938-39 1939-40	21,12,662 21,61,300	22,26,684 22,70,946	23,22,866 23,68,575	24,14,868 24,70,798	24,87,791 25,82,572	25,64,361 26,79,841	27,37,816 28,84,073
Home Line Stores and Materials	3,30,315 .. { 1938-39 1939-40	3,41,018 3,63,669	3,53,109 3,75,952	3,64,911 3,89,008	3,76,169 4,00,609	3,85,542 4,12,134	3,95,281 4,23,749	4,20,776 4,47,487

CURRENT PERIODICALS.

Modern Transport, 1939—

September, 16.—*Railway Locomotives and Rolling Stock : Eastleigh Works, Southern Railway*, p. 3. September, 30.—*How to Save Fuel*, p. 2. October, 7.—*Goods Transport by Rail and Road*, L. Delanney, p. 5. October, 14.—*Road-Rail Transport*, p. 2 ; *Staff Appointments and Public Relations*, T. E. Thomas, p. 3. October, 21.—*Goods Transport by Rail and Road, No. 2—Rates Structure in Germany*, L. Delanney, p. 4. November, 11.—*Economies in Distribution*, p. 2. November, 25.—*British Railways, 1914 and 1939*, p. 2. December, 9.—*Transport in Canada*, p. 9. December, 16.—*Compensating the Railways for State Control*, p. 2 ; *Transport and the War : Minister's Speech at Institute of Transport*, p. 3 ; *Problems of Mechanisation : Meeting the Army's Requirements*, p. 11. January, 6.—*Transport Problems in Holland*, Professor E. R. Hondelink, p. 3. May, 18.—*The Future of Minor Railways, No. 1—General Survey of Position*, p. 3. May, 11.—*Ways and Means in Wartime*, B. England, p. 3 and 10. April, 13.—*Tube Train Service to High Barnet : "Rapid Transit" on L. N. E. R. Branch*, p. 3 ; *The Terminology of Transport*, Mr. Frank Pick, p. 7 ; *Railway Communications in Norway*, p. 11. April, 6.—*Freight Train Working in Wartime : Study of L. M. S. Operating Methods*, p. 3.

Journal of the Institute of Transport,—

Vol. XX, No. 9.—*National Aspects of Transport*, G. F. Bilbrough, p. 342 ; *Indian Railways : An Outline of their History and Development*, L. H. Kirkness, p. 368.

Vol. XXI, No. 2.—*The Functions of the Ministry of Transport in Wartime*, Rt. Hon'ble Euan Wallace, p. 43 ; *Housing the Staff of 120,000*, C. M. Hoffe, p. 55 ; *Transport and Insurance*, Henry R. Dean, p. 46.

Political Science Quarterly, Vol. LIV, No. 4.—

Autonomous Public Enterprise, The German Railways—I, Arthur W. Macmahon and W. R. Dittmar, p. 481.

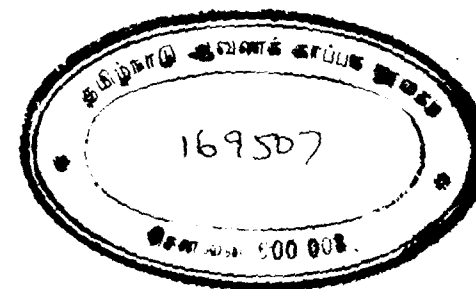
PART II]

CURRENT PERIODICALS

113

The Accountant, Vol. CII.—

The Accountant and the Law of Negligence, W. Sumnerfield and F. D. Reynolds—7, p. 31 ; 8, p. 76 ; 9, p. 141 ; 10, p. 199 ; 11, p. 257 ; 12, p. 290 ; 13, p. 381. *Gross, Net and Purchasing Power Yields*, Hugh Ferguson, p. 88. *The Government and Railways*, p. 166. *Ledger Posting under Accounting and Inflation*, Dr. T. Plant, p. 196. *Budgetary Control—Mechanised Accountancy*, J. C. Cadigan, p. 205. *Budgetary Control—*I. F. Bradshaw Makin, p. 227 ; II, p. 288 ; III, p. 349 ; IV, p. 372 ; V, p. 442 ; VI, p. 467 ; VII, p. 492 ; VIII, p. 527. *The American View of British Accounting Practice*, p. 254. *British Accounting Practices and the Profession*, T. H. Sanders, p. 65. *Railway Accounts in Wartime*, p. 318. *Independent Audits in America*, p. 370. *Liability of Auditors—The Canadian Case*, p. 525.



XLV 2 500 000

தமிழ்நாடு ஆவணக்காப்பக நூலகம்,
எழும்பு, சென்னை-600 008.

தவ னாணத்தாள்.

CG 616037 : 169 507

U. எண் 3435 180 ம2, 941

[illegible]

S.F. 259A-6 - 1,00,000 - 30-1-84.

INDIA'S GREATEST ACHIEVEMENT

The iron and steel industries and the Company that pioneered, developed and established them in India are today making unprecedented contributions to the country's progress. Industrial and commercial projects; railways, bridges and other communications; transport; building development; munitions... Impossible, indeed, to assess in terms of wealth how Tatas have served—and are serving—India.

... STEEL BY

TATA THE LARGEST STEEL UNIT
IN THE BRITISH EMPIRE

ISSUED BY THE TATA IRON & STEEL CO., LTD.

EAST INDIAN RAILWAY

**SPEEDING UP
OF DELIVERIES**

**MEANS
QUICKER TURNOVER!
USE OUR
FAST
Express Goods Service**

Between

**HOWRAH
&
GHAZIABAD
(For Delhi)**

**VIA GRAND CHORD
WITH AUXILIARY SERVICE
Between**

**MOGHALSERAI
&
SAHARANPUR**

SPECIAL ADVANTAGES

- Train arrives on scheduled time.
- Special consideration to nature of goods.
- Priority for long distance consignments.