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General Editor:

PROFESSOR B. V. NARAYANASWAMY NAIDU

ROAD RAIL TRANSPORT



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ROAD RAIL TRANSPORT

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(WITH SPECIAL REFERENCE TO CONDITIONS
PREVALENT IN TRAVANCORE, COIMBATORE
AND HYDERABAD)

BY

S. R. N. BADRI RAO, M.A., M.LITT.



WITH AN INTRODUCTION
BY

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INTRODUCTION.

WITH the increasing integration of our economic life the part played by transportation has been growing in importance. There has been an all-round increase in industrial activity, characterised by the inevitable trends in business cycles. The history of the first four decades of this century has been a history of peace and turmoil, of trade booms and depressions. But amidst this welter of confusion and chaos, humanity has steadily progressed. Nay, the very factors that threaten the foundations of our civilization have, in a way, set the pace of our industrial activity. In an atmosphere of suspicion and incertitude men and material have been devoted to ends that may prove destructive to civilization. There has been for this reason a quickening in the pulse of industry and trade, and the exigencies of a chaotic and belligerent world have led to a speeding up in production and distribution. A complete and efficient means of transportation, always so very essential for national economic development, has become indispensable now. In the matter of transport, roads and railways are the most important agents of progress.

For nearly a century now we have had to depend upon railways as our chief means of communication, and to-day they continue to hold their position of primacy. But, from the beginning of this century and specially after the Great War of 1914-18, a new problem has been set for the railways. The advent of the motor-car and its increasing use both for public and

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for private purposes have resulted in the gradual diversion of a good part of the traffic from the railways. This competition between the road motor and the railways was specially acute during the last decade, and so serious did the problem become that in 1933 the Government of India appointed the Mitchell-Kirkness Committee to investigate this problem and to study the extent of road-rail competition in the various British Indian provinces. Subsequently, the Road and Rail Conference sat in discussion over the question. The Otto Neimeyer Committee drew pointed attention to this disquieting situation and called for a thorough study of the question. The Wedgewood Committee was therefore appointed in 1937 for the purpose. On the recommendation of all these Committees we have had of late, a number of pieces of legislation directed to control the road-motor industry and to check the mal-effects of such competition.

The problem of Road-Rail transport has been one of burning interest, and it was with the idea of making a study of it that Mr. Badri Rao took it up for investigation under my guidance. The thesis which was the result of two years' labour, from September, 1937 to September, 1939, was submitted to this University for the research degree of Master of Letters.

In this book the author has made an earnest attempt to study his subject dispassionately. He has herein adopted the procedure of dividing his study into two parts, taking up the railways for consideration first and motor transport second. In the first part pertaining to railways,

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he has taken the railway problem in its entirety and has critically analysed the underlying basis of freight rates especially in the south of Madras in order to appraise their justifiability. In doing so, he has taken a few commodities for detailed investigation. He has followed this up with an incisive study of railway administrative policy and has subjected the various heads of expenditure to close scrutiny. The end he has kept in view has been to see how far railway rates could be further lowered by economic expenditure and sound policy. In order to make the study comprehensive and to point out how railway practice differs from theory, the author has taken great pains to clarify the theory and practice of railway rates. In his study of freight rates and administrative policy, he has also demonstrated, wherever necessary, the points of contact between theory and practice. In short, he has rightly sought to make this theoretical discussion serve as a background to what follows. Suggestions for the increase of receipts and revenue have been offered in the chapter on 'The problem of Increased Earnings', and the 'Conclusion' focuses attention on the correct policy to be adopted.

In his detailed investigation of road transport, the author has confined his study to motor transport, as the other modes of transport are not of equal importance. Nevertheless, he has, wherever necessary, dealt with the other means of road transport. The author has ably striven to study the operational basis of road transport alone, so that the question of road finance and the theoretical basis of taxation have not been gone

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into, as it would have inconveniently enlarged the scope of this study. In the first place, the position of the motor vehicle as a purveyor of transport and the factors underlying that position, have been looked into. He follows this up with a detailed and critical study of the costs of road operation and fares so as to enable a proper appreciation of their competitive ability. A valuable and illuminating survey of the transportation systems of Travancore, Coimbatore and Hyderabad has been made by him to show how smoothly well-organised transport systems could function; and a brief sketch of the London Passenger Transport Board is given as a foil. Finally, the need and method of control have been demonstrated, and in the last chapter a powerful plea for the co-ordination of the two means of transport has been put forward. The merit of the whole book rests on this study, as it consists of sound and thoughtful views based on an intensive study of two of the largest transport systems in the south of India. The surveys undertaken by Mr. Rao have been detailed. He has spared no pains in collecting all available information, and he has intelligently used his data to support his deductions.

The first chapter gives a bird's-eye-view of the existing facilities, and a comparison is instituted between the respective spheres of influence of road and rail transport. As the aim of the author has been to study the question just in those respects in which it affects the position of the two means of transport as they exist to-day, the historical method of treatment has not been given due prominence. None-the-less, this

method of approach has been adopted wherever it has been found necessary. The first chapter, therefore, sketches the development of road and rail transport, and commences with a short account of the importance of transportation as an agent in enhancing 'value' and shows how it is an integral feature of an exchange economy and how it leads to economic development. The author then traces the history of road-making and makes copious references to the road engineering activities of the Indian monarchs through the centuries and concludes that though the credit of having planned our present road system goes to our British administrators, India was famous for its roads even as early as the times of the Mauryans.

The early road policy of the British seems to have been largely dictated by military needs so that our present road system consisting of nearly 82,300 miles of metalled and 225,000 miles of unmetalled roads, has been the result of a long and laborious process of engineering. The author then proceeds to a discussion of the adequacy of our road communications and their place in our economy. He shows with the aid of statistics that the Madras Presidency is the best served Province in this respect, having an area of nearly 4.4 sq. miles for every mile of road. Over 50.3 per cent of the total area of the presidency is more than ten miles from any railway so that the dependence of the presidency on road communications is inescapable.

The responsibility for the maintenance of the roads is divided among the Public Works Department, the District Boards that look after

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the trunk roads, the Municipalities and the village Panchayats. Besides these, the Forest Department has its own small share of roads to maintain.

The cost of maintaining this extensive system which, it is shown, amounted to more than Rs. 150 lakhs in 1928, is met partly out of loans and partly out of revenue, though the major expenditure is from local revenue. In 1930-31 the expenditure from local revenues was more than Rs. 202 lakhs as against Rs. 29 lakhs from Provincial revenues. The loans are made by the Central Government out of the Road Development Fund, constituted, on the recommendation of the Committee on Road Development in 1924, out of the proceeds of the Central tax on petrol. The allocation of these grants would be seen to be on the basis of the Provincial consumption of petrol. The other heads of revenue are the tax on motor vehicles, Central as well as Provincial, the provincial duty on the retail sale of petrol, taxes on tyres and spare parts, etc. The author is of the opinion that the abolition of the tolls has led to a considerable shrinkage in local revenues. In consequence, the finance of local bodies has been seriously affected as is evidenced by the sad state of our roads to-day. He regrets the exemption of bullock carts from taxation and advocates a system whereby the destructive qualities of the narrow-tyred vehicle will be suitably taxed. He concludes by saying, "the need for constructing and planning new roads so as to give access to the interior to tap the rural parts is all the greater if the present motor competition with

the railways is to be eased. More than anything else, steps should be taken to improve the wearing qualities of the road and to introduce a new type of cheap road that would adequately meet the demands made by modern traffic on them."

Next follows a brief resume of railway development. Railway construction under State management and the guarantee system are described succinctly. The old guarantee system is criticised by the author on the ground that it checked the urge for economy as "the control exercised by the Government was general and the only incentive to economy was the probable share in the surplus." State construction was out of favour, earlier experience having proved that Government could not work on a commercial basis; so a modified form of guarantee was adopted in 1880. Together with this the old theory that only productive lines should be undertaken for construction under Government aegis was given up, and it was rightly felt that the State should take up the unproductive lines themselves, as private enterprise would be wary of such schemes. Branch line construction was aided with concessionary grants and guarantee of interest. The present heterogeneous railway system has thus been the result of a process of trial and error, and this could be attributed to both lack of foresight and continuity in policy.

A few paragraphs are devoted to a consideration of the relative spheres of influence of the road and the railway and to the measures the railways should adopt if they are to maintain their solvency. "The railways can no longer view with indifference the needs of the public.

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The days when they held almost a monopoly in transportation are gone. To-day, as never before, transportation needs effective salesmanship. The railways can only hope to better their financial position in two ways. Firstly, they should prune away their expenditure as the need for economy is great Secondly they should attract custom by offering facilities." Under the first head are advocated measures intended to make a better use of the rolling stock and to effect a greater economy in workshop organisation. As instances of the second are the quotation of liberal freight rates to facilitate traffic moving in bulk, grant of sites for industries and provision of railway sidings. The need for introducing new services such as express goods services, registered transit, containers and refrigerators, is abundantly stressed. In short, the author emphasises the dual aspects of the problem by pointing out that there is need for economising expenditure and for increasing the revenues.

The Road and the Rail as purveyors of traffic are complementary to each other as each has an important part to play in our transport economy. Every measure should therefore be devised to effect a co-ordination between these two services and in trying to suggest such schemes the author examines the case for voluntary co-operation, and the monopolisation of road services. He feels that the control of road motor transport should be intelligent and that the system of licensing and registration is fraught with the least inconvenience. "In the exercise of this control, the three guiding

maxims should be those of public need, 'priority of service and protection of rival interests.' A road monopoly is effective in doing away with inter-motor competition, but to be really useful it should be run as a public utility concern. A private monopoly may bring into being a new and far more serious type of competition. Thus control has to precede co-ordination and any measure intended to achieve this either voluntarily or statutorily deserves serious consideration. The sovereign end in view should be to give to the public the benefits of an efficient transport system while preserving to each its respective sphere of operation.

The second and third Chapters constitute an essay on the theory and practice of railway rates. The subject is not new, but it has been included in order to make the book comprehensive. The method of treatment is exhaustive. Chapter II examines the theoretical basis of railway rates and shows how they partake of the characteristics of 'prices' and are payments for service rendered. Being prices, they have to adhere to costs and it is in the determination of these that the greatest difficulty seems to arise. Railway costs are largely common such as the terminal costs, the expenses pertaining to the station staff, depreciation charges of the rolling stock and the wear of the track, besides a host of other expenses too many to enumerate. These have to be borne irrespective of the traffic carried. Another characteristic of railway costs is that they are largely fixed and these two factors together make it very difficult to apportion costs. Nevertheless, as the author goes on to point out,

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it is possible to alter the proportion between fixed and varying expenditure; and one method of effecting this, he suggests, is by increasing expenditure. In passing, a reference is also made to geographical control in railway expenditure.

Having postulated these characteristics of railway costs, the study of costs is pursued in relation to the cost of theory principle. In doing so, the connotation of the word 'cost' is intelligently gone into, i.e.; whether it should include all the expenses incurred in the service rendered or just the 'additional costs.' The idea of a margin in railway costs is carefully explored, and the view is expounded that "the guiding factor in rate fixation would be the extra expense that would be incurred in handling this freight, and any return that covers this out of pocket expense would be preferable to allowing the traffic to go elsewhere." The chief end in all transport undertakings is to get all the traffic available and in trying to do so the railways should offer special rates for particular kinds of traffic. It is in the practical application of the cost of service principle in rate making that its impracticability is made obvious. The points of criticism that are levelled against it are (1) that there could be no uniformity in the rate structure as costs would vary from place to place and time to time; (2) that it is impossible to determine costs even before the traffic is handled so that there is necessarily an element of arbitrariness in all cost accounting; and (3) that a rigid application of this principle would penalise agricultural and mineral com-

modities of low value and great bulk which in a country like ours form the bulk of railway freight. Though subject to all these drawbacks the cost of service principle is acclaimed as having the great merit of fixing the lower limit of chargeability.

Under the value of service, instead of rates being made to conform to cost, they are made to conform to value. Transportation creates and enhances utilities of time and place so that the net increment in value measures the extent to which the commodity could be charged. In short, this added value would set the upper limit; and, within the upper limit fixed by the ability to bear and the lower one set by the extra cost incurred in its handling, there is a margin which allows of commodities to be charged according to the value of the service rendered. The ultimate criterion is that of 'what the traffic can bear.' It is this "ability to bear" that is the bedrock of a sane tax policy and to that extent, the 'value of service' principle approaches the principle of taxation. Therein consists its virtue. Nevertheless, there is great need for caution in the arbitrary power to determine the particular class to which a commodity should belong, for it is capable of being well and ill used and much of railway case-law centres round the great question of discrimination.

The author then discusses the case of equal mileage rates and zone tariffs and disposes of them on the ground that the former does not take into account the physical basis of railway operation and penalises low-valued traffic, while

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the latter is impracticable and would work only under monopolistic conditions. A short reference to the 'agreed charge' is made, and the final conclusion is arrived at that in theory the best principle to be adopted would be to charge according to the value of service rendered taking also into consideration the lower limit of chargeability set by the cost of service.

The chapter on 'Rate making in practice' has been devoted to an account of the pitfalls that beset the railway in rate-making and shows how, occasionally, practice differs from theory. The treatment is complete and almost every aspect of the question has been dealt with. In doing so, the author has sought to strengthen his views by numerous references to railway operation and disputes abroad. America, Canada, South Africa and Australia are referred to, and in the absence of original documents the author has cited examples second-hand. The study, however, does not in any way suffer on that account, as the references are made only whenever necessary and are suitably acknowledged.

Dealing with the problem of the classification of goods, the practical difficulties arising therein are expounded. It is abundantly shown that classification is a matter of public importance in the conduct of which due consideration should be given to all interested parties so as to focus attention on the issue and to obviate any difficulties that might otherwise creep in. There could be no finality about it, since freight rates must be in accord with general business conditions. The Indian classification, it has been

shown, errs on the side of brevity, and though too great a uniformity is deleterious, an undue lengthening of the classes is not commendable.

The nature of railway rates is then described, and a more generous declaration of station-to-station rates is recommended in order to make the movement of freight traffic easy. The 'Schedule rates' are also dealt with and due regard has been paid to the various minimum weight conditions. The author shows that 'Exceptional rates,' are largely 'developmental' in character and are intended to single out particular commodities or industries for advantageous treatment. He further explains how the declaration of such concessionary rates is in the interests of the railway, as nascent traffic could be nursed and the benefit of a rate increase enjoyed when it has been fully developed.

'Distance' and 'volume' as factors influencing railway rates have been carefully considered. The distance factor is of special importance in vast countries like India and the relevant sections in the Canadian and North American Railway Acts have been referred to. The American Long and Short-haul clause has come in for detailed examination and the possible manner in which distance is responsible for the quotation of competitive rates has been investigated with great care. This inevitably leads to the discussion of through traffic, and the author, while decrying individualistic policies in rate quotation which only make terminal charges appear more progressive, makes out a strong case for the adoption of the continuous mileage principle in the making of rates for through

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traffic. As he says, "It is an axiom that railways are always subject to the law of diminishing costs and that, as a consequence, the longer the haul, the less must be the rate." But, when through traffic has to be considered a real difficulty arises, for the special maximum distances of each railway may be much below the minimum required for fixing through rates. Nevertheless, the need for fixing such a rate can hardly be emphasised too much in a country like India where freight traffic forms an important contributor to railway revenue.

The paragraphs dealing with the influence of competition in rate-making bear witness to a close study of the subject and of every aspect of the problem; competition between railways, competition between railways and other means of communication, competition between different routes and competition between different shippers for favourable rate reductions have all been elaborately dealt with. It is here that the author has relied on Jackman for his citations of American case-law. Inter-railway competition must be put down firmly, as an unnecessary duplication of services is condemnable. Road-Rail competition, especially on the passenger side, is now a problem to be reckoned with, and it is very difficult for railways to meet this competition as their high capital costs prevent them from meeting the low rates of the road haulers. In illustrating the influence of different routes in competition, the author refers to the competition of North Carolina and New England for the cotton of Georgia. With regard to the last type of competition the author says:

“ Market competition and competition of transportation facilities are inseparable. It is the conditions that prevail in the market that reflect themselves in the sphere of transport. Much of the competition that exists in the former is due to the grant of rates such as to suit their needs and to meet the particular conditions that call for adjustment.”

The chapter concludes with the section on discrimination. The different ways in which preference could be shown are next demonstrated. These consist (1) in the railways nullifying the effects of commodity competition through an equalisation of transportation costs, (2) in the declaration of special rates for particular commodities, (3) in wilfully allocating a commodity to a lower-rated class and (4) in so manipulating the time and conditions of such rates as to apply only to the particular traffic that is intended to be so helped. The case of the Bombay, Baroda and Central Indian Railway *vs.* the Grain Merchants of Ajmere is quoted as an instance of undue preference which was contrary to the meaning of sections 42 and 43 of the Indian Railway Act.

The main strands of thought are taken up in the last paragraph and the chief points are reiterated anew. The nature of railway rates is neatly summed up concisely thus : “ In short, railway rates are purely empirical, subject to change and they have got to harmonise with the general economic conditions; the purveyors of traffic are as much interested in their customers as the customers are in themselves,

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since their prosperity alone would ensure the prosperity of the transport agencies.”

The formulation of the theory of railway rates has been followed up by a study of freight rates in respect of a few commodities. The commodities chosen for such consideration are coal, tobacco, linseed, groundnuts and rice. The method of treatment adopted is comprehensive, and the importance of the commodity chosen for study is well brought out by a concise statement of its position in our national trade and a reference to such disabilities as it may be suffering from. This is strengthened by the aid of figures, and the chief merit of the thesis rests on the wealth of statistical data collected together. The author was seriously handicapped by the unencouraging attitude of the railways in the matter of statistical help so that he has had to rely to some extent on Governmental blue-books. There is nothing strange in this, as the Agricultural Marketing Department themselves recognised the dearth of information. Mr. Rao has, however, ably striven to gather such information as he could and has presented his case creditably. One remark must, nevertheless, be made here with regard to his deductions. The period of his investigations concluded with the September of 1939, though the thesis was actually presented in March 1940. The Syndicate of the University accorded sanction to the publication of the thesis sometime last August, and owing to pressure of work it was not possible for me to publish this work earlier. In consequence, the conclusions are based on the figures available upto the time of his investigations, when the

effects of the present world conflagration had not sufficiently worked themselves out. Much water has since flowed under the bridge as is evidenced by the present catastrophic fall in the price of groundnuts and the duty levied on rice by the Burma Government. Nevertheless, as we go to press brief notices of such trends in prices are made in the shape of footnotes to the text. The present tendencies, far from detracting from the value of the book, support the conclusions arrived at, for, if anything, they render the present freight rates more regressive.

Indian industry has to depend largely, if not entirely, on coal. The importance of the coal industry may be seen from the figures relating to it. The net output of coal in 1939 was 24,663,000 tons, representing a value of Rs. 8,69,62,000. There has been a fall in the output from the previous year's figures owing to lesser production from the Raniganj, Jharia and Karanpura coalfields. The decrease in value is to the extent of Rs. 76,65,000. In consequence of the increased demand for the mineral, the export figures rose from 2,207,000 in 1938 to 2,629,000 in 1939. The Chief Inspector of Mines in his report for the year 1939 remarks, "The market opened firm at the beginning of the year and prices were steady until the end of May, when the recurring annual wagon difficulty ceased and supplies were made in full against colliery indents. Demands then showed a considerable falling off, and in August prices had fallen considerably. Stocks began to accumulate at collieries and some concern was felt at the downward trend of prices. The outbreak of war,

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however, resulted in a sustained demand for coal and at the end of the year prices were more or less on the same level as in January, with stocks being rapidly cleared."

So important are the mining and transport of coal in the development of our industries that they are next taken up for detailed investigation.

The first half of this section is historical in treatment and the gradual development of the coal mining industry and the various changes in the freight rates are traced. The ability of foreign coals to compete with Indian coals is looked into, and the superior position of foreign coal in the Indian market is attributed to their low pithead price and to Government subsidy. In doing so, the cost of working the mines and the freight rates are dealt with. The conclusion derived is that unless the costs were more than halved, indigenous coal would be unable to meet the competition of the South African, Australian and Japanese minerals. The coal-mining industry already handicapped thus, had to face a serious situation on the outbreak of the Great War of 1914-18. The exigencies of war led to a great demand for wagons so that there was a reduction of about 75,000 wagons available for general traffic, whereas there was an increase of 73,000 in the case of coal traffic. Instead of devising means of easing the wagon shortage the Government sought to overcome the difficulty by raising freight rates; but this only checked Indian coal exports. The revised rates in April 1920 had, it is shown, the effect of penalising long distance traffic while there was a concomitant rise in the cost of working the mines. The

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effect of these combined forces, viz., wagon shortage, increased production, exports embargo and regressive railway rates, was to stultify the industry and to press it to demand for a reduction in freight charges. Some relief was afforded in 1926 when roughly a 10 per cent. reduction on long distance traffic exceeding 400 miles was granted. This small concession reflected itself in increased revenues to the tune of nearly Rs. 46.6 lakhs under this head in 1927-28.

Just at a time when the prospects of our coal trade were brightening, the precipitation of the world slump resulted in a shrinkage of our coal exports. Our exports in 1936-37 were nearly a third of those in 1928-29. Added to this Natal coal was gaining a foothold in the local market. On top of this came the crowning iniquity of a surcharge of 15 per cent. on coal freights in 1932. The subsequent alteration of this to 12½ per cent. in 1935 did not stem foreign competition. The author points out that the net railway freight rates for Poniaty seam coal at Bombay in 1936 formed nearly 42 per cent. of the F. O. B. price of Rs. 6. Notwithstanding the slight increase in rebate of 8 annas on coal exports to foreign ports, the industry continued to be in a bad way.

The author draws pointed reference to the wagon shortage on Indian railways and has anticipated rightly how very acute the position would be in the course of this war. He has based his deductions on past experience and on the figures of wagon loadings. The average of

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17,339 wagons loaded daily during the period ending February 1940 is a record. He has also examined the feasibility of quoting seasonal rates whereby industries could accumulate their stocks during the slack season. Finally, the present $12\frac{1}{2}$ per cent. increase in freight rates has been criticised on the ground of inexpediency.

The next two sections of the book deal with tobacco and linseed. Here too the same procedure has been followed. The importance of each crop has been shown with the figures for the acreage under it, and the total volume and value of the internal and external trade in them. Figures relating to the heaviness of the railway traffic in them are copiously given. This is followed up by a study of reigning prices as it is necessary in estimating the reasonableness of the rates charged. With regard to tobacco it is shown that the price depends upon the strength of the demand, which is greatest during the months of March to July, i.e., immediately after the harvest. There is also some traffic in tobacco during November and December, owing to the fact that sometimes tobacco is cured and then sold. In the case of linseed the price would seem to depend upon the comparative prices of other oilseeds such as mustard and gingelly which are used as adulterants. Having discussed the question of prices, the nature of railway rates is examined. Both schedule rates and station-to-station rates are referred to, and a number of rates are taken up for scrutiny. The incidence of freight rates on prices would necessarily differ in different cases, being higher in the case of short-distance traffic. In the case of broken

tobacco, to the shipper from Guntur to Lahore the incidence works out to as high as 150 per cent. Contrariwise, for shipments from Mysore to Bangalore, it works out to only 2.5 per cent. In the case of linseed, the incidence would roughly be between 10 to 15 per cent. Here, however, it is interesting to note that it would be cheaper to ship the commodity as such, instead of first crushing it and sending it as oil.

The author's general conclusion is that every reduction in the incidence of freight rates on prices should be welcomed, though that rate may vary with the distance covered and the quality of the commodity shipped.

The groundnut occupies an important place in our economy and there is a very rich trade in it in the Madras Presidency. In 1936-37, there were 3,427,000 acres under this crop in this Presidency with an estimated yield of 1,652,000 tons. The year 1937-38 proved to be a record one for the crop and the net out-turn was 3,501,000 tons. In 1938-39 our exports, however, of this oilseed amounted only to 8,35,000 tons. Further there was a shrinkage in the foreign demand, so that there was a very sharp fall in price from Rs. 36-1-4 in 1936-37 to Rs. 24-4-0 in March 1938-39. At the time of writing, the prices were fairly steady though below the figures of the previous years so that the author says, "During the last two months of 1939, the market for groundnuts was fairly steady. The average wholesale prices for standard varieties were, for a candy of 530 pounds between Rs. 28 to Rs. 30-15-0 at the various centres on the 30th November, 1939. The prices on the 22nd December fluctuated within

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a very narrow margin, the prices for the main producing centres being Rs. 28-0-0 and Rs. 28-2-0."

Notwithstanding this early steadiness, there has since been a cataclysmic fall in prices, and the outbreak of the present war has had far-reaching consequences so that the groundnut trade has been almost crushed out of existence. In 1938-39 the exports to Belgium, Italy, France, Germany and the Netherlands nearly amounted to 70 per cent. of our total export trade in that commodity. All these markets have now been lost to us. In consequence, the Government were asked to fix a minimum price for groundnut and it was fixed at £10-0-0 per ton in consultation with the Food Ministry. This acted as a palliative for a short while, but as the Food Ministry would not increase its purchases the landslide in prices continued and reached the low level of Rs. 20-0-0 per candy at the ports. So unprofitable did it become that cultivators could realise only about Rs. 12-0-0 per candy after meeting freight rates, landing charges and market dues, whereas the actual cost of the unirrigated crop amounted to nearly Rs. 20-0-0. In South Arcot, which is one of the chief groundnut producing areas, it was cheaper to sell imported oil at Rs. 3-0-0 per ton than local oil, and many instances have been known wherein oil presses have been sold for scrap.

The groundnut position was causing serious anxiety. The Government convened a conference to discuss methods of restricting the acreage under this crop, and in the conference

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it was proposed to compensate groundnut cultivators by the grant of a specified sum as subsidy. In order to provide the necessary funds for this, resort would be had to the rebates now being levied by the Central Government at the rate of 25 shillings per ton on South Indian shipments and 15 shillings per ton on Bombay shipments.

In view of these developments the opinions expressed in the text of this book need considerable modification. But these in no way affect the general conclusion that the author has derived in regard to the regressiveness of freight rates on groundnuts. On the other hand, they only strengthen his case for rate reductions and preferential treatment as the incidence of freight is bound to work greater hardship with the fall in prices.

The need for including a section on "Rice" is obvious, as India, besides being one of the largest rice-producing countries, is a large importer of foreign rice, principally from Burma. In the decennium ending 1935-36 there was an acreage of nearly 80 millions under this crop in India, whereas the figures for Madras Presidency alone amounted to nearly 9·8 millions. In 1937-38 the percentage under this crop to the total area under all crops was 27·5. India is, however, on balance, a net importer of rice. The export figures given in the text of the book refer to a ten-year period ending 1935-36, i.e., prior to the separation of Burma. The imports of Burmese rice have been continually increasing and the position as it affects this Presidency has been clearly described. A short historical sketch

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of the trends of the foreign trade of this commodity has been included, and this aptly leads to a consideration of the measures devised by the Government of India in checking foreign imports. It would be seen that, whereas in 1937-38 we imported Rs. 10.98 crores worth of rice from Burma, our imports of the same in 1939-40 increased by nearly 50 per cent., to Rs. 16.65 crores. The main cause of this has been the remarkable failure of the Indian crop in 1938-39. The net out-turn of the crop in 1938-39 was nearly 23.6 million tons as compared to 26.8 million tons in 1936-37.

The author has instituted a study in prices and, with the aid of price indices for various varieties, has shown how, owing to the cheap imports, prices have steadily declined. Added to this, "the rigidity of the land revenue, despite some remissions and concessions, has hit the impecunious agriculturist very hard." However, for the past three years the prices have been fairly steady, the January quotation in 1939 being Rs. 3-12-0 for a maund at Calcutta. This has been attributed to the changes in the price of Burma rice, brought about by the general price-increase in every sphere of industry and trade.

A number of freight rates pertaining to rice have been taken up for detailed consideration. These are instances of short distance and through traffic; and the incidence of particular freight rates on the prices of particular varieties has then been investigated. The incidence of the rate from Gwalior to Cuddalore has been calculated at 20 per cent. and that of the rate from Coconada to Tuticorin has been found to be

20 per cent. The comparative basis of long and short distance rates is next examined and the view is held that though the incidence in the case of short distance traffic is less, actually, however, it is more regressive in character. The general conclusion is that "commodity grain movements do not take place between primary markets but between the producing centres and the main distributing centres. In India these are invariably long distances apart so that there is great need for the lowering of rate charges on long distance traffic, especially since it (rice) constituted our principal food grain." This observation is very interesting in view of the duty on Burmese rice exports. The Burma Government seem to hold the view that the export duty would affect only the Burmese shipper but it needs no stretch of imagination to see that the duty will not stick. The incidence would be shifted on to the ultimate buyer, i.e., the Indian importer and this would necessarily leave a smaller margin for the payment of railway freights. A great change in the freight position would therefore be very desirable.

The dependence of freight rates on costs necessitates a study of railway policy in regard to expenditure and this the author does in the chapter on "Some Aspects of Railway Administration." This chapter is devoted only to those aspects of the problem which affect railway revenues. It commences with a brief history of the financial position of Indian railways after the separation of the Railway Budget. The effects of the depression are nowhere more pronounced than in the case of the railways.

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“The depression period has been one of lean financial years during which, in spite of the best endeavours of the transportation agencies, deficit budgets have been the vogue.” With the revival in trade and industry the position improved but it has been followed by the stress and strain of the present world conflagration. In 1925-26, for example, the gross revenue receipts of all railways were Rs. 99·71 crores. In 1927 they rose to 104·34 crores and in 1932 they reached the lowest figures, *viz.*, 85·58 crores. The year 1936-37 marks the increase in receipts to over Rs. 101 crores and this progress has been steadily maintained. The author has gone into the main problem of railway administration and has carefully analysed railway revenues, working expenses, passenger and goods earnings and has dealt with the question of strategic and branch lines. In doing so, he refers to the debated question of the interest charges which in 1939 reached the figure of Rs. 28·96 crores. While agreeing that a slight reduction in the rate of interest would mean a great saving in expenditure under that head, the author feels that such a procedure would not be generally feasible. Viewing the whole question dispassionately, he thinks that these charges are a necessary payment to the capital at charge and he does not decry the foreign nature of the capital. “All new enterprises,” he says, “are risky, more so railway construction whose financial prospects cannot be gauged at the beginning; . . . foreign capital was invested at a time when the risks entailed were greatest and the ground had to be cleared before the railways came to be recognized as a sound financial venture.” He then adds

“Blind criticism is, therefore, a fallacy. In the dispassionate study of problems of economics, politics should not jaundice our vision.”

Branch line policy, in view of the recent developments, has been one of growing importance. In the beginning it was not looked upon with favour as the traffic expected was light. Private enterprise was tardy in appearing so that the Government had to make the terms of contract sufficiently attractive. For doing this the persons best fitted were the main-line companies for they could take advantage of the traffic interchanged between these lines. A branch-line, by its very nature, cannot be expected to be as profitable as a main line, and in this study the author discusses the question of the basis of rate-making on branch-lines. The position to-day is disquieting as the rapid and increasing competition of the road-vehicle has led to a serious diversion of passenger traffic from the railways. However as the sphere of influence of the motor is within a fifty mile radius it would seem that the road vehicle has a legitimate part to play in the offering of transport facilities. The financial prospects of certain branch lines are so uncertain and discouraging that the Government has seriously contemplated dismantling them. At present nearly 260 miles of branch railway have been dismantled and the rails have been shipped abroad for purposes of war. The cost of these, together with the incidental costs of dismantling and transportation will be entirely borne by His Majesty's Government. The following are the lines so dismantled: Dalmat—Daryapur (14 miles);

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Akbarpur—Tanda (1 mile); Bijno—Chandpursian (21 miles); Cocanada—Kotipalle (29 miles); Shoranur—Nilambur (41 miles); Dawwa—Pusad (43 miles); Cawnpore—Kairada (81 miles); and Lyalpur—Saranivalla (2 miles). The original proposal to include the Kalukhat—Bhatiapara, the Bariava—Vadtal and the Vasad—Kauhara lines of 57, 4 and 27 miles respectively has been temporarily held in abeyance. As early as 1933 the Mitchell—Kirkness Committee made a detailed investigation of the proposals submitted to it for branch-line construction. “It classified the projects into six categories as (1) those that could be abandoned in favour of good roads (2) those which probably cannot be justified owing to the existence of good roads (3) projects probably justified by traffic offering, especially heavy merchandise even where good roads exist, (4) those that may be required urgently as through-connections, (5) projects which may be required as through-connections and (6) those which can be abandoned for various reasons.” It is with regard to the last that there has been considerable controversy. The chief reason for the dismantling of the railways is their unremunerativeness. It is also felt that the existence of other means of communication makes them unnecessary. The real question is whether these lines are superfluous. In trying to gauge their financial worth, the return should not be calculated on the basis of the capital at charge but on that of the depreciated value. The chapter concludes with a sketch of the functions of the Federal Railway authority.

In the chapter on "The Problem of Increased Earnings," an attempt has been made to suggest ways and means of increasing receipts. The need for the establishment of a Research Department which would actively interest itself in the commercial needs of its clientele is first stressed. A plea is made for a closer contact with the public and the provision of larger facilities. These largely consist in electrification of services, pooling of traffic, simplification of clerical formalities, publication of goods timetables, speeding up of services and similar measures. In recommending electrification, the comparative costs of steam and electric power are referred to and it is concluded that though much cheaper and more convenient, electrification in India would be possible only with regard to suburban services.

With regard to revenues, the author cites the very interesting suggestion of Mr. Farrar for issuing track-contracts to select users. The railway it is suggested, should also take upon itself road powers and arrange for goods being delivered at the consignee's door. In passing; the author remarks that all expenditure should be wisely undertaken with the single eye to maximise receipts. Lastly, stress has been rightly laid on the need for a nationalistic policy in freight rates and the view is held that only by nationalising the railways will industrial progress be hastened.

The presentation of the Railway Budget for the year 1940-41 raises very interesting questions about railway policy. The effects of the present war are observable in every sphere of railway

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administration and should serve to show how far the anticipations of the author have been justified. Taking the State-owned lines for consideration, we find that there was a net surplus of Rs. 4·3 crores which was contributed to the General revenues. This surplus was above the total expenses including depreciation and interest charges. The surplus was largely due to an increase in goods earnings resulting from an increased flow of traffic and the enhancement of railway freight rates. Though passenger earnings fell from Rs. 30·73 to Rs. 30·47 crores, goods earnings rose from Rs. 68·57 to Rs. 72·56 crores. The earnings from rice, coal and iron and steel traffic have been a record for the decade. Side by side with this, efforts have been made by the railways to increase traffic receipts and many of the improvements recently adopted by the railways are on the lines indicated by the author. These largely consist of more detailed 'job-analysis,' speeding up of trains, intensive use of railway stock, employment of Diesel cars and Sentinel coaches to meet road-motor competition and the giving of greater attention to the comforts and conveniences of passengers and the transporting public.

The year 1940-41 has been a good year for the railways, as the traffic receipts are expected to be Rs. 109·25 crores, *i.e.*, Rs. 11·5 crores above the figures for 1939-40. Needless to say this has been largely due to the increase in freight rates though, in contrast to the previous year, there has been an increase under passenger earnings also. The surplus of Rs. 14·59 crores is a record

for the period, since the separation of the Railway Budget. Referring to this Sir Andrew Clow says, "Our profits are, in a considerable measure, the result of traffic, more or less due directly to the War and thus represent a devastating sacrifice not merely of property but of life and welfare." These increases, it is interesting to note, are due to the general economic conditions that have affected every branch of industry and trade. The expansion in business has been immediately reflected in an increase in coal traffic. Earnings have also been largely augmented owing to the weakening in the competition of coastal shipping and road-motor transport. But the most interesting thing is that, consequent on the increasing cost of motor fuel and accessories and the necessary rise in the operating costs of motor transport, the Railway have no longer felt themselves compelled to lower their rates to meet the road-rates. Especially so is this the case in the Madras Presidency where, owing to the tax on the sale of Petrol, the Madras and Southern Mahratta and the South Indian Railways have withdrawn some of their concessionary rates. In spite of these adventitious circumstances the Railway Member does not seem to view with favour any reduction in the rates and fares now charged. The only hope he holds forth is a 5 per cent. reduction in the surcharge on coal during the months of April to October intended to ease the wagon shortage. Recognising as he does, that his proposals will not be agreeable to Indian industry, he commends them to our acceptance on pragmatic grounds, as "the alternative to an arrangement such as we propose would be an

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even heavier burden on the general tax-payer than he must in any case be called upon to bear."

The second part of the book deals with the problem of Motor transport and the merit of the book rests mainly on this. The work undertaken here is new and original and the conclusions deduced therein are bound to be valuable and interesting. For this purpose the author undertook intensive surveys of the transport systems of Travancore and Coimbatore. These surveys were carefully planned and he has been successful in collecting a wealth of information which he has used as the basis of his study. It may be said without exaggeration that few people have undertaken such extensive field investigations. The Travancore system was taken up for study as it affords an excellent example of a State-undertaking. The United Motor Service of Coimbatore was chosen as it represents one of the best-planned systems under private management. This has enabled a comparison between State and private operation of road services and the comparison does much credit to both.

The Travancore survey was undertaken almost immediately after the commencement of the operation of the Service, so that the figures collected refer to a period of six months. The author satisfied himself about everything he observed in every department of the system and learnt the entire procedure followed there. The Audit side of the Transport Department is highly perfected so that the details of procedure had to be carefully studied. With regard to the routes operated, the number on the roads and

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the conditions before and after State monopolisation, a little difficulty was encountered in collecting data from the various registers of the Police Department. Sometimes the author found that the figures did not always tally, and thus slight discrepancies were observable. While the fullest and the most accurate data could be had for the State Transport system, similar details about the private undertakings that operate in other parts of Travancore were not available.

The survey of the United Motor Service was also comprehensive, but being a private company run on competitive lines, the financial aspects of its working were not disclosed. This system is one of the very largest in India and operates 47 routes in the districts of Coimbatore, Madura, Trichinopoly, the Nilgiris and South Malabar. It operates both as a co-ordinated service and as a competitive service. On certain sections, especially in the west of Coimbatore it competes with the other road services as well as with the Railway. But elsewhere it is run in co-ordination with the South Indian Railway. There are three important out-agencies at Tirupur, Gobichettipalayam and Darapuram, besides others at Vannathurai, Valparai, Palladam and Satyamangalam. In these areas the United Motor Service is the chief road operator and combines the efficiency and precision of the railways with the flexibility and ease of the road. Dharapuram is the most important out-agency on this service and much valuable information was obtained there.

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The author was desirous of conducting a personal survey of the Hyderabad system as it was the pioneer in State monopolisation. It was not possible to do so as the Government of H. E. H. the Nizam sent a few reports stating that all the information could be had therein. The Hyderabad system differs from the Travancore system in so far as it is a monopoly of the road and rail services and covers a larger number of routes. The information gathered has been very valuable and the author has sought to institute a comparison between the Travancore and the Hyderabad systems.

In the chapter on "The Economy of Motor Transport" the author discusses the place of the motor vehicle in transportation and compares it with other means of transport. This study is also sought to serve as an introduction to the problem of motor transport. In doing so, the trade in motor vehicles has been considered. The figures for the foreign trade have been included so as to clarify the position of the various foreign countries in the home market. The general trend, the author notes, has been towards an increase in imports from the United Kingdom. The imports from Britain rose from 3,645 in 1928-29 to 5,119 in 1938-39. In 1934 ten per cent of United Kingdom exports were absorbed in the Indian market. There has been an increasing demand for motor vehicles in this country so that the prospects of starting an indigenous industry are bright. Sir M. Visveswarayya has been expounding the possibilities of such a scheme, but the

unencouraging attitude of Government is a matter for grave concern.

The demand for motor vehicles depends upon a number of factors; ease of operation, low operating costs, the possibilities of working the best-paying routes, and convenience. As has been pointed out, the motor vehicle is increasingly becoming a ' style ' product, so that a fleet of motor vans has its own advertisement value. This is specially so in the distributive services. Under the conditions prevalent in India, passenger transport forms the bulk of motor transport. With an increase in its demand and with the general growth of trade there has been a similar increase in the trade in re-sales. Interesting figures relating to this have been given by the author to show the extent of the trade in other countries. The system of instalment purchase has also increased demand by facilitating purchase. In spite of this, the number of cars in India is exceedingly small and the author has worked out the average at 1 in 2,000.

After discussing the place of animal transport, bullock carts and tramways, he sums up the position of the motor vehicle thus: "The motor bus is especially suited for urban transport. Adequate, cheap and efficient transport facilities are an essential requirement of urban life. With the increasing pressure of population in the towns the natural tendency has been for people to spread out into the suburbs. The expansion of suburbs is for the benefit of the people since it brings with it the advantages of

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a healthier life. Living in the country is always a sign of affluence. House rents are lower since land values are less and it would be easier to maintain a larger house than would be possible in the city—but suburbs will grow only if cheap and quick transport facilities are available. The motor vehicle has both these advantages. It is quick, because not much time is lost in taking up passengers or setting them down, and it is cheap since the bulk of expenditure is attributable to the actual working. For rush hour traffic the omnibus is the most suited. The railways by themselves would find the task impossible and the tramways are slow and inflexible.”

While justifying the need for the control of motor transport the author feels that it should be allowed to expand as it is the agent best suited to link the rural parts with the markets. He therefore feels that the abolition of tolls has conferred a great benefit on long distance motor traffic. At the same time he seems to be of the opinion that the bullock carts should make some contribution towards the upkeep of roads. Against this view it may be said that, as the agriculturist is already very much in difficulties, additional levy would cause him greater difficulty. However, the author's contention that, instead of overcrowding a few urban routes, rural services could be popularised through concessions in motor vehicles taxation, should draw the serious attention of all thoughtful students of the subject.

In judging the comparative costs of road and rail transport Mr. Badri Rao has made an elaborate and detailed study of operating costs

in Chapter VIII. He examines the transportation costs one by one before he takes the question of rates and fares. The investigation commences with a study in capital costs. These, he shows, are much less in road-transport than in rail transport. But even here the expenses of a one-man unit differ from those of an organised system. The owner-driver has no expenses to incur, barring the cost of his vehicles. He has no office to maintain nor does he need a workshop. Run on individualistic lines, such operators offer the stiffest competition by working on an uneconomic basis. On a unified system, however, the expenses are bound to be much higher. The capital expenditure of the Travancore system is shown to be Rs. 6,03,688-11-8 and that on the Hyderabad system, Rs. 9.70 lakhs in 1938 alone.

The author then takes up for consideration monthly, weekly and daily expenses of operation. He gives the figures under each head; *viz.*, petrol, oil and grease, tyres and tubes, spare parts and batta and then calculates the expenses per mile on each of these. In doing so he expounds the superiority of a 'per mile' calculation over a 'per cent.' calculation. "There are, in the running of any service, a number of miles that are 'dead,' yielding no return. This might be either due to the fact that there has been some breakdown somewhere, in which case the return haul has to be empty, or that no traffic is offering on the return journey. Apart from dead mileage, deductions have to be made for service mileage—as on trial runs or journeys from and to the garage, etc. It is only when deductions

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have been made on both these counts that the actual paying mileage could be arrived at. In the absence of such exact figures, it would be a fallacy, as is actually done, to credit the total earnings to the total mileage run."

The expenses per mile have been deduced for each item of expenditure. These are found to vary slightly. With regard to fuel consumption, the figure arrived at is 14 or 15 miles per gallon; this, it has been calculated, would work out at about Re. 0-1-6 per mile, *i.e.*, Re. 0-1-5 on the shorter and Re. 0-1-7 on the longer routes. Expenses under oil have been calculated at about 1-2 pies per mile, while tyres and tubes would work out at about 4-5 pies per mile. A similar figure is arrived at in the case of spare parts. Viewing the total operating expenses as a whole, the expenses are shown to be roughly Re. 0-2-9 per running mile. In order to strengthen his conclusions, the author compares his figures with those of Messrs. Gadgil and Gogate.

The expenses of depreciation are next considered with special reference to the Travancore transport system. The depreciation allowed on the rolling stock seems to vary on different undertakings. In Travancore the percentage is at the rate of 25. In this connection the method by which the licensing authorities gauge the life of a bus is referred to. The usual limit is set at four years, though the question of deciding the road-worthiness of a vehicle is left to the discretion of the Transport Boards. Actually the road operators believe that ten years could be taken as a fair average. It is therefore felt that by

prematurely condemning vehicles as unroad-worthy, the transport concerns are put to considerable difficulty in addition to taxation. Taxation of motor vehicles is so heavy to-day that many operators have been swept off the roads. So high is it that in five years' time the amount of taxation would far exceed the original cost of the vehicle. This is so because of a plurality of taxes levied:—motor vehicles taxation, import duties on vehicles, duty on spare parts, tyres and tubes, central duty on petrol and the provincial tax on the retail sale of petrol.

The study of transportation concludes with rates and fares and profits. The basis of charging does not seem to be uniform, being less on short distance-traffic and more on long distance. In Travancore the rate of charge is 8 cash per mile whereas in Hyderabad it is 6 pies per mile in O.S. currency. On the United Motor Service of Coimbatore the short distance charge is roughly about 3 pies per mile and that on long distance traffic 6 pies. The effects of road-motor and inter-motor competition are observed, and the author has shown how in areas almost entirely dependent upon road communications the rates are much more uniform than is the case with areas served by a railway. He has also shown that when an important out-agency town in a road system is linked with a rail-head, the rates taper more towards the rail-head than *vice-versa*. In exemplification of this he has taken a number of routes and studied the rates charged at the intermediary stations and has deduced his conclusions from them. This is the one and only correct way to study the influence

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of competition—competition between places, competition between different means of communication. The adoption of this method in studying railway rates is highly commendable and Mr. Rao is one of the very few people in India who have applied this principle to the conditions of road motor transport. His surveys covered passenger traffic, and he has dealt with the freight side of the question also and has made a comparison between road and rail freight rates. This comparison is much in favour of the road services, for, apart from the lower rates possible in motor transport, the elimination of incidental charges of cartage, handling and packing make road-rates appear more favourable. For a comprehensive and detailed study of this subject, full and accurate statistics are essential. The author complains about the non-observance of the fundamental principle of book-keeping in the case of the smaller units. This evil seems to be persistent, as investigators, both official and non-official, have frequently remarked on the dearth of such information. Nevertheless, if the larger motor concerns and the railways adopt a more charitable view and appreciate these investigations pursued purely out of academic interest, much could be done in judging, with a fair approach to exactness, the sphere of economic influence of either means of transport. Further, it would enable all future legislation affecting either of them being directed along proper lines.

The succeeding four chapters of the book are descriptive and give a bird's-eye-view of the administration and development of the Travancore State Transport Department, the

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Hyderabad State Transport system, the United Motors Service of Coimbatore and the London Public Passenger Transport Board. The chapter on the Travancore system is detailed as the author had the opportunity of getting firsthand information on every aspect of administration and control. He starts with a picture of the position of the motor transportation industry in the pre-monopolisation days and shows the number of services operating on the various routes. It would appear that there was acute competition on some of the most paying routes. Such competition does not seem to be altogether absent on those routes which are beyond the sphere of operation of the State monopoly. To portray the present position, he has given a detailed list of the number of routes served and the degree of competition thereon. Considerable work was involved in the collection of these figures, as the ledgers of the Police Department had to be carefully gone through and sometimes the figures in one book did not agree with those of another because of some slight difference in the method of book-keeping.

The position after monopolisation of the eleven main routes reflects much credit on the administration. The net profits for the first six months of operation are seen to be nearly Rs. 61,000. The service now rendered is regular and adequate and the end kept in view has been the provision of enough services to draw all the traffic offering. It is interesting to note that a separate department deals with traffic returns and the daily flows of traffic so as to gauge the

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demand for transport. Apart from the transportation side of the problem, the manner in which all the information is neatly indexed and collected together is praiseworthy. This, however, does not seem to be unique, equally detailed figures being collected together on the United Motors Service of Coimbatore. However, the recent closing down of the statistical branch at Coimbatore is to be regretted.

The three transport systems surveyed are all examples of efficiently run undertakings. The Hyderabad system is a pioneer in the field of road-rail co-ordination. The roads and the railways are administered under the same department, and the total route mileage of the former was 4,069 in 1938-39. There is also considerable freight traffic which accounted for a net earning of Rs. 94,493 in 1938-39. There were twelve out-agencies in 1938-39, which handled a traffic of 30,648 tons. Nevertheless, as in Travancore, the State has not monopolised all the routes, so that there is keen competition on the routes open to private operation and during this year there was a net loss of Rs. 56,756 in operating the road services. In Hyderabad, it will be seen, the Government after monopolisation raised the basis of road-charge to six pies per mile in order to divert traffic to the railways. The end in view has been to make the more profitable routes pay for the less profitable ones.

Whereas Hyderabad and Travancore are examples of State enterprise, the United Motors Service of Coimbatore represents a private commercial body catering to the needs of a large district and connecting it with out lying

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districts. The growth of this concern has been phenomenal. The Managing Director of this huge organisation started the concern as an owner-driver. In 1939, the number of vehicles rose to 140 and the total investments exceeded Rs. 10 lakhs. This system was taken up for investigation because it shows that any transport undertaking, whether a State monopoly or a private organisation, can meet our needs if it is run on broad principles of public utility.

The last three chapters of the book deal with the need for and the methodology of control of motor transport. The chapter on the "Organisation of control" is a general treatment of the policy to be adopted, whereas the two succeeding chapters pertain to a study of control as it is exercised in Madras and elsewhere. In the former, a brief sketch of the conditions prevalent in the days of unrestricted competition precedes an enunciation of the principles of control. Arguing the need for control the author says, "The protection and preservation of the highways is one of the cardinal duties of a public body and it lies within the power of any State either to allow or to withhold permission to operate on the roads. Using the language of jurisprudence no one can have the 'right' to make use of the road for transport operation; it is a privilege, and, as privilege is most likely to degenerate into misuse, some sort of check has to be exercised. This can be done by a variety of ways; taxing vehicles, making it obligatory on the part of the transport carriers

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to take out licenses for their vehicles and permits for operating on the highway; placing restrictions on the dimensions of the vehicles and prescribing the maximum weight." Taxation has been accepted as a justifiable method of control but, as the author points out with the aid of facts and figures, taxation in the Province of Madras is exceedingly high. In addition to this, the police regulations are so rigid that one feels that there is too much of road-motor control in this Province.

Licensing of routes is the best way to apportion traffic. Thereby effective check could be placed on the even distribution of traffic, as duplication of services could be obviated and operation of the less paying ones encouraged. "In transport, as in currency," the author says, "the essential validity of Gresham's law is inescapable. The disorganised competitor who is prepared to cut his rates so fine as to drive off his competitors, subsequently thrives upon the wreck of these."

Great care is needed in the exercise of such control. Transport is a public service so that the needs of the public have to be first satisfied. Public need having been established, the next duty of the transport authority should be to safeguard public safety. This is effected by the police restrictions on speed, weight, etc. Thirdly, in the grant of licences, not only has priority of service to be considered but also whether the service rendered has been regular and adequate. The ultimate goal should be the elimination of wasteful competition, for "competition in the provision of services is tolerable only in so far

as it is in the interest of the public." Within bounds it is quite essential, since its effect would be to provide for better service not only in the motor industry itself, but also as between rival agents of transport. How far these principles are observed in the control of the Motor transport industry in India, and in Madras in particular, has been demonstrated by the author. The study is also partly historical as the development of control has been traced. Its chief virtue lies in the close investigation of the main provisions of the Indian Motor Vehicles Act of 1939, the Madras Motor Vehicles Taxation Act of 1938 and the Motor Regulations of 1940.

The "Conclusion" brings together the main points that have been discussed in the text of the book. The author has been repetitionary on occasions and this he has done out of a desire to emphasise his points. In this chapter, however, he does not satisfy himself with a mere summing up of what has already been said, but makes a strong plea for the co-ordination of the road and the rail, and it is therefore a fitting conclusion to the whole book. While appreciating the advantages of statutory co-ordination and monopolisation, he seems to be much in favour of a voluntary basis of co-ordination. Speaking about monopolisation which is so much in the air today, the author tersely remarks, "In deciding whether a public body should undertake a road-transport service, certain points have to be considered. There is no sanctity attached to public undertakings of such services. The guiding factor in deciding whether or not a public body, say a Municipality, should enter the

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field of private enterprise is that of public need." That a road service would be a financial success if undertaken by that body is not itself sufficient. What should be established is that alone which could offer adequately to the public the service it is in need of. "In certain cases private enterprise would not be forthcoming, as it was in the case of railway construction. But the essential utility of it is so great that the State had to undertake that responsibility either by itself taking it up or by subsidising private concerns. Road transport is not a field wherein there is a dearth of private enterprise, so that a public service would ordinarily be superfluous." A strong plea for a more generous provision of rural services has been put forward and the author aptly concludes thus: "The segregation of the villages is fatal to national economy. They have got to be nursed, revived and made bulwarks of the nation. They have got to be linked up with the main centres of the country and for this what is most needed is a wide and far-flung network of roads so laid as to be entirely complementary to the other modes of transport, especially the railways. India is a land of distances and we cannot well afford to do away with the railways. They must and will continue to be our most important agent of transportation. The road services can only be complementary to them and within their ambit they are *nonpareil*. Thus the crying need in any scheme of transport co-ordination in India is for road re-construction. We want roads, more roads and better roads."

Some of the points raised by Mr. Rao in this book may now be considered. He has rightly

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drawn attention to the unhappy state in which municipal and district board roads are being maintained and attributes this largely to a shrinkage in the revenues of these bodies. Much of the wear and tear, he says, is largely due to heavy bullock-cart traffic, and though he sympathises with the agriculturist strictly on grounds of equity, he feels that these also should contribute their mite towards road maintenance. He has in this connection referred to the much-debated question of fitting bullock carts with pneumatic tyres. Needless to say the damage caused by narrow iron-shod wheels would be considerably minimised by the use of pneumatic tyres. The possibilities of such a change are now being investigated by the Indian Road Congress. But a note of warning must be sounded, for as the author points out, the substitution of pneumatic wheels would amount to an indirect form of taxation. The bad state of roads would cause considerable wear and tear to the tyres and as these would have to be periodically renewed the agriculturist would thereby be paying a recurring tax on them. The tax would be indirect in so far as it is an import duty.

The real problem is one of road maintenance and finance. India has a population of nearly 400 millions but it has an extra-municipal mileage of less than 280 lakhs, more than 55 per cent of which is merely earth. No wonder then that the costs of transportation in this country are high. Even the municipal roads are in bad repair and the tendency has been for these bodies to spend less and less money on road maintenance. So chronic has this evil become, especially in the

Road-Rail Transport

Presidency of Madras, that the Government have felt constrained to introduce legislation amending the Local Boards and District Municipalities Act so as to make it compulsory on the part of the local bodies, if they fail to do it of their own accord, to spend such amount as may be provided in the budget for the maintenance of roads. In a communiqué issued on the 30th November, 1940, Government of Madras say: "There has been a general tendency recently among district boards and municipal councils to spend an ever-decreasing percentage of their income on road maintenance and more on activities connected with public health, rural uplift, industrial schools and the like. Even the insufficient amount provided by them for roads is often utilised to too large an extent on increasing the road mileage at the expense of the maintenance of existing roads. There has been considerable public criticism by road users regarding the progressive deterioration in the condition of the more important roads in this Province.

It has been found that certain district boards actually spend less than their receipts under the head "Communications," and utilize a portion of the receipts on other services. Some district boards do not spend on trunk and important marketing roads any more even than the minimum required to earn the Government grants fixed for them, though they are expected to spend additional amounts from their own funds on the maintenance of these roads. Many municipal councils spend too little on roads and the important work of providing dustless surfaces in busy built-up areas is progressing very

Introduction

slowly; there is thus little abatement in the dust-nuisance caused by fast-moving traffic.”

This verily is a grave cause for apprehension and the urgency of the situation is heightened by the Government itself coming to the rescue of the road user. Road motor transportation has been steadily growing from strength to strength, and even the most wary amongst us would concede that it has a great part to play. Even the Hon'ble Member for Railways paid motor transport an indirect compliment during the debate on the dismantling of branch lines when he said that the services provided by it were so effective that the closure of a branch line would not affect the transportation facilities of the areas served thus. Road transport has a great future, as the villages have still to be linked up with the great cities and marketing centres of this vast sub-continent. The following pages, it is hoped, will bear this out and focus attention on the main problems involved in this intricate field of study.

I wish to acknowledge here my thanks to the Syndicate of the Annamalai University and Sir K. V. Reddi Nayudu, Vice-Chancellor of the Annamalai University, for having kindly agreed to my suggestion to publish Mr. Badri Rao's thesis. I may add that the publication of this work had to be undertaken in the absence of the author at Kolhapur, but my task was made easy by the assistance I received from my colleague Mr. C. W. B. Zacharias, M.A.

My thanks are in a large measure due to Sachivottama Sir C. P. Ramaswami Iyer, Dewan

Road-Rail Transport

of Travancore, Mr. G. D. Naidu, Managing Agent of the United Motors Service of Coimbatore and to Mr. H. Rahman, Director of Public Information, Hyderabad. Sir C. P. Ramaswami Iyer's help has been invaluable as he graciously placed all available information at the disposal of Mr. Rao and gave him ample facilities for study. Mr. Naidu was equally kind in giving him details about the administration of his Service. I am grateful to Mr. H. Rahman, for the reports he kindly sent us. I am also thankful to the officers of Messrs. Gordon Woodroffe (Motors) Co., Ltd., Madras. My thanks are also due to the South Indian Railway Company Ltd., and Mr. G. D. Naidu for permission to reproduce their maps in the text of the book.

March, 1941

B. V. NARAYANASWAMY

ANNAMALAINAGAR.

ACKNOWLEDGMENT

THIS book embodies the results of a study I made as a Research student in the Economics Department of the Annamalai University between 1938 and 1940.

The scope of the subject undertaken for investigation is unlimited; and accordingly I have made no attempt to make it exhaustive. I have in the following pages presented but some of the more important problems of Road-Rail Transport in the hope of stimulating further research.

I am indebted to the authorities of the Annamalai University for enabling me to make this study.

To my professor, Dr. B. V. Narayanaswami Naidu, who gave me valuable guidance at every stage of the work and unstinting help in the collection and collation of the material of this book, I am deeply grateful. I am also highly obliged to him for his kindness in undertaking the onerous task of seeing the book through the press. It will not be too much for me to say that, but for his influence, I should have found it difficult to obtain the facilities for direct investigation in Travancore and Coimbatore.

Though the impress of my professor's influence may be seen in every part of the study, the opinions I have ventured to express are entirely my own.

I am thankful to S. Raghavendra Rao, S. Thiruvengadathan, B.A. (HONS.), K. A. Kunhu Kutty, B.A. (HONS.), and C. S. Krishnamurthi, B.A., for the ready help they gave me in many directions and to Mr. T. K. Venkataraman, B.A. (HONS.) for preparing the index.

March, 1941.

S. R. N. BADRI RAO.

APPENDIX

FINANCIAL STATISTICS OF STATE

(FIGURES IN
1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30.)

Mileage ..	26,985	27,090	27,664	28,086	29,111	30,878
Capital at charge at end of year (in crores) ..	635	654	681	714	739	770
<hr/>						
Gross traffic receipts ..	1,00,13	98,94	98,42	1,03,43	1,03,73	1,20,70
Operating expenses ..	51,65	52,99	52,89	53,06	54,22	55,59
Depreciation Fund ..	10,35	10,87	10,89	11,38	12,00	12,59
Net Traffic receipts ..	38,13	35,28	34,64	38,99	37,51	34,52
Net miscellaneous receipts after deducting miscellaneous charges and surplus profits payable to companies.	-1,07	-1,19	-1,27	-87	-37	-2
Net revenue ..	37,06	34,09	33,37	38,12	37,14	34,50
Interest charges ..	23,90	24,81	25,87	27,27	29,33	30,46
Surplus ..	13,16	9,28	7,50	10,86	7,81	4,04
Paid as contribution to general revenues ..	6,78	5,49	6,01	6,28	5,23	6,12
Transferred to railway reserve ..	6,38	3,79	1,49	4,57	2,58	-2,08
<hr/>						
Ratio of working expenses (excluding depreciation fund) to gross traffic receipts..	51.6%	53.6%	53.7%	51.3%	52.3%	54.1%
Ratio of working expenses (including depreciation fund) to gross traffic receipts..	61.9%	64.3%	64.8%	62.3%	63.8%	66.4%
Ratio of net traffic receipts to capital at charge ..	6.0%	5.4%	5.1%	5.5%	5.1%	4.5%
<hr/>						

* Excludes Bezwada-Masulipatam Railway.

A. 1.

OWNED RAILWAYS: 1924-25 TO 1938-39.

LAKHS OF RUPEES).

1930-31.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
31,197	31,640	31,642	31,644	31,636	31,782	31,722	29,680*	29,725
783	790	789	787	787	789	789	754	755
95,10	86,63	84,43	86,63	90,20	90,65	95,47	95,01	94,48
54,39	49,31	49,08	49,50	50,27	50,87	50,23	50,37	..
13,07	13,46	13,77	13,56	13,72	13,25	13,15	12,57	12,56
27,64	23,86	21,58	23,57	26,21	26,53	32,11	32,07	30,44
-11	1	1,10	1,05	53	86	-9	-5	23
27,53	23,87	22,68	24,62	26,74	27,40	32,02	32,02	30,67
32,72	33,07	32,91	32,58	31,80	31,39	30,81	29,26	29,30
-5,19	-9,20	-10,23	-7,96	-5,06	-4,00	-1,21	2,76	1,37
5,74	..	..	..	..	..	..	2,76	1,37
-10,93	-4,95	..	..	..	..	..	..	..
57.2%	56.9%	56.7%	55.8%	54.7%	54.9%	51.4%	51.6%	53.1%
70.9%	72.5%	73.0%	71.4%	69.9%	69.5%	65.2%	65.0%	66.4%
3.5%	3.0%	2.7%	3.0%	3.3%	3.4%	4.2%	4.2%	4.2%

APPENDIX

STATEMENT OF ELECTRIC MULTIPLE

Year.		Route Mileage.	Track Mileage.	Number of Passengers carried.	Passenger Miles
1926-27	GIP.	29.9	71.6	16,220,076	111,584,256
1927-28	GIP.	29.9	71.6	27,360,690	192,685,663
1928-29	BBCI.	22.5	76.1	23,642,715	183,861,563
	GIP.	42.6	167.2	26,957,968	186,713,890
1929-30	BBCI.	22.50	76.10	30,860,478	237,256,562
	GIP.	129.44	324.32	32,431,391	251,547,078
1930-31	BBCI.	21.25	62.54	31,521,611	229,990,598
	GIP.	181.70	425.90	30,992,812	238,810,600
1931-32	BBCI.	21.25	62.54	32,415,856	232,723,147
	GIP.	181.70	425.90	28,664,985	206,336,592
	SIR.	18.14	36.28	3,319,478	28,140,104
1932-33	BBCI.	21.25	60.54	33,547,548	233,807,412
	GIP.	181.70	425.90	30,712,763	212,698,208
	S.I.R.	18.14	36.28	7,308,952	48,358,597
1933-34	BBCI.	21.25	60.54	33,631,308	242,585,903
	GIP.	181.70	425.90	28,853,110	211,084,529
	SIR.	18.14	36.28	7,709,675	49,898,642
1934-35	BBCI.	21.25	62.54	34,305,978	248,262,334
	GIP.	44.00	88.00	29,086,585	213,707,912
	SIR.	18.14	36.28	7,705,336	47,977,098
1935-36	BBCI.	21.25	62.54	35,031,520	254,542,124
	GIP.	44.0	88.00	30,154,822	221,498,632
	SIR.	18.14	36.28	7,123,305	43,696,214
1936-37	BBCI.	36.79	91.58	39,496,425	287,452,807
	GIP.	44.00	88.00	32,158,161	225,859,202
	SIR.	18.14	36.28	7,323,606	46,143,469
1937-38	BBCI.	36.79	91.58	45,268,892	326,156,835
	GIP.	44.00	88.00	32,826,680	233,674,790
	SIR.	18.14	36.28	8,272,477	53,501,314
1938-39	BBCI.	36.80	91.60	47,594,630	339,243,428
	GIP.	44.00	88.00	33,568,315	237,641,591
	SIR.	18.14	36.28	8,490,844	53,130,766

A. 2.

UNIT SUBURBAN TRAIN STATISTICS.

Earnings from Passengers carried.	Earnings per Passenger mile.	Cost per Passenger mile.	Earnings per train mile.	Cost per train mile.	Gross Ton miles. (including departmental)
..	2.26	3.63	1.23	1.98	..
..	2.12	3.48	1.43	2.35	..
..	2.29	2.17	2.41	2.14	..
..	2.13	3.90	1.34	2.45	..
26,27,591	2.13	2.07	1.26	1.22	502,171,132
27,10,834	2.07	3.46	0.81	1.36	603,048,934
26,88,137	2.24	1.80	1.29	1.02	449,127,062
25,53,831	2.05	3.29	0.75	1.20	625,080,145
29,11,937	2.40	1.95	1.49	1.18	418,524,404
25,68,005	2.39	3.35	0.84	1.17	555,181,776
4,26,719	2.91	2.02	0.60	0.42	52,926,815
29,10,257	2.39	1.66	1.65	1.11	392,348,295
26,48,100	2.39	3.08	0.86	1.11	554,920,784
6,72,618	2.68	1.99	0.62	0.41	81,621,688
30,47,148	2.41	1.84	1.50	1.11	437,067,105
25,91,123	2.36	3.22	0.85	1.16	549,867,078
6,88,965	2.65	1.67	0.76	0.46	68,390,546
30,45,972	2.36	1.62	1.52	1.02	404,027,347
25,79,179	2.32	3.36	0.82	1.19	564,943,665
6,47,981	2.59	1.26	0.80	0.39	63,819,532
30,98,067	2.34	1.54	1.53	0.98	402,081,930
26,65,156	2.31	3.21	0.84	1.17	571,499,550
5,79,326	2.55	1.45	0.81	0.46	58,399,635
34,72,977	2.32	1.44	1.49	0.91	449,137,803
27,10,413	2.30	3.18	0.80	1.11	584,374,325
5,71,746	2.11	1.71	0.70	0.58	57,187,247
39,39,939	2.32	1.35	1.59	0.90	487,838,726
27,91,187	2.29	3.02	0.84	1.10	580,464,239
6,60,548	2.37	1.64	0.79	0.55	67,455,613
40,81,028	2.31	1.57	1.65	1.12	489,569,775
28,39,880	2.29	3.15	0.85	1.16	594,763,555
6,74,956	2.44	1.75	0.80	0.57	67,832,364

APPENDIX

STATEMENT OF PRINCIPAL COMMODITIES CARRIED BY CLASS

Commodities.	Year 1930-31.			Year	
	Traffic in Tons.			Traffic	
	Gauge.			Gauge.	
	5' 6"	3' 3 $\frac{1}{2}$ "	2' 6" & 2"	5' 6"	3' 3 $\frac{1}{2}$ "
1. Rice in the Husk.	529,6	889,5	12,4	594,4	690,8
2. Rice not in the Husk ..	1,964,1	1,711,6	91,9	2,033,6	1,934,3
3. Coal and Coke ..	23,532,4	1,435,3	129,5	24,469,9	1,448,5
4. Gram and Pulse..	1,571,7	786,4	62,1	1,810,2	817,6
5. Wheat ..	2,034,4	497,8	49,5	1,917,2	418,3
6. Other Grains ..	491,2	349,3	17,9	357,8	335,4
7. Gur, Jagree Molasses ..	628,3	533,6	25,5	745,1	582,9
8. Sugar refined and unrefined ..	772,4	471,1	24,5	825,2	680,3
9. Oil seeds ..	2,676,2	1,416,0	96,7	1,961,3	1,070,3
10. Cotton raw pressed ..	1,007,2	281,7	77,9	1,025,2	301,3
11. Cotton raw unpressed ..	101,4	64,1	3,2	133,4	96,1
12. Cotton manu- factured ..	615,9	291,7	15,0	764,1	339,7
13. Fodder ..	759,9	248,8	20,0	794,1	295,7
14. Jute, raw ..	913,1	646,8	Nil	677,5	561,0
15. Iron and steel wrought ..	1,428,2	340,0	27,0	1,986,2	382,4
16. Kerosine Oil (in bulk) ..	228,6	131,2	3,4	295,7	189,1
17. Total general merchandise ..	34,684,1	16,844,0	1,187,3	38,600,0	18,505,0

A. 3.

I RAILWAYS AND EARNINGS THEREFROM (IN HUNDREDS).

1935-36.	Year 1936-37.				Year 1937-38.		
in Tons.	Traffic in Tons.				Traffic in Tons.		
	Gauge.				Gauge.		
2' 6" & 2' 0"	5' 6"	3' 3½"	2' 6" & 2"	5' 6"	3' 3½"	2' 6" & 2' 0"	
10,0	513,7	654,9	11,3	504,0	336,3	8,3	
106,2	2,344,7	2,006,1	121,1	2,361,4	1,097,4	126,1	
164,0	24,406,3	1,475,8	188,7	28,225,8	1,553,0	210,2	
61,1	1,823,0	911,4	61,1	1,890,2	750,5	68,6	
49,1	1,925,0	406,1	43,4	1,930,4	466,6	42,9	
11,0	397,0	403,2	13,8	380,6	369,4	13,0	
23,6	764,3	534,8	28,0	720,7	478,7	25,7	
19,1	1,201,2	982,7	21,5	1,096,6	931,2	19,9	
52,8	2,347,6	1,426,5	68,0	2,223,6	1,227,5	65,1	
48,3	1,249,3	374,2	59,7	857,5	261,0	39,6	
9	161,8	108,3	2,2	122,2	80,2	4,4	
14,2	771,5	348,7	14,3	850,6	358,1	14,6	
15,8	885,5	325,3	14,1	935,9	265,9	14,0	
..	900,7	758,4	..	850,8	645,9	..	
19,3	1,942,0	395,2	17,5	1,957,8	333,6	15,7	
4,5	321,9	236,1	4,5	332,8	263,5	4,6	
1,145,3	40,072,9	19,853,4	1,184,1	42,006,2	16,570,8	1,302,9	

APPENDIX

STATEMENT OF DENSITY OF

Year.	Passenger miles per annum.		Net ton—miles
	Per running track mile.	Per route mile.	Per running track mile.
1925,26	509,331	562,389	513,225
1926-27	504,385	557,994	517,245
1927-28	530,961	587,531	549,035
1928-29	523,884	578,191	533,694
1929-30	536,636	591,287	514,177
1930-31	464,791	518,371	477,196
1931-32	411,856	450,910	430,063
1932-33	397,417	438,071	399,470
1933-34	387,769	427,821	436,876
1934-35	402,053	443,593	475,506
1935-36	409,935	452,294	479,440
1936-37	413,638	456,639	502,250
1937-38	449,430	496,301	563,357
1938-39	445,917	491,828	542,359

A 4.**TRAFFIC ON CLASS I RAILWAYS.**

per annum.	Gross ton—miles per annum.		Train miles Per running track mile per day.
	Per route mile.	Per running track mile.	
566,689	1,967,670	2,172,646	11.0
572,220	2,009,201	2,221,749	11.5
607,531	2,128,611	2,355,399	11.9
589,018	2,121,524	2,341,444	11.9
566,541	2,078,954	2,290,672	11.9
529,871	1,962,205	2,178,800	11.2
470,844	1,816,337	1,988,574	10.3
440,334	1,745,634	1,924,206	10.0
481,999	1,831,464	2,020,629	10.2
524,635	1,950,309	2,151,815	10.7
528,981	1,982,831	2,187,718	10.9
554,464	2,049,278	2,262,320	11.2
622,110	2,218,921	2,450,333	12.0
598,198	2,209,002	2,436,434	12.3

APPENDIX

**SUMMARY OF GROSS REVENUE RECEIPTS,
STATE-OWNED RAILWAYS**

Year.	Gross Revenue Receipts.			Working	
	Earnings.	Suspense.	Total.	Ordinary.	Renewals and replacements.
1925-26	99,72,45	32	99,72,77	56,55,49	7,98,76
1926-27	99,12,47	—5,81	99,06,66	56,37,40	8,10,55
1927-28	1,04,34,01	—9,16	1,04,24,85	54,27,16	10,95,10
1928-29	1,04,58,71	—24,96	1,04,33,75	57,55,06	9,59,85
1929-30	1,02,40,11	30,17	1,02,70,28	56,41,47	11,76,17
1930-31	94,63,40	46,26	95,09,66	56,03,10	11,39,59
1931-32	86,28,26	34,49	86,62,75	49,25,34	13,46,34*
1932-33	85,58,36	3,92	85,62,28	49,02,84	13,77,22*
1933-34	88,30,11	—48,63	87,81,48	49,65,61	13,56,48*
1934-35	96,30,01	8,52	96,38,53	53,02,31	13,71,77*
1935-36	97,34,92	—23,34	97,11,58	53,67,48	13,24,97*
1936-37	1,01,26,76	—24,50	1,01,02,26	52,77,32	13,15,02*
1937-38	1,00,30,06	15,31	1,00,45,37	52,93,68	12,56,98*
1938-39	99,50,35	11,76	99,62,11	53,90,85	12,56,11*

* *N.B.*—From 1931-32 onwards the subsequent figures relate to

A. 5.

**WORKING EXPENSES AND REVENUE RECEIPTS OF
(IN THOUSANDS OF RUPEES).**

Expenses.		Net Revenue Receipts.	Percentage of ordinary working expenses on Earnings.	Remarks.
Suspense.	Total.			
—10,27	64,43,98	35,28,79	56.71	..
—14,72	64,33,23	34,73,43	56.85	..
11,75	65,34,01	38,90,84	52.01	..
—32,45	66,82,46	37,51,29	52.73	..
29	68,17,93	34,52,35	54.28	..
2,78	67,45,47	27,64,19	71.25	..
5,70	62,77,38	23,85,37	57.08	..
5,57	62,85,63	22,76,65	57.29	..
—16,43	63,05,66	24,75,82	56.23	Payment to worked lines.
*—8,76	66,65,32	26,96,22	55.06	2,76,99
—12,18	66,80,27	27,46,64	55.14	2,84,67
11,94	66,04,29	31,96,23	52.12	3,01,74
7,28	65,57,94	31,94,63	52.78	2,92,80
10,29	66,57,25	30,30,18	54.18	2,74,68
appropriations to Depreciation Fund.				

APPENDIX

SUMMARY OF PASSENGER

Year.	Number of Passengers (in hundreds).				Passenger miles (in thousands).		
	First Class.	Second Class.	Inter Class.	Third Class.	First Class.	Second Class.	Inter Class.
1925-26	1,033,0	9,901,3	13,602,4	574,608,1	111,183	382,389	622,690
1926-27	1,012,1	10,006,3	14,944,8	578,408,6	118,492	419,939	678,244
1927-28	979,9	9,962,9	17,350,6	594,821,2	128,770	479,448	762,197
1928-29	912,5	9,585,4	17,869,5	591,742,7	126,642	463,885	764,955
1929-30	804,2	9,125,3	17,900,4	606,467,5	123,591	455,664	759,323
1930-31	670,2	8,088,8	16,188,8	550,878,7	110,176	424,623	661,538
1931-32	508,1	5,937,5	12,353,9	487,036,9	93,030	356,240	559,676
1932-33	428,9	5,278,3	10,871,1	485,316,9	82,142	320,848	518,821
1933-34	420,5	5,050,3	10,557,3	473,585,0	80,729	311,654	507,597
1934-35	405,9	4,818,0	10,315,9	481,051,2	81,771	311,402	506,970
1935-36	384,4	4,762,9	10,468,6	488,075,4	83,965	333,649	506,084
1936-37	408,4	4,589,8	11,085,2	493,835,1	86,731	337,152	533,542
1937-38	397,1	4,217,3	11,323,5	505,346,8	84,389	332,073	566,796
1938-39	385,1	4,037,5	11,375,5	514,824,8	83,072	314,777	579,340

A. 6.

REVENUE STATISTICS.

Third Class.	Average miles a passenger was carried.				Earnings from Passengers (in thousands of rupees).			
	First Class.	Second Class.	Inter Class.	Third Class.	First Class.	Second Class.	Inter Class.	Third Class.
19,215,490	107.6	88.6	45.8	38.4	1,20,42	1,89,42	1,59,61	34,76,54
19,149,575	117.1	42.0	45.4	33.1	1,17,78	1,88,30	1,61,79	33,44,02
20,334,272	131.4	48.1	43.9	34.2	1,13,71	1,95,67	1,69,33	34,39,39
20,741,654	138.8	48.4	42.8	35.1	1,12,25	1,91,89	1,66,43	33,53,82
21,714,422	153.7	49.9	42.4	35.8	1,04,45	1,83,56	1,589,6	34,11,36
19,291,889	164.4	52.5	40.9	35.0	94,06	1,70,20	1,41,34	30,24,15
17,047,872	183.1	60.0	45.3	35.0	88,34	1,53,71	1,22,89	27,75,41
16,684,643	191.5	60.8	47.7	34.4	77,95	1,47,44	1,15,14	27,91,67
16,250,400	192.0	61.7	48.1	34.3	76,07	1,42,24	1,11,54	26,79,09
16,864,746	201.5	64.6	49.1	35.1	76,83	1,41,48	1,11,92	27,04,74
17,230,420	218.4	70.1	48.3	35.3	77,96	1,45,80	1,11,35	27,20,57
17,313,234	212.4	73.5	48.1	35.1	81,15	1,47,05	1,14,54	26,90,46
17,863,988	212.5	78.7	50.1	35.3	79,16	1,44,40	1,22,17	27,62,69
17,765,604	215.7	78.0	50.9	34.5	77,09	1,39,20	1,23,01	27,34,10

APPENDIX
SUMMARY OF PASSENGER AND GOODS REVENUE
(IN THOUSANDS)

Year.	Average rate charged per passenger per mile.				Train and Engine		
	First Class.	Second Class.	Inter. Class.	Third Class.	Pas-senger.	Goods.	Mixed.
1925-26	20.8	9.51	4.92	3.47	69,541	57,411	30,836
1926-27	19.1	8.60	4.58	3.35	74,967	57,328	29,717
1927-28	17.0	7.84	4.27	3.25	79,599	59,874	30,684
1928-29	17.0	7.94	4.18	3.10	83,473	61,358	30,905
1929-30	16.2	7.73	4.02	3.02	89,377	59,969	31,952
1930-31	16.4	7.70	4.10	3.01	88,673	55,943	31,095
1931-32	17.2	8.28	4.22	3.13	81,681	48,294	30,014
1932-33	18.2	8.82	4.26	3.21	80,318	44,998	31,657
1933-34	18.1	8.76	4.22	3.17	80,089	46,955	33,188
1934-35	18.0	8.72	4.24	3.08	81,421	50,527	34,161
1935-36	17.8	8.39	4.22	3.03	83,681	51,223	35,450
1936-37	18.0	8.37	4.12	2.98	86,166	54,856	34,936
1937-38	18.0	8.35	4.14	2.97	90,265	58,572	29,753
1938-39	17.8	8.49	4.08	2.95	93,420	60,028	29,059

A. 7.

STATISTICS AND OF TRAIN AND ENGINE MILEAGE
OF MILES).

Total Engine and Shunt- ing. miles.	Tons of goods carried (in thousands).	Net ton miles (in thousands).	Average miles a ton of goods was carried.	Earnings from goods carried (in thousands).	Average rate charged for carrying a ton of goods per mille.
210,824	79,859	19,900,018	249.2	64,42,17	6.22
217,845	85,833	20,374,679	237.4	65,00,65	6.12
228,210	89,791	21,902,222	243.9	69,40,65	6.08
234,614	90,835	21,889,177	241.0	71,15,55	6.24
239,027	87,376	21,524,637	246.4	68,82,76	6.14
229,411	83,377	20,406,477	244.7	64,41,10	6.06
206,005	74,575	18,346,765	246.0	58,72,51	6.15
200,104	70,601	17,202,541	243.7	56,88,85	6.35
204,374	76,513	18,706,817	244.5	61,58,54	6.32
212,803	84,503	20,351,635	240.8	64,34,53	6.07
217,479	86,932	20,553,684	236.4	64,68,93	6.04
223,931	86,263	21,435,458	248.5	69,79,43	6.25
226,969	87,289	22,776,688	260.9	68,66,04	5.78
232,919	88,361	22,158,840	250.8	68,56,96	5.98

APPENDIX B. 1.
MOTOR VEHICLES IN INDIA.

Year.	No.	Motor cars including Taxi Cars.	Motor Cycles.	Freight, vehicles and lorries.	Total.
1929-30	I	1,28,863	25,877	37,950	1,92,690
	M.C.	11,844	2,876	1,711	15,931
	M.P.	7,061	1,777	6,392	15,230
1931-32	I	1,39,226	24,612	46,868	2,10,726
	M.C.	12,972	3,113	2,011	18,096
	M.P.	7,608	1,708	6,412	15,728
1932-33	I	1,33,216	21,033	39,772	1,94,021
	M.C.	13,606	3,168	2,094	18,868
	M.P.	7,251	1,493	5,691	14,435
1933-34	I	1,41,415	21,118	40,427	2,02,960
	M.C.	14,314	3,196	2,171	19,741
	M.P.	7,617	1,382	5,876	14,675
1934-35	..	..	..	..	..
1935-36	I	1,09,565	12,411	39,836	1,61,812
	M.C.	4,291	45	548	5,296
	M.P.	8,461	1,397	6,433	16,291
1936-37	I	1,18,825	11,697	40,941	1,71,463
	M.C.	5,062	512	797	6,371
	M.P.	9,706	840	4,196	14,742
1937-38	I	97,872	9,385	39,172	1,46,429
	M.C.	5,446	496	739	6,680
	M.P.	9,686	876	4,548	15,110

I: India. M.C.: Madras City. M.P.: Madras Presidency.
 Figures from 1935-38 refer to vehicles actually running.

APPENDIX B. 2.

STATEMENT SHOWING THE NUMBER OF ALL CLASSES OF MOTOR VEHICLES RUNNING IN
THE DIFFERENT PROVINCES OF BRITISH INDIA AT THE END OF MARCH 1939.

Provinces	Motor Cars including Taxi Cars.	Motor Cycles including Scooters and auto-wheels.	Heavy Motor vehicles (lorries, buses etc.).	Total.
	No.	No.	No.	No.
Bengal (excluding Calcutta and Howrah Town)	4,459	282	2,343	7,084
Calcutta including Howrah Town.	16,864*	785	3,484	21,133
Bombay	25,126	1,840	7,772†	31,738
Madras City	5,244	410	878	6,532
Madras Province excluding Madras City	9,131	909	4,980	15,020
United Provinces	12,921	945	3,550	17,416
Punjab	10,022	1,857	8,353	20,232
Bihar	5,491	573	1,174	7,238
Orissa	683	114	314	1,111
Central Provinces and Berar	4,208	820	2,095	7,123
Sind	2,713	472	978	4,163
Delhi Province	1,601	388	219	2,208
N. West Frontier Province	5,685‡	1,707	4,506	11,898
Ajmer Marwara	668	82	188	938
Assam	3,140	183	2,088	5,411
Total	107,956	11,367	39,922	159,245

* As at 31st December 1938.

† Excluding buses which are included under motor cars etc.

‡ Progressive figures from commencement of registration.

APPENDIX B. 3.

NUMBER OF MOTOR CARS IMPORTED.

Year.	U.K.	U.S.A.	Canada.	France.	Italy.	Other Countries.	Total.
1927-28	3,600	6,031	3,400	538	1,367	186	15,122
1928-29	3,645	10,145	4,366	277	967	167	19,567
1929-30	3,758	9,620	2,318	364	1,150	189	17,399
1930-31	2,885	5,098	3,250	261	917	190	12,601
1931-32	2,178	3,368	676	161	510	327	7,220
1932-33	3,958	1,201	296	84	226	436	6,201
1933-34	5,348	2,227	1,715	62	221	186	9,759
1934-35	6,311	5,564	2,057	26	267	209	14,434
1935-36	6,744	3,851	2,328	13	210	444	13,590
1936-37	6,337	3,870	1,290	42	382	1,018	12,939
1937-38	6,419	4,876	1,612	98	281	2,411	15,697
1938-39	5,117	3,170	972	66	232	1,501	11,058

(Note here the discrepancies in the figures for 1935-36 and 1936-37 as published in the reports for 1936-37 and 1937-38).

BELOW FIGURES FOR 1935-36 AND 1936-37 AS PUBLISHED IN 1937-38.

Year.	U.K.	U.S.A.	Canada.	France.	Italy.	Other Countries.	Total.
1935-36	6,057	3,752	2,328	11	207	422	12,777
1936-37	5,677	3,742	1,290	41	382	984	12,116

IMPORTS OF OMNIBUSES, VANS ETC.

Year.	U.K.	U.S.A.	Canada.	Other countries.	Total.
1927-28	447	3,699	4,268	268	8,682
1928-29	473	7,572	4,610	135	12,790
1929-30	398	12,017	2,779	92	15,306
1930-31	258	6,197	2,397	61	8,913
1931-32	435	3,236	598	33	4,302
1932-33	517	1,793	338	28	2,676
1933-34	528	3,692	1,243	33	5,496
1934-35	1,171	6,559	2,058	185	9,973
1935-36	982	5,051	2,335	102	8,470
" *	958	4,942	"	"	8,337
1936-37	1,217	6,012	1,719	212	9,160
" *	1,202	5,899	"	198	9,018
1937-38	2,337	10,035	2,197	508	15,077
1938-39	607	5,095	1,958	148	7,808

* N.B.—These are revised figures for the same year.

APPENDIX B. 4.

COST OF RUNNING A CHEVROLET 30 CWT.* BUS (23 SEATER) AT Rs. 3,500 COMPLETE.

Annual Standing Charges—	Rs.
Licences—	
Registration Fee	16
Wheel Tax .. .. .	..
Government Permit	16
Provincial Taxes	690
District Board or Municipal taxes ..	1,110
Brake Testing fee	50
Any other taxes .. .. .	..
	} 1,882
Insurance—	
Vehicle, Goods	250 (ascertained from Commercial Insurance Company).
Depreciation—	
On life of bus, say, over 3 years less cost of tyres	1,166
Wages—	
Driver (Rs. 40 per mensem) .. .. .	..
Cleaner (Rs. 15 per mensem) .. .. .	..
Conductor (Rs. 25 per mensem)	960
Establishment Charges (including sundries etc.)	500
Garage rent at say Rs. 10 per month ..	120
Interest on Capital of Rs. 3,500 @ 6%..	210
Total standing charges per annum ..	5,088
Running Charges—	
Petrol in gallons—1,200 gallons @ Rs. 1-9-0 @ 20 miles per gallon ..	1,875
Oil and Grease	200
Tyres (3 sets @ Rs. 320)	960
Repair Charges	300
Spare Parts	300
Total running cost	3,635
Add total standing charges	5,088
Total	8,723

* Vide Mitchell-Kirkness Report, Madras Section, p. 49.

APPENDIX B. 5.

HIGH TAXATION DRIVES BUSES AND LORRIES OFF THE ROAD. *

	The Annual Provincial Taxation on a 23 seater Bus in.	Actual figures in Madras Presidency Buses.	
530	Madras Presidency is Rs. 690† ..	Estimated number running at commencement of year 1931-32.	6101
	Bihar and Orissa is Rs. 232 ..	Actual number running in the first 3 quarters of 1931-32 ..	3000
	Central Provinces is Rs. 200 ..	Actual number running in the fourth quarter of 1931-32 ..	2491
	Punjab is Rs. 125	Actual number running in the first quarter of 1932-33 ..	1935
	Bengal is Rs. 120 .. ..	....
	Bombay is Rs. 120	Commercial Lorries.	
	United Provinces is Rs. 60 ..	....
	Baluchistan is Rs. 20	Actual number that paid taxes in 1931-32	843
	North West Frontier Provinces and Sind is Rs. 20	Actual number in first quarter of 1932-33	443

* *Vide* Mitchell-Kirkness Report, Madras Section, p. 45.

† Exclusive of District Board Licence Fees.

APPENDIX B. 6.

* STATEMENT SHOWING THE LICENCE FEE LEVIED
BY DISTRICT BOARDS ON A 23 SEATER BUS
(FOR 100 MILES).

Serial No.	Name of District Board.	Amount of licence per annum.	
1.	Anantapur ..	1,000	
2.	North Arcot ..	690	
3.	South Arcot ..	..	Rates according to routes.
4.	Bellary ..	1,000	
5.	Chingleput ..	1,500	
6.	Chittoor ..	1,140	
7.	Coimbatore ..	575	
8.	Cuddapah ..	920	
9.	Ganjam ..	2,300	
10.	East Godavari ..	1,000	
11.	West Godavari ..	1,822	
12.	Guntur ..	2,000	
13.	South Kanara ..	1,520	
14.	Kistna ..	2,186	
15.	Kurnool ..	960	
16.	Madura ..	400	
17.	Malabar ..	905	
18.	Nellore ..	1,140	
19.	Nilgiris, The ..	414	
20.	Ramnad ..	1,020	
21.	Salem ..	600	
22.	Tanjore ..	..	Rates according to routes.
23.	Tinnevelly ..	759	
24.	Trichinopoly ..	..	Rates according to routes.
25.	Vizagapatam ..	1,093	
	Average ..	1,130	

* Vide Mitchell-Kirkness Report, Madras Section, p. 40.

APPENDIX B. 7.

SCHEDULE OF TAXES.

MAXIMUM QUARTERLY TAX.

Classes of Vehicles.	For vehicles fitted with pneumatic tyres.		For other vehicles.	
	RS.	A. P.	RS.	A. P.
3 Motor Lorries—				
(a) Lorries not exceeding 20 cwt. in weight laden	50	0 0	75	0 0
(b) Lorries exceeding 20 cwt. but not exceeding 30 cwt. in weight laden	100	0 0	150	0 0
(c) Lorries exceeding 30 cwt. but not exceeding 45 cwt. in weight laden	120	0 0	180	0 0
(d) Lorries exceeding 45 cwt. but not exceeding 60 cwt. in weight laden	150	0 0	225	0 0
(e) Lorries exceeding 60 cwt. but not exceeding 85 cwt.	180	0 0	270	0 0
(f) Lorries exceeding 85 cwt. but not exceeding 110 cwt.	220	0 0	330	0 0
(g) Lorries exceeding 110 cwt. but not exceeding 150 cwt.	270	0 0	405	0 0
(h) Lorries exceeding 150 cwt. but not exceeding 180 cwt. in weight ..	320	0 0	480	0 0
(i) Lorries exceeding 180 cwt. but in weight laden	350	0 0	525	0 0
(j) Additional tax payable in respect of lorries used for drawing trailers—				
(i) for each trailer not exceeding 20 cwt. in weight laden	20	0 0	30	0 0

SCHEDULE OF TAXES.

MAXIMUM QUARTERLY TAX.

Classes of Vehicles.	For vehicles fitted with pneumatic tyres.		For other vehicles.	
	RS.	A. P.	RS.	A. P.
(ii) for each trailer exceeding 20 cwt. but not exceeding 60	75	0 0	112	8 0
(iii) for each trailer exceeding 60 cwt in weight laden ..	150	0 0	225	0 0

Provided that two or more lorries shall not be chargeable under this clause in respect of the same trailer.

Motor vehicles plying for hire and used for the transport of passengers—

- | | | | | |
|--|----|-----|-----|-----|
| (a) Vehicles licensed under the rules made by the Provincial Government under the Indian Motor Vehicles Act, 1914 to carry in all not more than five persons .. | 80 | 0 0 | 120 | 0 0 |
| (b) Vehicles licenced under the rules made by the British Government under the Indian Motor Vehicles Act, 1914 to carry in all not more than five persons for every person which the vehicle is so licensed to carry excluding the driver and Conductor .. | 20 | 0 0 | 30 | 0 0 |

Classes of Vehicles.	Maximum tax for vehicles fitted with pneumatic tyres.				Maximum tax for other vehicles.			
	For a period not exceeding 7 days.		For a period exceeding 7 days but not exceeding 30 days.		For a period not exceeding 7 days.		For a period exceeding 7 days but not exceeding 30 days.	
	1.	2.	3.	4.	5.			
	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
Motor Lorries—								
(a) Lorries not exceeding 20 cwt. in weight laden	8	8 0	25	0 0	12	8 0	37	8 0
(b) Lorries exceeding 20 cwt. but not exceeding 30 cwt. in weight laden	16	12 0	50	0 0	25	0 0	75	0 0
(c) Lorries exceeding 30 cwt. but not exceeding 45 cwt. in weight laden	20	0 0	60	0 0	30	0 0	90	0 0
(d) Lorries exceeding 45 cwt. but not exceeding 60 cwt. in weight laden	25	0 0	75	0 0	37	8 0	112	8 0
(e) Lorries exceeding 60 cwt. but not exceeding 85 cwt. in weight laden	30	0 0	90	0 0	45	0 0	135	0 0
(f) Lorries exceeding 85 cwt. but not exceeding 110 cwt. in weight laden	36	12 0	110	0 0	55	0 0	165	0 0
(g) Lorries exceeding 110 cwt. but not exceeding 150 cwt. in weight laden	45	0 0	135	0 0	67	8 0	202	8 0
(h) Lorries exceeding 150 cwt. but not exceeding 180 cwt. in weight laden	53	8 0	160	0 0	80	0 0	240	0 0
(i) Lorries exceeding 180 cwts. in weight laden	58	8 0	175	0 0	87	8 0	262	8 0

(j) Additional tax payable in respect of lorries used for drawing trailers—

- (i) for each trailer not exceeding 20 cwt. but not exceeding 60 cwt. in weight laden
- (ii) for each trailer not exceeding 20 cwt. in weight laden
- (iii) for each trailer exceeding 60 cwt. in weight laden

12 8 0	37 8 0	18 12 0	56 4 0
3 8 0	10 0 0	5 0 0	15 0 0
25, 0 0	75 0 0	37 8 0	112 8 0

Provided that two or more lorries shall not be chargeable under this clause in respect of the same trailer.

4. Motor vehicles plying for hire and used for the transport of passengers—

- (a) Vehicles licensed under the rules made under the Indian Motor Vehicles Act, 1914 to carry in all not more than 4 persons
- (b) Vehicles licensed under the rules made under the Indian Motor Vehicles Act, 1914 to carry more than 4 persons— for every person which the vehicle is so licensed to carry

13 0 0	40 0 0	20 0 0	80 0 0
3 8 0	10 0 0	5 0 0	15 0 0

APPENDIX B. 8.

Mileage of Extra-Municipal Roads maintained by Public Authorities in British India as at 31st March 1938.

Province.	Total modern surface.	Water-Bound macadam.	Total surface macadam.	Total un surfaced (unmetalled or inferior type roads).	Grand Total.	Total P.W.D. & M.E.S.	Total Local Bodies.
	a	b	(a+b)	c	(a+b+c) & (d+e)	d	e
Madras ..	144	21,297	21,441	14,276	35,717	835	34,882
Bombay ..	596	10,538	11,134	8,437	19,571	7,083	12,488
Bengal ..	662	3,225	3,887	87,305	91,192	1,507	89,685
U. P. ..	1,263	6,937	8,200	23,389	31,589	4,024	27,565
Punjab ..	3,640	738	4,378	20,764	25,142	4,784	20,358
Bihar ..	534	3,482	4,016	31,144	35,160	1,016	34,144
C. P. & Berar ..	198	5,271	5,469	3,193	8,662	7,151	1,511
Assam ..	272	420	692	10,379	11,071	4,696	6,375
N. W. F. P. ..	884	193	1,077	2,844	3,921	2,367	1,554
Orissa ..	19	1,984	2,003	2,772	4,775	1,504	3,271
Sind ..	143	120	263	11,439	11,702	635	11,067
Total for Governors Provinces ..	<u>8,355</u>	<u>54,205</u>	<u>62,560</u>	<u>2,15,942</u>	<u>2,78,502</u>	<u>35,602</u>	<u>2,42,900</u>
Total British India.	<u>9,103</u>	<u>54,967</u>	<u>64,070</u>	<u>2,21,243</u>	<u>2,85,313</u>	<u>40,473</u>	<u>2,44,840</u>

Modern surface includes cement concrete, cement bound macadam, surface dressing with tar bitumen or asphalt, grouting sheet asphalt, asphaltic concrete, asphaltic macadam, tar concrete and tar macadam.

Water bound includes, broken rock metal, kankar, laterite or brick metal. M.E.S.: Military Engineering Service.

APPENDIX C. 1.

ABSTRACT OF REVENUE ACCOUNT FOR THE YEAR ENDING 32ND KARKADAKOM 1113.

Particulars of Working Expenses.			Amount.			Particulars of Receipts.			Amount.		
			Rs.	Ch.	C.				Rs.	Ch.	C.
A.	Administration, Management and Control	..	16,965	17	10	1 & 2.	Passenger Fare and Luggage	..	3,51,444	14	7
B.	Repairs, Renewals, Replacements and Maintenance	..	22,614	0	1	3.	Parcel	..	2,874	0	4
C.	Operating Expenses	..	1,90,340	24	8	4.	Subsidy for the Transport of Postal Mails.	..	348	3	0
D.	Pensionary Contribution of Permanent Employees from other departments working in this department	..	442	14	10	5.	Miscellaneous	..	1,587	4	15
E.	Contribution to the Insurance Reserve Fund	..	5,260	6	7						
F.	Depreciation on rolling stock, Machinery and Tools, buildings, furniture etc.	..	46,447	0	0						
G.	Interest on Capital	..	13,168	0	0						
	Total Expenditure	..	2,95,238	7	4						
	Net Profit	..	61,015	15	6						
	Total	..	3,56,253	22	10	Total			3,56,253	22	10

APPENDIX C. 2.

STATEMENT SHOWING DETAILS OF SERVICE ON THE DATE OF COMMENCEMENT OF THE VARIOUS ROUTES.

No.	Route Name.	No. of buses allocated.	No. of journeys operated.	Average frequency of service.	Remarks.
1.	Trivandrum-Nagercoil ..	18	98	20 minutes.	..
2.	Trivandrum-Neyyatinkara ..	6	78	25 "	..
3.	Nagercoil-Colachel ..	6	80	25 "	..
4.	Nagercoil-Cape Comorin ..	5	120*	15 "	..
5.	Trivandrum-Nedumangad ..	4	64	20 and 40 minutes past each hour.	..
6.	East Fort-Sasthamangalam.	1	80	1 hour.	..
7.	Manakad Poojapurra ..	2	76	25 minutes.	..
8.	East Fort-Vallyathurai ..	1	18	} At the School and Office timings and also in the evening at an interval of 1 hour.	..
9.	East Fort-Beach Sanku- mughom ..	1	12		..
10.	East Fort-Kattachakonam ..	3	90	20 minutes.	..
11.	Trivandrum Quilon ..	7	16	Roughly one hour.	..

* Includes shuttle service between Nagercoil and Suchindram also.

APPENDIX C. 3.

STATEMENT SHOWING DETAILS OF SERVICE ON THE LAST DAY OF KARKADAKOM 1113.

No.	Route Name.	No. of buses allocated.	No. of journeys operated.	Average frequency of service.	Remarks.
1.	Trivandrum-Nagercoil ..	19	98	20 minutes.	..
2.	Trivandrum-Neyyatinkara ..	5	70	30 "	..
3.	Nagercoil-Colachel ..	4	54	40 "	..
4.	Nagercoil-Cape Comorin ..	5	120	15 "	..
5.	Trivandrum-Nedumangad ..	2	32	1 hour.	..
6.	Trivandrum-Perurkada ..	1	30	1 "	..
7.	East Fort-Sasthamangalam.	2	60	30 minutes.	..
8.	East Fort-Poojappura ..	2	90	20 "	..
9.	East Fort-Valiyathura ..	1	8	} At the School and Office timings and at an interval of one hour.	..
10.	East Fort-Beach Sankumughom ..	1	20		
11.	East Fort-Pattom ..	2	60	30 minutes.	..
12.	Trivandrum-Quilon ..	7	16	Roughly one hour.	Date of operation from 5-12-1113.

APPENDIX C. 4.

TRAFFIC ANALYSIS STATEMENT FOR THE YEAR 1113.

S. No.	Name of route.	Miles.	Passen- gers.	Receipts. (Passenger fare and Luggage.)			Parcel receipts.			Postal Mails & Anchal.			Adver- tisement and miscella- neous.			Remarks.
				Ra.	Ch.	C.	Ra.	Ch.	C.	Ra.	Ch.	C.	Ra.	Ch.	C.	
1.	Trivandrum. Nagercoll	7,29,586.7	7,38,377	2,21,636	16	12	2,588	26	8	848	3	0	..	..	..
2.	Trivandrum- Neyyattinkara.	1,17,122.5	1,97,375	20,664	5	0	..	..	..	..	..	..	..	..	..
3.	Nagercoll- Colachel.	1,45,192.2	2,36,246	25,415	24	7	57	21	0	..	..	..	..	..	..
4.	Nagercoll- Cape Comorin.	1,46,550.1	3,78,050	33,476	9	8	54	18	12	..	..	..	..	..	..
5.	East Fort- Nedumangad.	90,131.9	2,35,640	21,010	22	0	1	22	8	..	..	..	..	..	..
6.	East Fort- Sasthamanga- lam.	26,858.9	1,39,546	6,575	5	0	..	..	..	..	..	..	..	..	..
7.	East Fort Poojappura.	28,839.8	1,43,275	6,263	17	0	..	..	..	..	..	..	..	..	..
8.	East Fort. Vallyathurai.	5,218.0	10,500	798	11	0	..	..	..	..	..	..	..	..	..	Trivandrum Town service operated from 22-8-1113.
9.	East Fort-Beach.	10,830.0	35,943	2,037	10	0	..	..	..	..	..	..	..	..	..
10.	East Fort- Kattacha- konam.	29,455.5	1,57,297	7,152	10	0	..	..	..	..	..	..	..	..	..
11.	Trivandrum- Quilon.	39,516.8	35,074	6,418	23	12	170	23	8	..	..	..	1,587	4	15	Date of begin- ning of service- 5-12-1113.
	Total ..	13,69,302.4	23,07,323	3,51,444	14	7	2,874	0	4	348	3	0	1,587	4	15	
Grand total Receipts—Rs.		3,56,253-22-10.														

APPENDIX C. 5.

Month.	Passenger fare and luggage.			Parcels.			Postal Mails.			Miscellaneous.			Total.		
	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.
Kumbhom (10th to 30th)	.. 37,129	23	13	145	27	0	42	21	0	..	..	..	37,318	15	13
Meenom	.. 58,647	23	8	415	18	12	61	2	0	78	2	10	59,202	18	14
Medom	.. 67,185	24	10	408	21	8	61	2	0	49	8	6	67,705	0	8
Edavom	.. 68,128	5	8	582	17	8	61	2	0	47	4	3	68,819	1	3
Mithunom	.. 58,443	15	8	567	25	8	61	2	0	1,233	8	9	60,305	23	9
Karkadagom	.. 61,909	5	8	753	2	0	61	2	0	179	9	3	62,902	18	11
Total Demand	.. 3,51,444	14	7	2,874	0	4	348	3	0	1,587	4	15	3,56,253	22	10
Total collection	.. 3,49,610	24	15	2,572	24	8	322	22	1	1,537	27	15	3,54,044	15	7
													2,209	7	3

The balance of Rs. 2,209-7-3 has been remitted only in, 1114 and hence the difference in the totals of Demand and Collection.

APPENDIX C. 6.

*Statement showing the receipts under sale of
concession tickets in 1113.*

Route.	Month.								
	Edavom.			Mithunom.			Karkadagom.		
	Ra.	Ch.	C.	Ra.	Ch.	C.	Ra.	Ch.	C.
Trivandrum Town.	133	11	0	123	8	8	168	21	0
Trivandrum to Neyyattinkara ..	5	17	8	13	13	8	17	12	0
Nagercoil-Cape ..	9	18	0	8	1	0	10	20	0
Nagercoil-Colachel .	..	..	..	1	22	0	..	..	..
Trivandrum-Quilon.	..	..	..	..	..	..	3	16	0
Total ..	148	18	8	146	17	0	200	13	0
Grand Total—Rs. 495 20 8.									

APPENDIX C. 7.

Month-war Statement of Receipts under Private Hire.

Month.	No. of Services undertaken.		Amount.		
			Ra.	Ch.	C.
Kumbhom	1	..	28	0 0
Meenom	10	..	258	8 8
Medom	23	..	490	14 2
Edavom	15	..	366	6 8
Mithunom	16	..	324	10 8
Karkadagom	11	..	326	9 12
Total	76		1,793	21 6

APPENDIX C. 8.

*Statement showing details of Capital Expenditure
incurred during 1113.*

				Rs.	Ch.	C.
1.	Buildings	..	..	1,31,317	10	10
2.	Rolling Stock	..	..	4,12,389	0	15
3.	Plant and Machinery	..	..	17,741	16	11
4.	Preliminary Expenses	..	..	20,556	21	0
5.	Miscellaneous	...	..	4	24	4
6.	Share of tools and plant adjusted by P.W.D.	..	..	1,176	0	0
7.	Share of Establishment	..	..	19,903	0	0
Total ..				6,03,088	17	8

APPENDIX C. 9.

Working Expenses incurred during 1113.

1. Administration, Management, and Control.

Salaries.—

				Rs.	Ch.	C.
	Executive Staff	..	..	6,589	8	0
	Office Staff	..	..	2,489	3	8
	Depot Staff	..	..	1,480	14	7
	Audit Charges	..	..	622	14	0
	T. A. and other allowances	..	..	1,344	6	8
	Office Contingencies	..	..	1,540	19	4
Total ..				14,066	9	11

2. *Repairs, Renewals and Replacements:*
Buses, Lorries, etc.

	Rs.	Ch.	C.
Works Supervision (Garage Engineer)	500	0	0
Wages of Fitters, Painters, etc. ..	4,911	3	15
Materials and Spare Parts ..	20,049	5	8
Electric Power and Water Supply ..	2,714	2	6
Miscellaneous	2,395	21	0
Total ..	30,570	4	13

3. *Operating Expenses.*

Inspectors	3,625	4	4
Drivers	14,476	18	13
Conductors	11,757	0	10
Other Establishments	3,788	3	3
T. A. and other allowances ..	116	22	5
Diesel Oil	43,127	4	15
Other Oils and Greases	7,263	15	6
Kerosene Oil	196	7	1
Tyres	65,591	0	15
Cleaning Materials	53	24	15
Tickets	5,234	1	1
Stationery and Printing	2,446	0	7
Insurance of Buses	164	25	0
Uniforms and Equipment	3,309	2	5
Licence and Registration	976	0	0
Tolls	14,453	0	0
Telephone	585	7	8
Miscellaneous	5	22	0
Total ..	1,77,169	20	12

Grand Total of 1, 2 & 3 .. 2,21,806 7 4

APPENDIX C. 10.

Statement showing the strength of Staff on the last day of the year 1113.

Serial No.	Designation.	No. of Posts.	Scales of pay. Rs.						
1.	Secretary	1	300						
2.	Chief Accountant	1	100—125						
3.	Clerks	5	40—5—70						
4.	"	7	25—3—40						
5.	"	4	20—1—25						
6.	Typist	1	25—3—40						
7.	Depot Clerks	2	40—5—70						
8.	"	5	25—3—40						
9.	"	1	20—1—25						
10.	Ticket Clerks	4	15						
11.	Auditors	1	<table style="display: inline-table; border: none;"> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">75—5—100</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">40—5—70</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">25—3—40</td> </tr> </table>	}	75—5—100	}	40—5—70	}	25—3—40
}	75—5—100								
}	40—5—70								
}	25—3—40								
12.	"	1	<table style="display: inline-table; border: none;"> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">75—5—100</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">40—5—70</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">25—3—40</td> </tr> </table>	}	75—5—100	}	40—5—70	}	25—3—40
}	75—5—100								
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13.	"	1	<table style="display: inline-table; border: none;"> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">75—5—100</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">40—5—70</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">}</td> <td style="padding-left: 5px;">25—3—40</td> </tr> </table>	}	75—5—100	}	40—5—70	}	25—3—40
}	75—5—100								
}	40—5—70								
}	25—3—40								
14.	Garage Engineer	1	100—5—125						
15.	Fitters	6	40—5—70						
16.	"	6	30—2—40						
17.	"	2	25—3—40						
18.	"	13	20						
19.	Fitter Coolies	10	13						
20.	Cleaners	24	10						
21.	District Inspectors	2	50—5—70						
22.	Inspectors	28	40—2—50						
23.	Driver Mechanics	3	40—5—70						
24.	Drivers	115	30—2—40						
25.	Conductors	119	25—1—30						
26.	Parcel Clerks	81	10						
27.	Peons	10	9—1 6—11						

N.B.—Unless otherwise stated the increments are annual.

APPENDIX C. 11.

DETAILS OF EXPENDITURE UNDER ' A '.

Administration, Management and Control.

Detailed Heads of Account.	Amount.		
	Rs.	Ch.	C.
1. Salaries of Executive Staff	7,907	4	0
2. Office Staff	3,116	7	14
3. Depot Staff	1,842	24	15
4. Audit Charges	782	14	0
5. T. A. and other Allowances	1,567	18	0
6. Contingencies	1,749	4	13
Total ..	16,965	17	10

DETAILS OF EXPENDITURE UNDER ' B '.

Repairs, Renewals, etc.

Detailed Heads of Account.	Amount.		
	Rs.	Ch.	C.
1. Works Supervision	600	0	0
2. Wages of Fitters, Painters, etc.	6,134	11	13
3. Materials and spare parts	10,662	26	11
4. Electricity and Water Supply	1,795	12	9
5. Miscellaneous	3,421	5	0
Total ..	22,614	0	1

DETAILS OF EXPENDITURE UNDER ' C '.

Operating Expenses.

Detailed Heads of Account.	Amount.		
	Rs.	Ch.	C.
Inspectors	4,810	4	4
Drivers	18,017	25	13
Conductors	14,619	2	5
Other Establishment	4,594	27	11
T. A. and other Allowances	116	22	5
Diesel Oil	36,620	14	12
Other Oils and Greases	6,214	26	0
Kerosene Oil	196	7	1
Tyres	77,588	19	3
Cleaning Materials	47	18	11
Tickets	3,061	9	7
Stationery and Printing	2,260	7	15
Insurances of Buses	164	25	0
Licence and Registration	976	0	0
Tolls	17,143	0	0
Miscellaneous	14	0	4
Telephone	585	7	8
Uniform and Equipment	3,309	2	5
	Total .. 1,90,340 24 8		

APPENDIX C. 12.
WORKING EXPENSES.

Particulars of Expenditure.	Expenditure booked in the Accounts of the year 1113 (both cash and book adjustments.)	Add Expenditure as per details in the statement of liabilities.	Deduct amount as per details in the statement of assets.	Actual Working Expenses.
	Rs. Ch. C.	Rs. Ch. C.	Rs. Ch. C.	Rs. Ch. C.
(A) Administration, Management and Control—	8,589 8 0	1,817 24 0	..	7,907 4 0
Office Staff	2,489 3 8	627 4 6	..	3,116 7 14
Depot Staff	1,480 14 7	362 10 8	..	1,842 24 15
Audit Charges	622 14 0	160 0 0	..	782 14 0
T. A. and other Allowances	1,844 6 8	223 11 8	..	1,567 18 0
Contingencies	1,540 19 4	221 10 12	12 25 3*	1,749 4 13
Total	<u>14,066 9 11</u>	<u>2,912 5 2</u>	<u>12 25 3</u>	<u>16,965 17 10</u>
(B) Repairs, Renewals, Replace- ment and Maintenance—				
Buses, Lorries etc. Works				
Supervision	500 0 0	100 0 0	..	600 0 0
Wages of Fitters etc. ..	4,911 3 15	1,223 7 14	..	6,134 11 13
Materials and spare parts ..	20,049 5 8	459 0 14	9,845 7 11†	10,662 26 11
Electricity and Water Supply	1,795 12 9	..	..	..
Miscellaneous	3,814 10 13	106 22 3	..	..
Total	<u>30,570 4 13</u>	<u>1,889 2 15</u>	<u>9,845 7 11</u>	<u>22,614 0 1</u>

(C) Operating Expenses—

Inspectors	3,625 4 4	1,185 0 0	..	4,810 4 4
Drivers	14,476 18 13	3,541 7 0	..	18,017 25 13
Conductors	11,757 0 10	2,862 1 11	..	14,619 2 5
Other Establishment ..	3,788 8 3	806 24 8	..	4,594 27 11
T. A. and other allowances..	116 22 5	..	..	116 22 5
Crude Oil	43,127 4 15	883 26 8	7,390 16 11	88,620 14 12
Other Oils and Greases ..	7,263 15 6	..	1,048 17 6	6,214 26 0
Kerosene Oil	196 7 1	..	..	196 7 1
Tyres	65,591 0 15	11,997 18 4	..	77,588 19 3
Cleaning Materials	53 24 15	..	6 6 4	47 18 11
Tickets	5,234 1 1	..	2,172 19 10	3,061 9 7
Stationery and Printing ..	2,446 0 7	..	185 20 8	2,260 7 15
Insurance of Buses	164 25 0	..	..	164 25 0
Licence and Registration ..	976 0 0	..	..	976 0 0
Tolls	14,453 0 0	2,690 0 0	..	17,143 0 0
Miscellaneous	5 22 0	8 6 4	..	14 0 4
Telephone	585 7 8	..	..	585 7 8
Uniform and Equipment ..	3,309 2 5	..	..	3,309 2 5
Total	1,77,169 20 12	23,975 0 8	10,803 24 7	1,90,340 24 8

* Value of Stamps on hand on 1-1-1114.

† Value of stock on hand.

APPENDIX C. 13.

Details for Depreciation.

	Rs.
1. On Buildings at 5 per cent	1,599
2. On Rolling Stock at 25 per cent	44,226
3. On Ticket machines at 20 per cent	470
4. On Other tools and plant at 15 per cent	130
5. On Furniture at 7½ per cent	22
Total Rs. ..	46,447

APPENDIX C. 14.

Details for Expenditure under Debt Heads

Investment on Reproductive Works

Commercial Transport for the year 1113.

	Rs.	Ch.	C.
Buildings*	1,31,317	10	10
Rolling Stock (a)	4,12,389	0	15
Plant and Machinery (a)	13,398	19	13
Preliminary expenses (b)	20,542	3	1
General Charges (b)	21,079	0	0
Miscellaneous (b)	4	24	14
Total ..	5,98,731	3	5

(a)* This shows the actual capital stock on hand.

(b) The expenditure on this is to be treated as payments for which there is no capital stock.

N.B.—Preliminary expenses refer to those expenses that were met with prior to the regular operation of the transport service.

APPENDIX C. 15.

*Statement of liabilities on account of payments to be made for value received during the year 1113.**

S. No.	To whom payable.	Amount.	Head of Debit.
		Rs. Ch. C.	
1.	Messrs. S. T. C. Thiruvadhinaatha Pillai and Bros.	16 17 10	} XXX-A. B.I.C.
2.	Kochan, Kittan, Charcoal Contractor	2 24 0	
3.	Cycle Emporium, Trivandrum	6 3 0	} Materials and spare parts.
4.	Natarajan Bros., Trivandrum	22 0 5	
5.	Electric and Motor Works, Trivandrum	146 14 4	
6.	Petty Payments under office contingencies	221 10 12	Office contingencies.
7.	Mr. Kuncheriya, Kuncheriya, Alleppey	883 26 8	C 11 a. Crude Oil.
8.	Mr. K. M. S. Mallayan Chettiar	2,690 0 0	C 111 a. Tolls.
9.	Messrs. Ardeshir & Co.	11,997 18 4	Tyres.
Total		15,987 2 11	

* Payments for articles bought and consumed during the year under review but payable in the subsequent year.

APPENDIX C. 16.

Statement of Assets.

S. No.	Particulars.	Amount.
		Rs. Ch. C.
1.	Value of stamps on hand on 32nd Karkadakom 1113	12 25 3
2.	Value of stock of materials and spare parts on hand	9,845 7 11
3.	Value of Diesel Oil on hand	7,390 16 11
4.	Value of other oils, etc.	1,048 17 6
5.	Value of Cleaning Materials	6 6 4
6.	Value of Tickets	2,172 19 10
7.	Value of Stationery	185 20 8
Total		20,662 1 5

APPENDIX C. 17.

*Statement of Liabilities on account of Salaries and
Wages of Employees for work done.*
during the year 1113.*

	Rs.	Ch.	C.
Executive Staff	1,317	24	0
Office Staff	627	4	6
Depot Staff	362	10	8
Audit Charges	160	0	0
T. A. and other Allowances	223	11	8
Pay of Foremen (Works Supervision).	100	0	0
Wages of Fitters, Painters etc.	1,223	7	14
Inspectors	1,185	0	0
Drivers	3,541	7	0
Conductors	2,862	1	11
Other Establishment	806	24	8
Pay of Menials for 1112|1113	99	16	10
Overtime allowance of the Mechanical Staff for 1112|1113	7	5	9
Overtime allowance of the Operating Staff for 1112|1113	8	6	4
Total ..	12,524	7	14

* These are payments due for work actually done in 1113 but paid during the subsequent year. Hence by adding these figures together with the corresponding figures in Appendix C. 9 the relevant figures for Appendix C. 11 are obtained.

APPENDIX C. 18.

DEBT HEADS INVESTMENTS ON REPRODUCTIVE WORKS.

Statement of Assets and Liabilities for the year ending 32nd Karkadugom 1113.

Liabilities.	Rs.	Ch. C.	Rs.	Ch. C.	Assets.	Rs.	Ch. C.	Rs.	Ch. C.
Byramshaw & Co. ..	..		5,084	8 11	Buildings ..	1,31,317	10 10		
Burmah-Shell Oil					Less depreciation ..	1,599	0 0	1,29,718	10 10
Storage & Distributing Co. of India Ltd., Madras ..	..		1,315	2 12	Rolling stock ..	4,17,423	4 10		
Capital ..	6,01,238	19 12			Less depreciation ..	44,228	0 0	3,73,197	4 10
Less final payments for which there is no stock balance vide Appendix C. 19 ..	88,197	24 10			Plant & Machinery ..	14,588	25 14		
			5,13,040	23 2	Less depreciation ..	622	0 0	13,966	25 14
					Amount due from P.W.D. on account of one Brown Bowry Welding set and an air compressor (temporarily debited) to this department ..			2,507	16 7
Total balance (Closing capital).	..		5,19,390	1 9	Total (Closing Capital) ..	..		5,19,390	1 9

APPENDIX C. 19.

DETAILS FOR Rs. 88,197-24-10.

Expenditure to be treated as final payments for which there is no stock balance.

	Rs.	Ch.	C.	Rs.	Ch.	C.
1. Total Depreciation in Rolling Stock, Machinery and Tolls Buildings and Furniture ..				46,447	0	0*
2. (a) Preliminary Expenses ..	20,542	3	1			
(b) General Charges (Supervision charges of P.W.D. and share of tools and plants)	21,079	0	0			
(c) Miscellaneous		4	24	14		
(d) Carriage and Freight (Cart hire, cooly, charges etc.).	124	24	11			
				41,750	24	10
Total ..				88,197	24	10

* Already included under expenditure and deducted from gross profits.

APPENDIX C. 20.

STATE TRANSPORT BUSES.

Total No. of buses and lorries registered.	No. checked.	No. of vehicles in respect of which irregularities were found.	Remarks.
85	59	31	In most of the vehicles the seating capacity has not been painted in the body of the vehicle. Several conductors refused to give information demanded by the police.

On the 1st April 1931 between 2 p.m. and 6 p.m. a surprise check of all vehicles was undertaken. Out of 5,562 motor vehicles 1,097 vehicles found on the road were checked. They were asked to test the Brakes and horns, overloading, painting of seating capacity, 'G' permits and conductors' pass books.

('G' permits mean general permits.)

No. of State Transport Buses registered on 1-4-1939 ..	85
No. of vehicles found irregular	31
No. with no seating capacity painted	21
Conductors refusing information	9

APPENDIX C. 21.
MOTOR VEHICLES EXCLUDING STATE
TRANSPORT BUSES.

	Total No. of motor vehicles registered in the State.	Number checked.	No. of vehicles in respect of which irregularities were found.	Remarks.
Pleasure Cars—				
Private	3390	534	108	Several of the drivers had not their motor driving licences in possession. In a few cases 'G' permits were not found in possession.
Taxi	167	124	37	
Lorries—				
Private	532	131	50	The offences detected were generally overloading and driving without licences.
Taxi	138	240	27	
Buses	412	265	60	do.
Motor Cycles	838	3	1	Nil.

By virtue of G.O. R.O.C. No. 981|38, dated 19-3-1938 conductors of State Transport Buses need not have pass books.

APPENDIX C. 22.

Annual Statement of Hackney Carriages registered and licences issued in the Town of Trivandrum for 1113.

Year.	No. of carriages registered.	No. of drivers licensed.	Fee realised.			No. of cases charged.	Cases charged but not convicted.
			Rs.	Ch.	C.		
1112	206	197	327	14	0	..	..
1113	251	233	388	21	0	582	..

APPENDIX C. 23.

Accidents.

Year.	Total No. of accidents caused by motor vehicles.	No. that proved fatal.	No. resulting in injuries.	No. of persons injured.
1104	183	24	151	222
1105	150	28	105	205
1106	140	21	116	146
1107	84	18	53	75
1108	99	12	70	93
1109	91	12	66	72
1110	117	19	82	100
1111	83	11	57	72
1112	110	37	66	97
1113	114	22	82	99

APPENDIX C. 24.

List of Parcel Agencies as on 31-12-1113.

1. Trivandrum	12. Kottar
2. Balaramapuram	13. Kottaram
3. Aralumoodu	14. Cape Comorin
4. Neyyattinkara	15. Monday Market
5. Amaravila.	16. Colachal
6. Kalikavila	17. Trivandrum Cantonment
7. Marthandom	18. Attingal
8. Thoduvatty	19. Alencode
9. Thuckalai	20. Quilon
10. Vadassery	21. Nedumangad
11. Nagercoil	

Schedule of fares for Parcels.

Up to 28 lbs.—4 chs. on any single route.

Between 28 lbs. and 56 lbs.—8 chs. on any single route.

„ 56 lbs. and 112 lbs.—12 chs. on any single route.

Weights above 112 lbs. admitted only in special cases.

50% reduction for Newspaper bundles, flowers, leaves etc.

APPENDIX C. 25.

List of Bus routes and the number of privately owned buses running on each route for the year 1113.

Serial No.	Name of route.	No. of buses running.
<i>Trivandrum District.</i>		
1.	Nagercoil—Trivandrum	76
2.	Nagercoil—Cape	11
3.	„ Colachal	18
4.	„ Azhaghiapandipuram	16
5.	„ Manavilakurichy	9
6.	„ Anjugramam	7
7.	„ Suchindram	1
8.	„ Ethamboly	2
9.	„ Manakudy	3
10.	„ Muttom	1
11.	„ Tinnevelly	28
12.	„ Shermadevi	5
13.	„ Aramboly	5
14.	Thuckalai—Eraniel via Eranielkonam ..	4
15.	„ Eraniel via Thiruvithamcode ..	3
16.	„ Kulasekharam	1
17.	„ Kulasekharam via Thiruvattar ..	1
18.	Colachal—Trivandrum	2
19.	Marthandom—Kulasekaram	3
20.	„ Monday Market	3
21.	Kulasekaram—Trivandrum	1
22.	Kuzhithura—Thengapattanam	6
23.	„ Arumana	1
24.	Nedumangad—Shencottah	4
25.	„ Palade	1
26.	„ Kallar	1
27.	„ Trivandrum via Kattakada ..	1
28.	Trivandrum—Kallar	1
29.	Kattakada—Poovar	3
30.	Neyyattinkara—Poovar	1
31.	Kattakada—Trivandrum	2
32.	Vizhinjam—Balaramapuram	1

Serial No.	Name of route.	No. of buses running.
33.	Attingal—Chirayinkil	2
34.	„ Killimanoor	2
35.	„ Madathurai	1
36.	Trivandrum—Vizhinjam	3
37.	„ Vamanapuram	1
38.	„ Kottarakara	9
39.	„ Thiruvella	2
40.	„ Shencottah (2 reserve bus)	4
41.	„ Kozhencherry	3
Total ..		249

* 27 new buses having current 'G' permits were not put on the road as the State Transport buses were to begin service on the route. Transport service came into existence on 10-7-1113/21-2-1938.

Quilon District.

1.	Kottarakara—Kottayam	20
2.	Punalur—Kayankulam	2
3.	Punalur—Mundakayam	2
4.	Shencottah—Sambooravadakara	1
5.	„ Shencottah Frontier	9
6.	Quilon—Alleppey	20
7.	„ Punalur	7
8.	„ Madathura	2
9.	„ Kulathupuzha	2
10.	„ Ranni	1
11.	„ Shencottah	8
12.	„ Kottayam	6
13.	„ Thiruvella	1
14.	„ Mavelikara	1
15.	Alleppey—Aroor	18
16.	„ Kozencherry	1
17.	„ Ambalapuzha	3

Serial No.	Name of route.	No. of buses running.
18.	Chengannur—Konni	4
19.	" Vadaserikara	1
20.	" Kayankulam	2
21.	Ranni—Thiruvilla	1
22.	" Thattarambalam	2
23.	Pathanamthitta—Kottayam	1
24.	Kozhencherry—Changanacherry	6
25.	Thiruvilla—Kottayam	1
26.	Haripad—Kottayam	1
27.	Thiruvilla—Bonami	1
Total ..		124

Kottayam District.

1.	Kottayam—Changanacherry	7
2.	" Alwaye	29
3.	" Thodupuzha	2
4.	" Devicolam	2
5.	" Poonjar	2
6.	" Erattupettah	19
7.	" Vaikom	1
8.	" Athirampuzha	2
9.	" Kothala	2
10.	" Mundakayam	7
11.	" Kumili	4
12.	" Bonami	4
13.	" Mallapally	2
14.	" Ranni	1
15.	Bonami—Kumili	1
16.	Mundakayam—Kumili	2
17.	Ettumanoor—Vaikom	3
18.	Vaikom—Thodupuzha	2
19.	" Palai	2
20.	" Ernakulam	2
21.	" Alwaye	2

Serial No.	Name of route.	No. of buses running.
22.	Palai—Thodupuzha	4
23.	„ Pappathipara	1
24.	„ Piravam	1
25.	„ Kuthattukulam	1
26.	Chenganacherry—Manimala	3
27.	„ Mundakayam	3
28.	„ Ranni	1
29.	Ponkunnam—Palai	2
30.	„ Erattupettah	2
31.	„ Erumalai	1
32.	Alwaye—Edapalle	5
33.	„ Parur	6
34.	„ Munnar	2
35.	Edapalle—Karukutty	5
36.	„ Pallupettah	1
37.	Parur—Varapuzha	2
38.	Kothamangalam—Mamala	1
39.	„ Muvattupuzha	2
40.	„ Piravom	1
41.	Munnar—Chinnar	2
42.	„ Periyakanal	2
43.	„ Top Station	2
44.	Muvattupuzha—Thodupuzha	3
45.	„ Piravom	1
46.	Thodupuzha—Mamala	2
47.	„ Karimanoor	1
48.	„ Kanjar	1
49.	Palai—Kuthattukulam	1
50.	Kuthattukulam—Pappathippara	1
	Total ..	158

APPENDIX C. 26.

List of Companies and Important Services.

1. The Pioneer Motor Service, Nagercoil.
2. The Tinnevely Motor Bus Company, Tinnevelly.
3. Royal Mail Service, Nagercoil.
4. Nagoor Andavar Motor Service, Tinnevelly.
5. Hameedia Motor Service, Nagercoil.
6. Rama Vilas Motor Service, Kalakad.
7. Gomathi Motor Service, Kalakad.
8. The Syndicate Ltd., Nagercoil.
9. M. V. Motor Service, Trivandrum.
10. Ganapathy Motor Service, Kalakad.
11. Diamond Motor Service, Trivandrum.
12. New Champion Motor Service, Trivandrum.
13. Nagaraj Motor Service, Trivandrum.
14. Kerala Motor Service, Trivandrum.
15. Kamala Motor Service, Attingal.
16. Shree Krishna Motor Service, Attingal.
17. Raja Ram Motor Service, Attingal.
18. Manoharan Motor Service, Trivandrum.
19. St. George Motor Service, Thiruvilla.
20. Express Motor Service, Thiruvella.
21. Trivandrum-Kottarakara Joint Motor Service,
Kottarakara.
22. Sri Ram Motor Service, Trivandrum.
23. Nelson Motor Service, Chengannur.
24. Balagopalan Motor Service, Kottarakara.
25. Quilon—Punalur Motor Transport Union Ltd.,
Kottarakara.
26. The Popular Motor Service, Quilon.
27. The Alleppey Syndicate Motors Ltd., Alleppey.

28. The Automobile Corporation Ltd., Mavelikara.
29. The Ambalapuzha Syndicate Motors, Ambalapuzha.
30. West Coast Syndicate Motors Ltd., Alleppey.
31. Chengannur-Konni Motor Union Ltd., Chengannur.
32. Kottayam-Changannacherry Motor Union Ltd., Changanacherry.
33. Grade Motor Service, Adoor.
34. Kottayam-Always Motor Union Ltd., Kottayam.
35. Sri Karunya Vilasom Motor Union Ltd., Kottayam.
36. The Associated Motor Union Ltd., Palai.
37. The Pankajam Motor Service, Always.
38. Kozhencherry — Changanacherry Motor Syndicate Ltd., Changannacherry.
39. Peoples Motor Union Ltd., Palai.
40. Kohinoor Motor Service, Changanacherry.
41. Ramakrishna Vilas Motor Service, Ponkunnam.
42. P. S. Sarasvathi Motor Service, Madura.
43. Gomathi Vilas Motor Service, Madura.
44. United Motor Union Ltd., Palai.
45. Master Motor Union Ltd., Piravom.
46. Standard Motor Union Ltd., Ettumanoor.
47. Auto Transport Union Ltd., Always.
48. Chenganacherry — Manimala Motor Union & Co., Changanacherry.
49. North Travancore Motor Union Ltd., Parur.
50. Lucky Motor Service, Munnar.
51. Thodupuzha-Muvattupuzha Motor Union Ltd., Thodupuzha.
52. High Range Motor Union Ltd., Kottayam.
53. Hill Land Motor Union Ltd., Kottayam.

APPENDIX C. 27.

DETAILS OF SERVICE NEEDS SUGGESTED BY THE TRAVANCORE BUS-OWNERS' CONFERENCE.

Route.	Seating capacity.	No. of buses required.	Spare buses.	No. of trips.
Nagercoil-Manavalakurichy ..	10	4	..	4
Kottarakara-Kottayam ..	23	(12) 20	4	1
Trivandrum-Quilon	23	12	6	..
Quilon-Punalur	23	(4) plus 1	..	..
Quilon-Kottayam	23	6	1	..
Quilon-Alleppey	16	(16) 20	(4) 2	..
Alleppey-Aroor	9	18	2	..
Chengannur-Kayankulam ..	13	6	..	..
Changanacherry-Kozhencherry.	9	8	2	..
Chengannur-Konni	13	6	..	..
Changanacherry-Kottayam ..	23	6	1	..
Thiruvella-Bonami Service not necessary—				
Kottayam-Kumili	23	4	5	..
" Bonami	23	3		
" Mundakayam	23	4		
Ponkunnam-Palai	15	5	..	..
Kottayam-Erattupettah ..	23	8	..	..
" Alwaye	23	8	..	..
Alwaye-Edapalle	20	6	..	..
" Parur	20	8	..	..
Edapalle-Karukutty (including Trichur service)	20	5	..	..

APPENDIX

A Comparative Statement showing the number of Buses of the number of Accidents

Year.	Total No. of buses.	Total miles run by all buses per day.	Total per year.	Total No. of accidents during the year (deaths or serious injuries).	Average number of miles for every accident.	No. of accidents due to inefficiency of the staff.
1929	50*	7,500	27,37,500	28	97,768	12
1930	60*	9,300	33,94,500	31	1,09,500	9
1931	70*	10,500	38,32,500	14	2,73,750	6
1932	80*	12,000	43,80,000	11	3,98,182	5
1933	110*	16,500	59,20,500	13	4,55,423	7
1934	120*	18,000	65,70,000	6	10,95,000	2
1935	140*	21,000	76,65,000	8	9,58,125	3
1936	170*	25,000	93,07,500	7	13,29,643	1

*Including V. M. S. and Allied Groups.

D. 3.

U. M. S. and all allied Transport Group, the daily mileage run, and other particulars.

2,28,125	5	5,47,500	11	6	4	..	..
Average No. of miles for every accident, due to inefficient staff.	Other causes such as bad road and mechanical defects.	Average No. of miles for every accident due to bad roads & mechanical defects.	No. of accidents due to carelessness of passengers and other traffic.	No. of drivers dismissed.	Total No. of claim or punishments through court.	Drivers dismissed for rash driving from 1930-31 as per Cir. No. 1031/21st March 1931.	Claim ordered by Court.
3,77,167	7	4,84,929	15	8	3	7	1 case of 1930
6,38,750	2	19,16,250	6	14	1	5	..
8,76,000	2	21,90,000	4	10	1	6	..
8,45,786	1	59,20,500	5	13	..	12	..
32,85,000	..	..	4	6	2	9	..
25,55,000	..	..	5	7	2	10	..
93,07,500	1	93,07,500	6	7	1	8	1

APPENDIX D. 1.

GROWTH OF THE U. M. S.

1921	..	Started with one bus.	
1924	..	8 buses.	
1928	..	38 "	
1929	..	70 "	Registered as a limited liability concern.
1931	..	120 "	
1933	..	156 "	
1937	..	162 "	
1938	..	167 "	
1939	..	140 "	The fall in 1939 is due to famine conditions.

APPENDIX D. 2.

POSTAL CONTRACT RATES.

Previous Contract.	Section.	Miles.	Present Contract.
Rs.			Rs.
550	R.M.S. Contractors between Erode R.M.S. and D.P.M.	56	550
350	Erode-Satyamangalam ..	48	122
50	Tiruppur-Palladam ..	10	10
50	Tiruppur-Avanashi ..	8	10
..	Avanashi-Annur ..	15	20
..	Keeranur-Palani ..	15	20
225	Trichur-Kohinjampara ..	40	25
..	Palghat-Kollengode ..	16	10

APPENDIX D. 4.

*Routes, number of trips, mileage and buses plied
by the U. M. S. on various sections.*

No. of Buses.	Routes.	Trips.	Miles.
6	Coimbatore-Dharapuram	.. 6 R. T.	102
5	„ Udamalpet	.. 5	112
3	„ Kangayam	.. 4	90
4	„ Palladam <i>via</i> Pappampatti	.. 2	60
5	„ Palghat	.. 10	66
4	„ Tattamangalam (Cochin Frontier)	.. 6	70
5	„ Mettupalayam	.. 12	45
3	„ Alandurai	.. 9	30
1	„ Thadagam	.. 5	20
12	„ Satyamangalam	.. 16½	90
10	„ Erode	.. 10	132
1	„ Bhavani	.. 1	140
8	„ Gobichettipalayam	.. 8	112
1	Satyamangalam-Andiyur	.. 2	56
1	„ Tiruppur <i>via</i> Gobi.	1	86
1	Erode-Dharapuram <i>via</i> Palayakottai	.. 1	120
6	„ Dharapuram <i>via</i> Chennimalai.	5	112
2	„ Dharapuram <i>via</i> Vellaikoil	.. 2	140
4	„ Satyamangalam	.. 4	90
1	„ Dharapuram Sankaranda- palayam	.. 1	120
3	„ Mettupalayam	.. 3	132
1	Dharapuram-Kodimudi	.. 1	100
2	„ Dindigul	.. 3	90
6	„ Palni	.. 10	48
1	Dharapuram-Udamalpet <i>via</i> Tungavi	.. 2	54
3	„ <i>via</i> Madattukulam	.. 6	56
1	„ Gobichettipalayam	.. 1	120

No. of Buses.	Routea.	Trips.	Miles.
2	Tiruppur-Satyamangalam	.. 2	90
6	„ Mettupalayam <i>via</i> Avanashi	.. 8	66
1	„ <i>via</i> Pettikottai	.. 1	100
1	„ Gobi <i>via</i> Avanashi	.. 2	80
1	„ Gobi <i>via</i> Kunnathur	.. 2	60
7	„ Pollachi	.. 10	80
2	„ Dharapuram	.. 4	60
2	Dharapuram-Pollachi <i>via</i> Ponnapuram	.. 3	80
2	Pollachi-Trichur	.. 2	120
2	„ Vadathancheri	.. 2	80
1	Palghat <i>via</i> Para	.. 2	60
3	Pollachi-Palghat <i>via</i> Chittur	.. 6	70
1	Palghat-Pattancheri	.. 3	30
2	Trichur-Kohinjampara	.. 2	80
1	Chittur-Pulthur	.. 5	20
1	Palghat-Para	.. 5	18
2	„ Ayalur	.. 4	40
4	„ Kollengode <i>via</i> Peruvambu.	3	30
2	„ „ <i>via</i> Koduvayur.	6	36
2	Gobichettipalayam-Andiyur	.. 8	30

APPENDIX D. 5.

Booking Clerk Staff at Branches.

1. Dharapuram-Udamalpet at Coimbatore	..	3
2. Palghat Stand at Coimbatore	..	3
3. Tiruppur Stand at Tiruppur	..	7
4. Palghat Stand	.. ..	4
5. Pollachi	.. ..	8
6. Dharapuram	.. ..	9
7. Erode Bus Stand at Coimbatore	..	8
8. Palladam	.. ..	2
9. Satyamangalam Stand at Coimbatore	..	10
10. Erode Proper	.. ..	4

APPENDIX D. 6.

Accident Figures for the period of 14th July 1937 to 31st July 1939.

Death	..	13
Serious Fracture but not death	..	11
Ordinary fracture to life	..	30
Ordinary injuries to life	..	20
Serious damage to bus	..	2
Ordinary damage to bus	..	1
Scratches to buses	..	5
Damage to other properties or animals	..	5
Our Office suspension	..	36
Our Office dismissal	..	7
Our Office re-instated by General Manager	..	30
Number of Police prosecutions from 1-10-38		
to 31-12-38	..	14 cases
Out of these 14 number of cases acquitted	..	2
Total amount of court fines 1-10-38 to		
31-12-38	..	Rs. 365
Number of cases from 1-1-39 to 31-7-39	..	60
Number of cases acquitted	..	13
Number of cases withdrawn	..	4
Total fines paid	..	Rs. 350

APPENDIX D. 7.
Strength of Staff.

No.	Incumbency.	Scales of Pay.
162	Drivers ..	20—50
161	Conductor ..	10—20
75	Booking clerks ..	20—50
11	Assistant Managers .	50—80
2	Managers ..	80—100
1	General Manager ..	350
1	Managing Agent ..	500
100	Workshop Staff.	
60	Office Staff ..	Including spare parts Department.

The whole staff is divided into 11 branches each under the jurisdiction of an assistant manager.

	Number
Head Office Clerical Staff	20
Peons and Watchmen	29
Cleaners—Washing and Greasing Department ..	8
Petrol Pump Staff	5
Checking Inspectors	18
Head Office Workshop	40
Peelamedu Workshop	29
Daily Wages Staff	80
A.E.G. Staff (Electrical Company)	8

APPENDIX D. 9.

Line Dharapuram to Dindigul. Bus M.L. 1693. Date
 Driver. Uchappan. Conductor. Sheik Abdul. Month July 1939.

571

Date.	Miles.	Petrol Gls.	Oil Gls.	Petrol.			Oil and Grease.			Spare Parts.			Batta.	Other Expenses.	Total Expenses.			Total Collection.			Debit or Credit.						
				RS.	A.	P.	RS.	A.	P.	RS.	A.	P.			RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
3-7-1939	90	6			8	7	0	0	8	6	..	0	9	0	..	9	8	6	22	8	6	13	0	0			
4-7-1939	180	12	1 1/2		16	14	0	1	5	3	1	4	0	1	13	0	..	21	4	3	55	11	3	31	11	0	
5-7-1939	90	6	1 1/2		8	7	0	1	5	3	1	5	0	0	10	6	..	11	11	9	21	13	9	9	8	0	
6-7-1939	180	12			16	14	0	0	8	6	1	12	0	1	7	0	..	20	9	6	41	8	0	20	14	6	
7-7-1939	90	6			8	7	0	0	4	3	..	0	9	0	..	9	4	0	17	8	9	8	4	9			
8-7-1939	180	12	1/2	1/2	16	14	0	1	10	9	..	1	12	6	..	20	5	3	50	8	3	30	3	0			
9-7-1939	90	6			8	7	0	0	8	6	..	0	11	6	..	9	11	0	24	15	0	15	4	9			
10-7-1939	180	12			16	14	0	0	8	6	..	1	3	6	..	18	10	0	36	2	0	17	8	0			
11-7-1939	90	6			8	7	0	0	8	6	..	1	3	0	..	10	2	6	36	4	0	26	2	0			
12-7-1939	180	12			16	14	0	0	12	9	0	2	0	1	3	0	..	18	15	9	30	10	0	11	10	3	
13-7-1939	90	6			8	7	0	0	8	6	..	0	10	0	..	9	9	6	22	4	3	12	10	9			
14-7-1939	180	12	1/2	1/2	16	14	0	0	15	0	27	0	0	1	9	0	..	46	6	0	40	1	6	-8	4	6	
15-7-1939	90	6			8	7	0	0	8	6	..	0	11	0	..	9	10	6	27	13	3	18	2	9			
16-7-1939	180	13	1/2	1/2	18	4	6	1	1	3	..	1	6	0	..	20	11	9	36	4	3	15	8	6			
17-7-1939	90	6			8	7	0	0	8	6	..	0	7	0	..	9	6	6	16	13	3	7	6	9			
18-7-1939	180	12			16	14	0	0	4	3	..	1	7	0	..	18	9	3	43	9	0	24	15	9			
19-7-1939	..	..	2 1/2		..	..	..	2	10	6	..	..	..	..	..	2	10	6	..	..	..	2	10	6
20-7-1939	174	14			19	9	0	..	..	..	..	1	6	6	..	20	15	6	38	6	0	17	6	6
21-7-1939	174	11			15	7	6	0	8	6	..	0	5	0	..	16	5	0	10	11	9	5	9	3			
22-7-1939	180	4			1	5	10	0	1	0	..	0	12	6	..	7	7	6	24	14	0	17	6	6			
23-7-1939	176	10			1	14	1	0	1	1	0	7	0	0	0	9	0	..	22	11	0	17	15	6	4	11	6

APPENDIX
Dharapuram to

Date.	Serial No.	Total miles run.	Memo Collections.			Way Collections.			Total Collections.			Total Expenses.		
			RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
3-7-1939	..	90	12	4	0	10	4	6	22	8	6	9	8	6
4-7-1939	..	180	36	4	9	16	10	6	52	15	3	21	4	3
5-7-1939	..	90	14	9	3	6	10	6	21	3	9	11	11	9
6-7-1939	..	180	29	5	0	12	3	0	41	8	0	20	9	6
7-7-1939	..	90	11	14	0	5	10	9	17	9	0	9	4	3
8-7-1939	..	180	36	0	0	14	8	3	50	8	3	20	5	3
9-7-1939	..	90	15	6	3	9	9	6	24	15	9	9	11	0
10-7-1939	..	180	19	5	3	16	12	9	36	2	0	18	10	0
11-7-1939	..	90	31	12	0	4	8	6	36	4	6	10	2	6
12-7-1939	..	180	24	2	0	6	8	0	30	10	0	18	15	9
13-7-1939	..	90	16	14	9	5	5	6	22	4	3	9	9	6
14-7-1939	..	180	30	8	0	9	9	6	40	1	6	46	6	0
15-7-1939	..	90	15	2	3	12	11	0	27	13	3	9	10	6
16-7-1939	..	180	19	9	3	16	11	0	36	4	3	20	11	9
17-7-1939	..	90	9	10	9	7	2	6	16	13	6	9	6	6
18-7-1939	..	180	29	2	3	14	6	9	43	9	0	18	9	3
19-7-1939	2	10	6
20-7-1939	..	174	24	7	9	13	4	3	38	6	0	21	1	6
21-7-1939	..	174	6	9	6	4	2	3	10	11	9	16	5	0
22-7-1939	..	180	8	6	9	16	7	3	24	14	0	7	7	6
23-7-1939	..	176	14	14	9	3	0	9	17	15	6	22	11	0

Line Dharapuram to Dindigul. Bus M.L. 1693.
Driver Uchappan. Conductor Sheik Abdul.

D. 8.

Dindigul—45 miles.

ES. A. P.	Credit.	Debit.	For 21 scater, Debit or Credit.	No. of days bus went on line.	'Driver'	No. of days present.	Conductor	No. of days present.	Standard Number of seats.
13 0 0	1	Uchappan	1	Sheik Abdul	1	21
31 11 0	1		1		1	21
9 8 0	1		1		1	21
20 14 6	1		1		1	21
8 4 9	1		1		1	21
30 3 0	1		1		1	21
15 4 9	1		1		1	21
17 8 0	1		1	Allaudin	1	21
26 2 0	1		1		1	21
11 10 3	1		1		1	21
12 10 9	1		1	Sheik Abdul	1	21
..	6 4 6	D.	..	1		1		1	21
18 2 9	1		1		1	21
15 8 6	1		1		1	21
7 6 9	1		1		1	21
24 15 9	1		1		1	21
..	2 10 6	D.	..	1		1		1	21
17 4 6	1		1		1	21
..	5 9 3	D.	..	1		1		1	21
17 6 6	1		1		1	21
..	4 11 6	D.	..	1		1		1	21

Date

Month, July 1939.

APPENDIX D. 10.

Bin-Card for M.L. 1692 for November 1937.

Month Date Driver Conductor. Line.	Serial No.	Total Miles run.	Memo Collections.		Way Collections.		Total Collections.		Total Expenses.		Credit.		
			RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	
November	1	128	35	15 0	5	14 0	41	13 0	13	10 6	28	2 6	..
"	3	128	31	0 0	9	0 0	40	0 0	13	10 6	26	5 6	..
"	4	128	24	13 0	10	0 0	34	13 0	12	9 0	22	4 0	..
"	5	128	25	0 0	9	10 0	34	10 0	13	5 0	21	5 0	..
"	6	128	26	0 0	13	5 0	39	5 0	14	14 6	24	6 6	..
"	7	128	31	14 0	11	11 0	43	9 0	13	0 0	30	9 0	..
"	8	128	40	10 0	4	9 0	45	3 0	15	7 0	29	12 0	..
	Total	896	215	4 0	64	1 0	279	5 0	96	8 6	182	12 6	0 3 3*
"	9	128	27	6 0	12	14 0	40	4 0	13	9 0	26	11 0	..
"	10	128	32	7 0	11	3 0	43	10 0	13	11 0	29	15 0	..
"	11	128	28	8 0	12	10 0	41	12 0	17	1 6	24	0 6	..
"	12	128	36	5 0	10	9 0	46	14 0	13	14 0	33	0 0	..
"	13	128	27	13 0	10	6 0	38	3 0	12	1 0	26	2 0	..
"	14	128	30	10 0	12	2 0	42	12 0	12	15 0	29	13 0	..
"	15	128	34	0 0	13	3 0	47	3 0	15	3 3	31	15 9	..
"	16	128	34	9 0	8	8 0	43	1 0	13	9 9	29	7 3	..
	Total	1,024	251	10 0	91	7 0	843	1 0	112	0 6	231	0 6	0 3 7*

574

APPENDIX D. 11.

"	17	..	128	25 7 0	8 12 0	34 3 0	26 8 0	7 11 0	...
"	18	..	128	27 5 0	11 2 0	38 7 0	13 6 3	25 0 9	..
"	19	..	128	18 11 0	13 15 0	32 10 0	14 9 3	18 0 9	..
"	20	..	128	28 13 0	9 5 0	38 2 0	12 11 6	25 6 6	..
"	21	..	128	25 4 0	9 15 0	35 3 0	12 9 0	22 10 0	..
"	22	..	128	21 8 0	17 9 0	39 1 0	13 6 9	25 10 3	..
"	23	..	128	23 6 0	10 8 0	38 14 0	13 6 9	25 7 3	..
"	24	..	128	24 8 0	13 0 0	37 8 0	14 12 9	22 11 3	0 2 8*
	Total	..	1,024	199 14 0	94 2 0	294 0 0	121 6 3	172 9 9	..
"	25	..	128	20 10 0	11 11 0	32 5 0	12 7 0	19 14 0	..
"	26	..	128	20 12 0	9 10 0	30 6 0	14 6 9	15 15 3	..
"	27	..	128	17 7 0	13 15 0	31 6 0	13 1 9	18 14 3	..
"	28	..	128	23 10 0	9 1 0	32 11 0	12 8 0	20 3 0	..
"	29	..	128	27 12 0	10 6 0	38 2 0	12 11 6	25 6 6	..
"	30	..	128	24 8 0	13 10 0	38 2 0	11 5 0	26 13 0	0 2 8*
	Total	..	768	134 11 0	68 5 0	203 0 0	76 8 0	126 8 0	..

575

Line

Driver

Bus M.L. 1692

Conductor

Date

Month November 1937

* Net credit per mile.

APPENDIX D. 12.

Bin-Card for M.L. 1692 showing details of receipts and running expenses.

Line. Driver.	Date.	Miles.	Petrol gls.	Oil gls.	Bus 1692		Date		Spare Parts.	Batta.	Other Expenses.	Total Expenses.
					Petrol	Oil and Tyres and Grease. Tubes.	Month	November 1937.				
					RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.				RS. A. P.
	November	1	128	8	½	11 4 0	0 12 0	..	..	1 10 6	..	13 10 6
	"	3	128	8	½	11 4 0	0 12 0	..	0 1 6	1 9 0	..	13 10 6
	"	4	128	8	..	11 4 0	..	..	..	1 5 0	..	12 9 0
	"	5	128	8	½	11 4 0	0 12 0	..	..	1 5 0	..	13 5 0
576	"	6	128	9	½	12 10 6	0 12 0	..	..	1 8 0	..	14 14 6
	"	7	128	8	..	11 4 0	..	..	..	1 12 0	..	13 0 0
	"	8	128	8	½	11 4 0	0 12 0	..	1 10 0	1 13 0	..	15 7 0
	Total ..	896	57	1½	80 2 6	3 12 0	..	1 11 6	10 14 6	..	..	96 8 6
	"	9	128	8	½	11 4 0	0 12 0	..	..	1 9 0	..	13 9 0
	"	10	128	8	½	11 4 0	0 12 0	..	..	1 11 0	..	13 11 0
	"	11	128	11	..	15 7 6	..	..	..	1 10 0	..	17 1 6
	"	12	128	8	½	11 4 0	0 12 0	..	..	1 14 0	..	13 14 0
	"	13	128	7	½	9 13 6	0 12 0	..	..	1 7 6	..	12 1 0
	"	14	128	8	..	11 4 0	..	..	..	1 11 0	..	12 15 0
	"	15	128	9	½	12 10 6	0 10 9	..	..	1 14 0	..	15 3 3
	"	16	128	8	½	11 4 0	0 10 9	..	..	1 11 0	..	13 9 9
	Total ..	1024	67	1½	94 8 6	4 5 6	..	..	13 7 6	..	..	112 0 6

APPENDIX D. 13.

73

"	17	128	9	..	12 10 6	..	..	12 9 0	1 4 6	..	26 8 0
"	18	128	8	‡	11 4 0	0 10 9	..	..	1 7 6	..	13 6 3
"	19	128	9	‡	12 10 6	0 10 9	..	..	1 4 0	..	14 9 8
"	20	128	8	..	11 4 0	..	..	..	1 7 6	..	12 11 6
"	21	128	8	..	11 4 0	..	..	..	1 5 0	..	12 9 0
"	22	128	8	‡	11 4 0	0 10 9	..	..	1 8 0	..	13 6 9
"	23	128	8	‡	11 4 0	0 10 9	..	..	1 8 0	..	13 6 9
"	24	128	9	‡	12 10 6	0 10 9	..	..	1 7 6	..	14 12 9
	Total ...	1024	67	1‡	94 8 6	3 5 9	..	12 9 0	11 4 0	..	121 6 3
"	25	128	8	..	11 4 0	..	..	..	1 3 0	..	12 7 0
"	26	128	9	‡	12 10 6	0 10 9	..	..	1 1 6	..	14 6 9
"	27	128	8	‡	11 4 0	0 10 9	..	..	1 3 0	..	13 1 9
"	28	128	8	..	11 4 0	..	..	..	1 4 0	..	12 8 0
"	29	128	8	..	11 4 0	..	..	..	1 7 6	..	12 11 6
"	30	128	7	..	9 13 6	..	..	..	1 7 6	..	11 5 0
*	Total ...	768	48	‡	67 8 0	1 5 6	..	..	7 10 6	..	76 8 0

577

APPENDIX D. 14.

M. L. 1692.

Weekly statements showing details of receipts and running expenses for November 1937.

Week.	Bus.			Driver.			Conductor.					
	Petrol.	Oil.		Petrol.	Oil.	Tyres and Tubes.	Spares.	Batta.	Other Expenses.	Total Expenses.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1	57	1½		80	2	6	3 12 0	..	1 11 6	10 14 6	..	96 8 6
2	67	1½		94	3	6	4 5 6	..	..	13 7 6	..	112 0 6
3	67	1½		94	3	6	3 5 9	..	12 9 0	11 4 0	..	121 6 3
4	48	½		67	8	0	1 5 6	..	..	7 10 6	..	76 8 0
Total.	239	4½		336	1	6	12 12 9	..	14 4 6	43 4 6	..	406 7 3

APPENDIX D. 15.

M. L. 1692.

Week.	Miles.	Memo Collection.			Way Collection.			Total Collection.			Total Expenses.			Credit.			Debit.		
		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1	896	215	4	0	64	1	0	279	5	0	96	8	6	182	12	6	..	..	..
2	1024	251	10	0	91	7	0	343	1	0	112	0	6	231	0	6	..	..	..
3	1024	199	14	0	94	2	0	294	0	0	121	6	3	172	9	9	..	..	..
4	768	134	11	0	68	5	0	203	0	0	76	8	0	126	8	0	..	..	..
Total.	3712	801	7	0	317	15	0	1,119	6	0	406	7	3	712	14	9	0	3	1*

Bus.

Driver.

Conductor.

* Net credit per mile.

APPENDIX D. 16.

Line-war statement of receipts and working expenses for November 1937.

POLLACHI LINE.

Week.	Petrol.	Oil.	Petrol.		Oil.		Tyres and Tubes.		Spares.		Batta.		Other Expenses.		Total Expenses.	
			RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
1	322	9½	452	13 0	27	12 0	..	..	83	4 0	54	6 6	..	..	618	3 6
2	361	10½	507	10 6	30	7 9	99	14 0	142	6 0	55	2 0	..	..	835	8 3
3	350	10½	492	3 0	28	3 6	99	6 0	181	1 0	52	10 6	..	..	853	8 0
4	261	9½	367	0 6	26	3 3	89	3 0	187	9 0	40	8 0	..	..	710	7 9
Total.	1294	40	1,819	11 0	112	10 6	288	7 0	594	4 0	202	11 0	..	..	3,017	11 6

579

APPENDIX D. 17.

POLLACHI LINE.

Week.	Miles.	Memo Collection.		Way Collection.		Total Collection.		Total Expenses.		Credit.		Debit.	
		RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
1	4456	1,433	13 0	602	10 0	2,036	7 0	618	3 6	1,418	3 6	..	..
2	4800	1,474	9 0	628	2 0	2,102	11 0	835	8 3	1,267	2 9	..	..
3	4,850	1,351	0 0	636	3 0	1,987	3 0	853	8 0	1,133	11 0	..	..
4	3600	1,040	13 0	485	11 0	1,526	8 0	710	7 9	8,160	0 3	..	..
Total.	17706	5,300	3 0	2,352	10 0	7,652	13 0	3,017	11 6	4,635	1 6	0 4 2*	..

Bus. Driver. Conductor.

Pollachi Line.

November 1937.

* Net credit per mile.

APPENDIX D. 18.

UNITED MOTORS (COIMBATORE) LIMITED, COIMBATORE.

(1) *Bus Co.: 2690 fitted with Dorman Diesel Engine on Bedford Chassis.*

Month.	Miles run.	Diesel Oil Gl.	Diesel oil cost.		L. Oil Gl.	Lubricating oil cost.		Total cost.		Expenses per mile.	
			RS.	A. P.		RS.	A. P.	RS.	A. P.	RS.	A. P.
July ..	3,472	139	78	3 0	2	5	12 0	83	15 0	0	0 5
August ..	3,323	124	69	12 0	3½	11	4 0	81	0 0	0	0 5
September ..	3,600	136	76	8 0	1	3	0 0	79	8 0	0	0 4
October ..	3,700	138	77	10 0	1	3	0 0	80	10 0	0	0 4
November ..	3,300	114	64	2 0	½	0	12 0	64	14 0	0	0 4
Total ..	17,395	651	366	3 0	8	23	12 0	389	15 0	0	0 4

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(2) *Bus Co.: 2695 fitted with (Perkins) Diesel Engine on Bedford Chassis.*

Month.	Miles run.	Diesel Oil Gl.	Diesel Oil cost.		L. Oil Gl.	Lubricating oil cost.		Total cost.		Expenses per mile.	
			RS.	A. P.		RS.	A. P.	RS.	A. P.	RS.	A. P.
July ..	3,300	148	83	4 0	3½	9	4 0	92	8 0	0	0 5
August ..	2,269	80	45	0 0	½	0	12 0	45	12 0	0	0 4
October ..	946	45	25	5 0	2½	7	8 0	32	13 0	0	0 7
November ..	2,848	122	68	10 0	½	0	12 0	69	6 0	0	0 4
Total ..	9,363	395	222	3 0	6½	18	4 0	240	7 0	0	0 4

September. Stopped for licences etc.
on other tests.

Bus M. L. 1914 fitted with Petrol Engine Bedford Chassis.

Month.	Miles. run.	Petrol Gls.	Petrol cost.		L. Oil Gls.	Lubricating oil cost.		Total cost.		Expenses per mile.	
			RS.	A. P.		RS.	A. P.	RS.	A. P.	RS.	A. P.
July ..	3,302	241	289	15 3	5	14	12 0	304	11 3	0	1 6
August ..	3,400	237	285	2 3	5½	14	7 0	299	9 3	0	1 5
September ..	3,488	247	297	2 9	4½	12	6 0	309	8 9	0	1 5
October ..	3,520	237	285	2 3	5½	15	2 0	300	4 3	0	1 4
November ..	2,830	173	208	2 0	6½	16	8 0	224	10 0	0	1 3
Total ..	<u>16,540</u>	<u>1,135</u>	<u>1,365</u>	<u>8 6</u>	<u>26½</u>	<u>73</u>	<u>3 0</u>	<u>1,438</u>	<u>11 6</u>	<u>0</u>	<u>1 4.7</u>

Bus M.L. 1917 fitted with Petrol Engine Bedford Chassis.

Month.	Miles. run.	Petrol Gls.	Petrol cost.		L. Oil gls.	Lubricating Oil cost.	Total cost.		Expenses per mile.		
			RS.	A. P.			RS.	A. P.	RS.	A. P.	
July ..	3,794	247	297	2 9	3½	9	7 0	306	9 9	0	1 4
August ..	3,143	202	243	0 6	3½	8	15 0	351	15 6	0	1 3
September ..	3,400	213	256	4 3	5	13	12 0	270	0 3	0	1 3
October ..	3,788	232	279	2 0	5½	13	12 0	292	14 0	0	1 3
November ..	3,040	205	246	11 3	11½	30	15 0	277	10 3	0	1 6
Total ..	<u>17,165</u>	<u>1,099</u>	<u>1,322</u>	<u>4 9</u>	<u>28</u>	<u>76</u>	<u>13 0</u>	<u>1,399</u>	<u>1 9</u>	<u>0</u>	<u>1 3</u>

APPENDIX E. 1.

LONDON TRANSPORT SYSTEM.

Details of Working Expenses.

Railways.

Administration	194,672
Maintenance	1,208,469
Running Expenses	1,494,264
Traffic Expenses	784,343
Running Powers (Credit)	7,813
	3,673,935
Provision for Renewal	855,627
	4,529,562
Total ..	4,529,562

Buses and Coaches.

Administration	462,785
Maintenance—	£
Rolling Stock	1,708,905
Buildings	55,169
Transfer to Maintenance Reserve	614
	1,764,688
Running Expenses—	
Fuel (including duty)	2,230,789
Wages and clothing of drivers and conductors.	6,678,832
Car cleaning and other garage expenses	985,455
Tyres	224,221
	10,119,297
Traffic Expenses—	
Wages and clothing of Traffic Staff	291,404
Ticket service	100,453
Licensed vehicle duty and licensing fees	523,843
Miscellaneous	82,007
	997,707
	13,344,477
Provision for Renewal	1,009,090
	14,353,567
Total ..	14,353,567

APPENDIX E. 2.
London Passenger Transport System.
CAPITAL.

	Total London Transport stocks out- standing at 30th June. £	Capital Expenditure at 30th June. £	Provision for Renewal year ended 30th June. £	Percentage of Capital Expenditure.	Percentage of Gross Revenue.	Balance available in Renewal reserve at 30th June. £
In respect of transferred or acquired undertakings.	110,176,486*	111,251,852†	..	..	..	..
583 1934	111,535,454	111,575,969	20,20,500	1.81	7.0	1,971,597
1935	111,535,454	113,152,136	25,26,200	2.23	8.3	4,331,340
1936	111,933,867	118,088,715	23,00,000	1.95	7.4	6,409,417
1937	111,933,867	123,777,419	24,00,000	1.94	7.5	8,302,780
1938	111,933,867	131,281,061	24,25,000	1.85	7.4	9,818,497
Increase over 5 years.	1,757,381	20,029,209	..	..	..	..

* Issued at varying dates during the first 3 years.

† Assets acquired at varying dates during the first 3 years.

APPENDIX E. 3.

London Passenger Transport System.

TRAFFIC.

Year ended 30th June.	Passenger Jour- neys originating on Board's system.	Boards Pas- senger Receipts after operation of the London Passenger Pool- ing Scheme.	Average receipts per Passenger Journey (All Pool Journeys).	Service Passenger Car Miles run by the Board's vehicles.	Car Miles per head of population.	Rides per head of population (All Pool Journeys).
	£	£	£	£	£	£
1934	3,396,000,118	27,151,277	2.305	514,555,269	54.9	432
	100	100		100		
1935	3,582,348,430	28,823,262	2.368	533,835,733	56.3	437
	105.5	106.2		103.7		
1936	3,647,962,633	29,532,879	2.312	546,691,942	57.1	440
	107.4	108.8		106.2		
1937*	3,636,393,610	30,077,161	2.347	544,630,459	56.1	436
	107.1	110.8		105.8		
1938	3,723,655,768	30,758,440	2,341	567,029,870	57.9	441
Increase in 4 years.	327,655,650	3,607,163	0.036	52,474,601	3.0	9
Per cent	9.6	13.3		10.2		

* Central Bus Strike, 1st to 27th May 1937.

APPENDIX E. 4.
LONDON PASSENGER TRANSPORT SYSTEM.

Summary.

	Expenditure.	Provision for Renewal.	Total.
	£	£	£
Railways	3,673,935	855,627	4,529,562
Buses and Coaches	13,344,477	1,009,090	14,353,567
Trams	3,649,728	303,306	3,953,034
Trolley buses	1,569,401	256,977	1,826,378
General Expenses	2,685,715	..	2,685,715
Total	24,923,256	2,425,000	27,348,256

Passenger Receipts.

	£	£
Railways .. .. .	..	19,512,895
Buses and Coaches—		
Ordinary	16,177,628	
Season	59,023	16,236,651
Trams Ordinary	3,493,800	
Workmen	627,499	4,121,299
Trolley buses Ordinary	1,950,350	
Workmen	298,984	2,249,334
Total		42,120,179

Average Receipt per Passenger Journey 2·341*d.*

*Number of Passenger journeys originating on the
Board's system.*

	£	£
Railways .. .. .	..	487,749,023
Buses and Coaches	2,165,176,787	
	2,132,765	2,167,309,552
Trams .. .. .	..	700,932,969
Trolley buses .. .. .	..	367,664,224
Total		3,723,655,768

APPENDIX F. 1.

Rates average earnings per vehicle mile and the average load per vehicle at each out-agency on the Nizam's State Transport System during 1938-39.

Out-Agency	Rail-head.	Distance in Miles.	Rate per maund mile.	Average earnings per vehicle mile (Goods and parcels).		Average load per loaded vehicle.		Serial No.
				1937-38.	1938-39.	1937-38.	1938-39.	
Bhaisa	Basar	18	1 pie per maund mile.	Pies. 50.2	Pies. 58.1	Tons. 2.37	Tons. 2.70	1
Adilabad	Nizamabad	92	* " }	50.3	35.6	1.83	3.19	2
Nirmal	"	42		42.0				3
Amrur	"	16						4
Medak	Akanapet	14		38.1				35.3	1.50	1.34	5
Karimnagar	Warangal	48	"	49.3	43.5	1.53	1.54	6
Nalgonda	Bhongir	44	½ pie per maund mile.	20.0	23.4	1.36	2.22	7
Suriapet	Khammameth	39	"	18.1	26.0	1.59	3.17	8
Bir (Nizam)	Jalna	66	0.64 pie per maund mile.	31.2	41.8	1.91	2.61	9
Mashirabad	Secunderabad	3	2 pies per maund mile.	80.2	72.8	1.79	1.57	10
Aurangabad	City Aurangabad	3	1.67 pies per maund mile.	77.9	62.1	2.01	1.65	11
Azamabad	Secunderabad	3	2 pies per maund mile.	..	96.1	..	2.56	12

* ½ pie per maund mile for local booking from 22nd December 1938.

Note:—For out-agencies 1 to 9 a reduced rate based on 0.75 pie per maund mile had been granted for the cement traffic to Messrs. Khan Bahadur Ahmed Alladin & Sons, Secunderabad, from 12th August 1937.

APPENDIX F. 2.

Statement showing details of Goods Traffic handled at each Out-Agency on the N. S. S. Railway.*

Serial No.	Out-Agency.	No. of months during which out-agency operated.	1937-38.			1938-39.			
			Tons. carried.	Railway Earnings.	Road Earnings.	Tons. carried.	Railway Earnings.	Road Earnings..	
				Rs.	Rs.		Rs.	Rs.	
1.	Karimnagar	12	359	4,035	2,575	12	388	5,327	2,790
2.	Mashirabad	8	3,918	33,286	3,384	12	3,492	46,240	3,024
3.	Nalgonda	12	464	1,786	1,578	12	916	4,063	3,126
4.	Suriapet	12	1,080	4,958	3,193	12	5,435	26,611	15,541
5.	Adilabad	12	360	7,884	4,611	12	1,787	15,513	12,355
6.	Amrur	12	359	4,572	1,135	12	266	4,838	809
7.	Aurangabad	6	4,679	22,651	3,421	12	8,150	42,595	6,083
8.	Bhaisa	12	6,576	94,201	16,501	12	4,135	44,994	10,438
9.	Bir (Nizam)	12	908	6,955	6,132	12	2,890	16,409	17,636
10.	Medak	12	1,033	9,846	2,180	12	945	9,443	1,996
11.	Nirmal	12	772	7,338	4,325	12	561	6,211	3,410
12.	Azamabad	..	..	..	..	9	1,683	9,951	1,433
	Total	..	20,508	1,97,512	49,035	..	30,648	2,42,195	78,641

* Figures compiled from the Annual Report of the General Manager of H. E. H. Nizam's State Railway for the year ending 31st March 1939. P. 29.

APPENDIX G.

A Comparative Study of the rates charged for Canal and Bus Transport in the West Godavary District with special reference to competitive rates where prevalent. (Figures as obtaining till November 1937).

Name of Place From Narsapur to	Distance travelled in miles.	Rates charged.		Remarks regarding Time taken.
		Canal	Bus	
		Transport. Rs. A. P.	Transport. Rs. A. P.	
Palacole	6	0 1 0	0 2 0	Travelling bus will be at the rate of 20 miles per hour and by boat at the rate of 2 miles per hour on an average.
Kavitam	11	0 2 0	0 4 0	
Martair	14	0 2 0	0 5 0	
Penugonda	16	0 3 0	0 6 0	
Peravali	23	0 4 0	0 8 0	
Thupanu	26	0 5 0	0 8 0	
Nidadavolu	35	0 5 0	0 8 0	

588

Name of Place. (From)	Name of Place. (To)	Miles Travelled.	Rates charged.		Remarks regarding time taken.
			Canal	Bus	
			Transport. Rs. A. P.	Transport. Rs. A. P.	
Martair ..	Penumantra ..	7	..	0 2 0	} Motor launch. { At the rate of 6 miles per hour. By launch do. By bus.
	Attilli ..	11	..	0 4 0	
	Pippara ..	16	..	0 6 0	
	Tadipalligudur ..	22	..	0 8 0	
Martair ..	Kodir ..	8	..	0 2 0	
	Sidhantam ..	7	..	0 3 0	
Nidadavolu ..	Ellore ..	50	0 4 0	0 12 0	
Narsapur ..	Rajole ..	12	0 4 0		
Vizzaswaram ..	Rajahmundry ..	6	0 1 6		
Rajahmundry ..	Badrachelam ..	100	2 8 0		
Badrachelam ..	Dommagudem ..	12	..	0 5 0	

APPENDIX H. 2.

Specimen Bin Card used on the U. M. S., Combaratore.

069	Line
Date.	Driver
Miles.	
Petrol Gl.	
Oil Gl.	
Petrol.	
Oil and Grease.	Bus
Tyre and Tubes.	Conductor
Spare Parts.	
Batta.	
Other Expenses.	
Total Expenses.	
Total Collection.	Date
Debit or Credit.	Month
Reward or Punishment.	
Case.	
Reward or Punishment.	
Ref. No.	
Remarks.	

Bibliography.

- Acworth, W.: Elements of Railway Economics.
Agg and Brindley: Highway Administration and Finance.
Brunner: The Problem of Motor Transport.
Bonavia: Economics of Transportation.
Bell Horace: Railway Policy in India.
Cleveland Slivens: English Railways.
Daggett: Principles of Inland Transportation.
Dunnage: Britain's New Profession.
Dunnage: Transport and the Public.
Douglas Knoop: Outlines of Railway Economics
Daniels, W. M.: American Railroads.
Dutt: India under the Victorian Age.
Farrar: How to make the British Railways pay?
Fenelon, K. G.: Economics of Road Transport.
Fenelon, K. G.: Transport Coordination.
Fenelon, K. G.: Railway Economics.
Fournier: Railway Development in Canada.
Frankel: Railway Policy in South Africa.
Ghosh, S. C.: A. Monograph on Indian Railway Rates.
Ghosh, S. C.: Indian Railway Problems.
Ghosh, S. C.: Organisation of Railways.
Gadgil and Gogate: Motor Bus Transportation.
Gilbert, C. W.: Motor Insurance.
Guha, S. K.: Transport Coordination in India.
Haines: American Railway Management.
Jackman: Economic Principles of Transportation.
Jones: Principles of Public Utilities.
John Bauer: Public Utility Regulation for purposes of Rate Control.
Kirkaldy and Evans: History and Economics of Transport.
Jagtiani, H. M.: Role of the State in the Provision of Railway.

- Locklin, D.: Economics of Transportation.
- Lele, P. R.: Federation of India.
- Morrison: Socialisation and Transport.
- ✓Molesworth, G. L.: Indian Railway Policy.
- Mehta, N. B.: Indian Railways, Rates and Regulation.
- Mukherji, R.: Economic Problems.
- ✓MacGeorge: Ways and Works in India.
- Marshall: Principles of Economics.
- Marshall: Industry and Trade.
- The Madras Agriculturists' Relief Act—A Study by
B. V. Narayanaswamy Naidu and P. Vaidyanathan.
- The Madras General Sales Tax Act—A Study by
B. V. Narayanaswamy Naidu and S. Tiruvengadathan.
- Newbold: Railways.
- Pratt, E. A.: History of Inland Transport and Communication.
- Pratt, E. A.: Nationalisation of Railways.
- Pratt, E. A.: The Railway State Muddle in Australia.
- Pilcher, R. S.: Road Transport Operation.
- Sherrington, C. E. R.: A Hundred Years of Inland Transport.
- Sherrington, C. E. R.: Economics of Rail Transport in Great Britain.
- Sanyal, N.: Indian Railways.
- ✓Shah, K. T.: Indian Tariffs and Transport in India.
- Sarkar, B. K.: Inland Transportation and Communications.
- ✓Shah, K. T.: Sixty Years of Indian Finance.
- ✓Srinivasan, K. C.: The Law and Theory of Railway Rates.
- ✓Stratchey, R.: Public Works in India.
- Sharfman: The Interstate Commerce Commission.
- Thomas, P. J.: Commodity Prices in South India.
- Tiwari, R. D.: Freight Rates in India.
- Taussig, F. W.: Principles of Economics.
- Van Biljon: State Interference in South Africa.
- Wahl Paul: Road and Rail in Forty Countries.
- Zweig, F.: Financing of Consumer's Credit.

REPORTS AND OTHER PUBLICATIONS.

- The Indian Fiscal Commission Report.
- The Indian Industrial Commission Report.
- The Famine Commission Report. 1880 and 1901.
- The Indian Coal Committee Report.
- The Mackay Committee Report.
- Thomas Robertson's Report on Indian Railway Administration 1903.
- The Acworth Committee Report 1921.
- The Indian Railway Committee Report 1937.
- The Indian Labour Commission Report.
- Madras Administration Reports.
- Reports of the Director of Industries, Madras.
- Report of the Royal Commission on Agriculture in India.
- The Madras Motor Vehicles Taxation Act 1914.
- The Madras Motor Vehicles Taxation Act 1931.
- The Madras Road Traffic Control Act 1938.
- The Madras Motor Vehicles Code 1938.
- Debates of the Madras Legislative Council.
- Debates of the Madras Assembly.
- Debates of the Central Legislative Assembly.
- Debates of the Council of State.
- Parliamentary Debates.
- Report on the present State of Road-Railway Competition and the possibilities of their future Co-ordination and development, and cognate matters in Governors' Provinces by K. G. Mitchell & L. H. Kirkness.
- The Motor Vehicles Insurance Committee Report 1936.
- Central Government Budgets.
- Madras Government Budgets.
- Report of the Indian Road Development Committee 1927-28.
- Scheme of Road Development for the Madras Presidency—A. Vipian.
- Agricultural Marketing Reports:—
 - Marketing of Wheat.
 - Marketing of Linseed.

Road-Rail Transport

Marketing of Tobacco.

The Indian External Capital Committee Report.

Evidence submitted by five Indian Witnesses before the Commission on Public Expenditure.

Large Scale Establishments in India.

History of Indian Railways. Government Publication.

Review of the Trade of India.

Review of the Trade in Motor Vehicles (U.K.).

The Pope Committee Reports on the need for economy in Railway Expenditure.

Indian Financial Enquiry: Report of Sir Otto Niemeyer.

Annual Statement of the Sea-borne Trade of British India.

• Rail River Borne Trade in India.

Reports of the Permanent International Association of Road Congresses.

Statistical Abstract for British India.

Reports of the Public Works Department, Madras.

Report of the Public Accounts Committee.

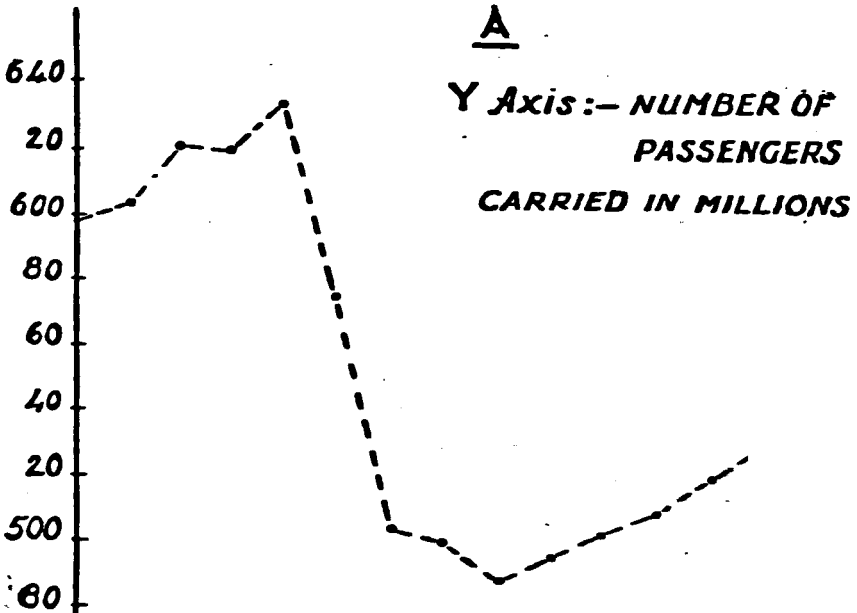
Reports of the Various Chambers of Commerce.

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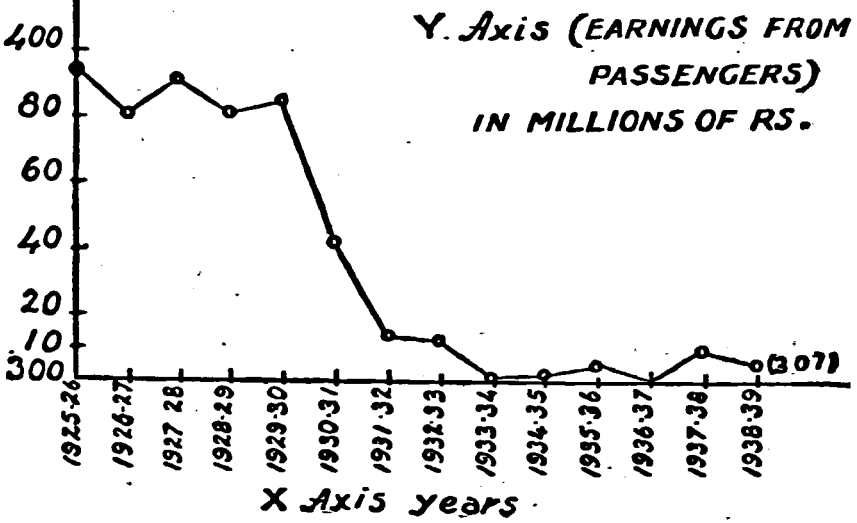
Tariff Board Reports.

Fort St. George Gazette.

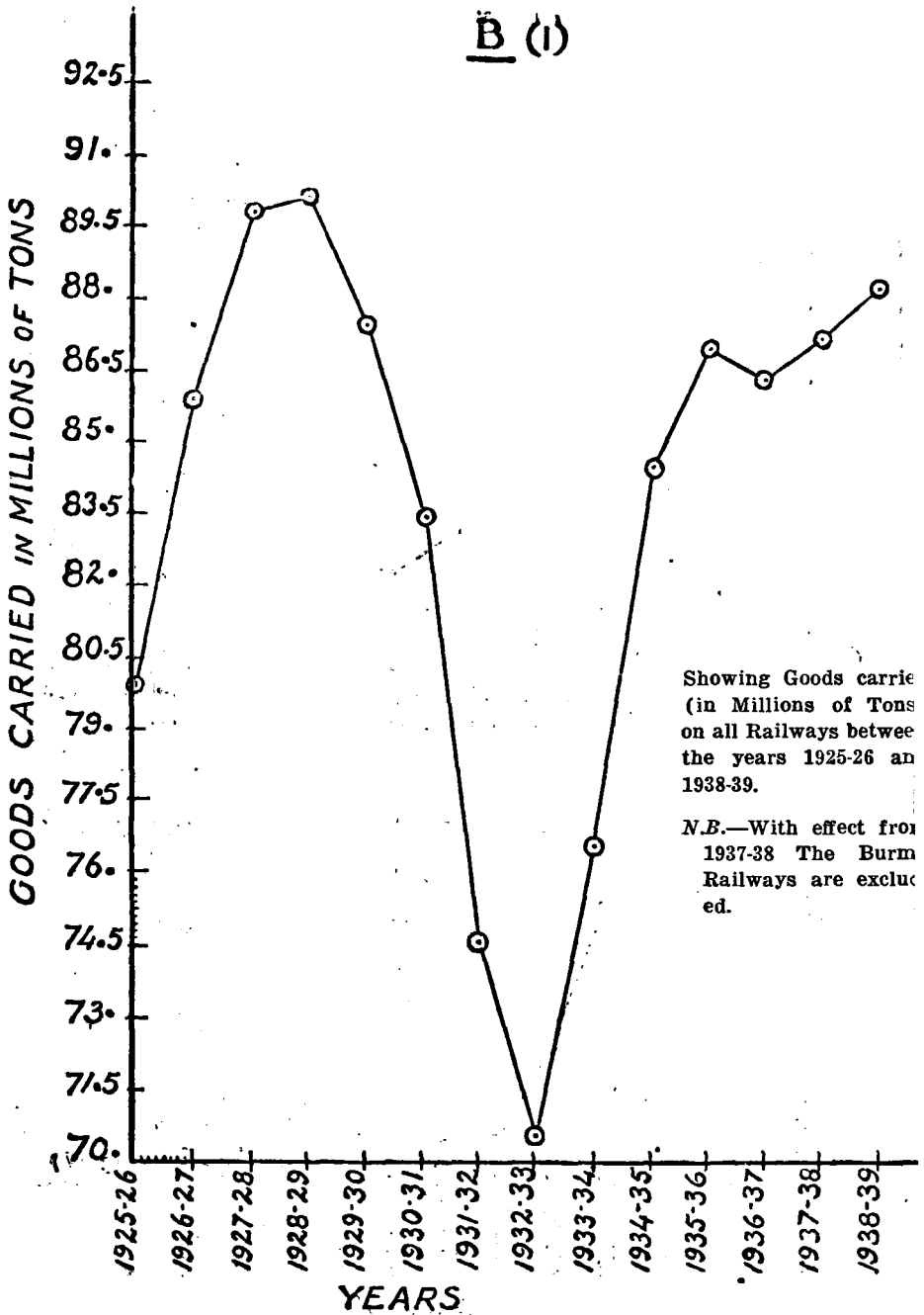
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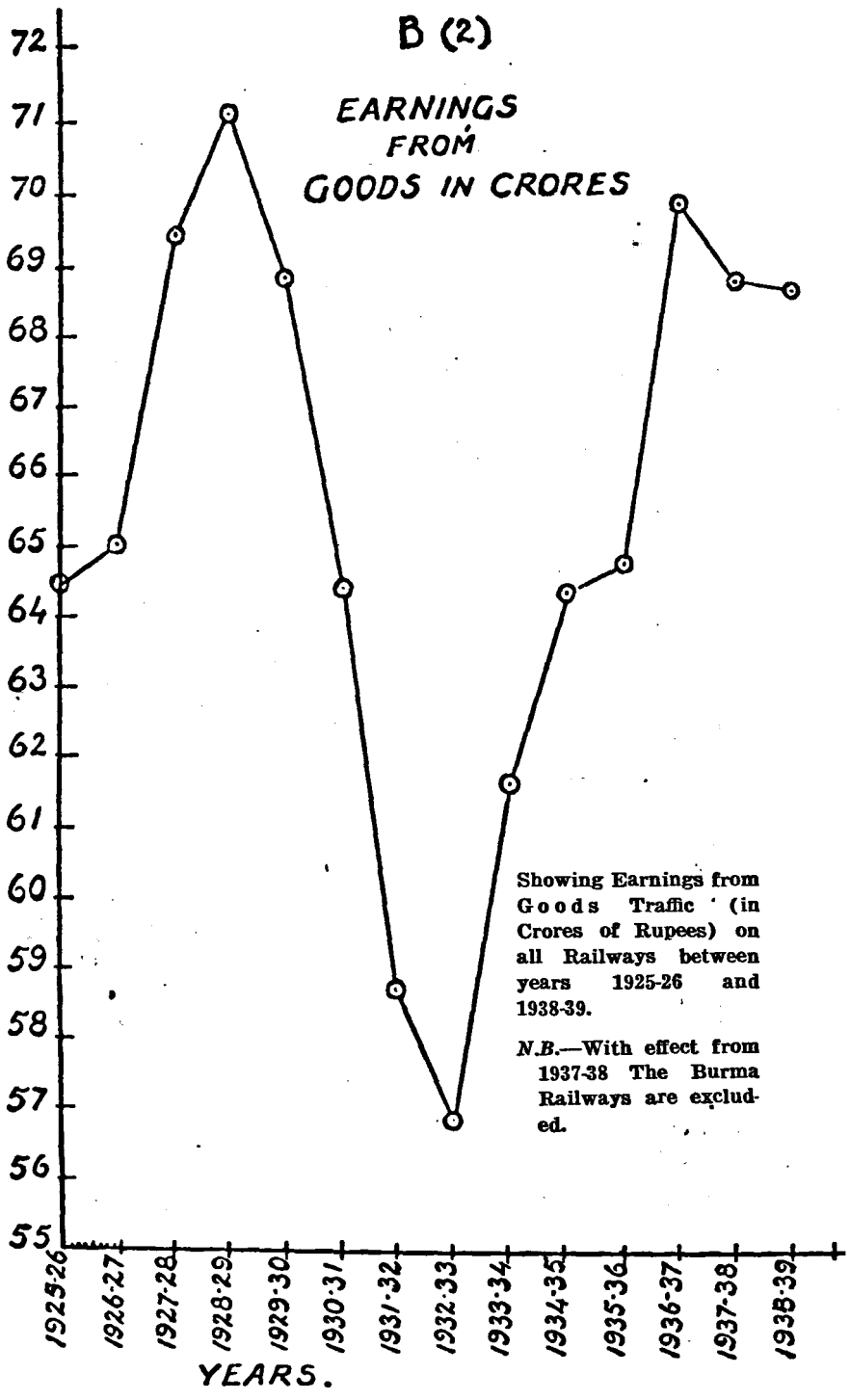
B (i)



B (2)

**EARNINGS
FROM
GOODS IN CRORES**

EARNING FROM GOODS IN CRORES OF RS



Showing Earnings from Goods Traffic (in Crores of Rupees) on all Railways between years 1925-26 and 1938-39.

N.B.—With effect from 1937-38 The Burma Railways are excluded.

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