

A MONOGRAPH
ON
INDIAN RAILWAY
RATES

By S. C. GHOSE

Special Officer with the Railway Board



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PREFACE.

The idea of writing a Monograph on Indian Railway Rates originated with the Hon'ble Sir Robert Gillan, the President of the Railway Board, and I took up the work, at his request, and on behalf of the Railway Board, in July 1917.

The scope of the work was limited to the writing of plain statements of facts relating to the history, policy and making of railway rates in India, so as to arrive at a correct understanding of the past history and of the present position. This is the object with which the book has been written and, therefore, any suggestions as to what action should be taken has, as far as possible, been avoided. It will now be for the Government, the Railways and the public to study the whole thing and to discuss and take action, where necessary, when normal conditions again prevail.

The publications of the Government of India, especially those of the Railway, Commerce and Industry, Geological Survey, Agricultural and Revenue, and Statistical Departments, Mr. K. L. Dutt's Report on the Enquiry into Rise of Prices in India, and the records of the Railway Board have been most useful, and quotations from them have been frequently given.

My grateful thanks are due to all, whose publications I have used, and I only hope that this work will be of use to the public, to the trade and to the Railways, as it was in the interests of all of them that the Government of India, Railway Department, ordered this work to be taken in hand.

The time occupied in actual writing of this book was from July 1917 to January 1918, and the rates are those from tariffs that were published up to October 1917, and the traffic statistics in Part II relate to 1911 and 1912 generally, as those were fairly good average years, and the figures are for normal periods before the war.

It is not claimed that the work is perfect, and it is admitted that there may be errors and short-comings and some of the conclusions may not be sound, but I can say that my earnest endeavour has been to discuss each case from all its phases and to bring out facts impartially.

My sincere thanks are due to the Hon'ble Sir Robert Gillan, who gave me every encouragement in connection with this work, and whenever I needed his advice and instructions they were readily given, and they were of great help. He also indicated to me the lines on which the book was to be written, and at the same time he impressed upon me the necessity for stating plain statements of facts.

I am also grateful to the Hon'ble Mr. C. E. Low, C.I.E., Secretary to the Government of India in the Department of Commerce and Industry.

His advice and suggestions were very useful in connection with Part II of the book.

Mr. G. C. Godfrey, Member, Railway Board, kindly went through the whole book, and his suggestions especially in connection with the chapter on economics of transportation were indeed very valuable.

My thanks are also due to Messrs. Bigg-Wither and Cooper of the Burma and the Assam Bengal Railways respectively for examining the chapters on the rates of these two lines.

Mr. Purceil, Superintendent of Rates, East Indian Railway, gave me some useful hints.

I am also indebted to Mr. C. V. Bliss, the late Secretary of the Indian Railway Conference Association and now General Traffic Manager of Railways in Mesopotamia, for the Note on Simplification of Goods Tariffs—Appendix III.

Lastly, I am thankful to my two assistants Messrs. G. C. Chatterjee and S. C. Bose for their able assistance; but for their help the work would not have been finished in so short a time. Mr. Chatterjee's work in connection with the rates that have been quoted in the monograph was particularly helpful.

S. C. GHOSE.

SIMLA,

April, 1918.

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PART I

GENERAL REMARKS.

THE business of a railway is the conveyance of persons or goods from one place to another, and in selling transportation, a railway has to take into consideration its own interests as well as those of its customers. A railway must take into account the interests of the community as a whole, and every one cannot, therefore, always get the rate he wants. *Business & Railways.*

A railway can only serve its constituents best, so long as it earns sufficient to pay all its operating expenses, including upkeep and maintenance, and a reasonable return on the capital outlay. A railway generally fixes rates which pay best and attract as much business to the railway as it can carry. A railway, like any other business concern, is always trying to add to its revenue by increasing its traffic; but as a railway shareholder does not expect as high a dividend as an investor in any other industrial or commercial concern, a railway is expected to spend and does spend money on improvement of facilities whenever it is found necessary to meet the requirements of expanding traffic or to attract fresh traffic. It is the aim of a railway to reach the widest class in the sale of its commodity of transportation and it must therefore fix its charges for carriage of passengers and goods on the principle of "what the traffic will bear."

No better explanation of the term "what the traffic will bear" can be given than is found in the chapter on "Goods Rates" in Hugh Munro Ross' book on British Railways. The explanation given by him is as follows:— *Definition the term "what the traffic will bear."*

"One way the obvious but short sighted and ineffectual way of doing this is to charge the highest possible rates and be content with the limited amount of business that can struggle to exist in such conditions: that is the principle of charging what traffic will not bear. The other way recognises that a small profit, many times repeated, is better than a large one obtained only occasionally, and that a large business affords greater opportunities of gain than a small and restricted one. Hence it means that a railway accommodates its charges to the circumstances of the traffic and encourages new customers and new traffic by moderate rates and liberal treatment. This is the ideal pointed to by the principle of charging what the traffic will bear."

In India, the passenger traffic is divided into 4 classes, and the fares generally are as follows:— *Passenger classes and fares.*

1st class	18 pies per mile.
2nd class	9 "
Intermediate	4½ "
3rd class	3 pies to 1½ pies per mile.

The great bulk of the railway passenger traffic is carried in third class and the fare charged is between 3 pies and 1½ pies per mile.

Goods classes and rates.

The goods traffic is divided into six classes and the following are the maximum and minimum rates allowed by the Government for each class between which the railways can vary their rates :—

		* PIES PER MAUND PER MILE.	
		Maximum.	Minimum.
1st class	. . . . .	½	10
2nd "	. . . . .	¾	½
3rd "	. . . . .	¾	½
4th "	. . . . .	¾	½
5th "	. . . . .	1	½
X class (Explosives, including dangerous goods)		1½	½

(The rates for coal are, however, cheaper and will be found in subsequent Chapters.)

Agricultural productions, mineral articles and cheap goods are grouped under the lowest or 1st class, and the ordinary rate for this class is ¾rd pie per maund per mile or 9 pies per ton mile. The second class contains manufactured articles in their first stage and articles in every day use, such as piece goods, brassware, copperware, etc., and also higher priced agricultural productions such as cotton. The higher priced articles of merchandise which are carried by railways in small quantities, bulky articles requiring more space in wagons, fragile goods which are attended with risk of damage or breakage during transit, valuable articles, such as silks, etc., and dangerous goods requiring special handling and transport are all placed in higher classes : in fact, the rates charged on commodities increase with the increase in prices of goods and generally the quantity carried also becomes less.

But the largest proportion of the railway business is done in goods of the cheapest class, consisting of agricultural productions and minerals for which special rates lower than the maximum are charged. The difference between the ordinary and the special rates is that while the former represents the maximum rate of the class to which the goods pertain the latter is lower than the maximum but within the minimum.

As already stated, the chief consideration in the fixing of special rates is to attract as much traffic as possible to a railway and as the volume of traffic increases in weight and the distance hauled over a railway becomes greater the rate per mile becomes less, for any additional traffic brought to the railway and carried in wagon loads for long distances means distribution of operating expenses over a greater distance and between a larger number of unit miles, and therefore, it is considered, it pays the railways to encourage such traffic.

Factors in determining rates.

Competition is one of the important factors in determining rates ; competition may be between—

- (1) Railways ;
- (2) Railways and river transport ;

* (N. B.—A pie is equivalent to 1/4th of a penny ; a pound (£1) represents Rs. 15 fifteen, a rupee is made up of 16 annas or 16d, and 12 pies make one anna.)

- (3) Railways and land transport (carts, pack animals);
- (4) Ports;
- (5) Places of supplies; and also
- (6) Industries.

Competition between railways not infrequently includes competition between ports and competition between places of supply and between industries.

The question of cost of carriage has to be taken into account in determining the competition limit, and in India minimum rates have been fixed below which a railway cannot reduce its charges in competition, and this limit in the case of 1st class goods, which constitute great bulk of the traffic, is determined by the factor of the average cost of haulage of the railways, taking the railways of India as a whole, because the Government is practically the owner of all the important trunk lines of the country and is responsible to see that in competition between railways, one railway does not force down its own rates or the rates of another line to non-paying figures. In the case of one or two lines, however, the minimum fixed by the Government may not be the bottom limit of its power to give the lowest rate; but as the Government ownership extends to all the important lines, if a uniformity in respect of bottom limit is not maintained for the sake of one or two railways, the tendency will be to force down the rates to the bottom limit on many railways in competition with such lines as can charge lower than the general bottom limit rates, which cannot be to the interests of the state.

The question of rates charged on goods carried by Indian railways has, during recent years, attracted the attention of the public, and this subject was discussed at great length in the Imperial Legislative Council in 1912 and in 1915.

Railway rates constitute an important factor in the trade and commerce of a country, and divergent opinions prevail in every country, where there are railways, on the point as to whether railways are doing all that should be done in the matter of manipulation of rates in the best interests of the people.

The "Enquiry into the Rise of Prices in India" has disclosed the fact that the Indian railways have, in times of stress, been very useful in affording relief by importing food stuffs into the affected areas, and that without the railways the results in times of distress in famine stricken districts would have been disastrous. This enquiry has also shewn that the railways have enabled the ryots to dispose of their surplus production at a fair price, thus increasing their income and their purchasing power which is again shewn by the increase in imports, especially in articles, which do not constitute bare necessities of life. The area under cultivation has generally increased with the advent of railways.

*Railways
useful in
times of s*

The Indian railways are now in a prosperous condition and their business is advancing and it is held by some that the interests of the railways and of the public are allied together. In one of the latest publications on "Railroad Transportation," by a well known writer on Railway Economics, it has been remarked :—

"A railway cannot possibly prosper unless the people also prosper. A railway cannot charge a higher rate than the production can afford to pay and a railway cannot afford to be hostile to the interests of a community."

*Early rail-
way policy.*

The Railway policy in India has been regulated from the very start by the Government enunciating the broad principles from time to time, it being recognised by the Government and made known to the railway administrations that the railways should be so managed and the rates and fares so regulated as to offer the people the greatest possible benefit of railway transportation. But at the same time, it has also been admitted by the Government that the utility of the railways can only be fully enjoyed by the public and the railway mileage in India go on increasing if the railways are paying concerns and are self-supporting. Therefore, such rates, as are not considered to be compatible with the interests of a railway, cannot benefit the people in the long run, for if the earning power of a railway is reduced, naturally its power of affording facilities to the public will also be restricted.

A railway while benefiting the country generally, benefits the area lying within its sphere in particular, and, therefore, it is believed that it is by the endeavour of each railway to serve the interests of the districts and of the community it is directly concerned in, that the whole country can be best served by the entire railway system.

It is true, multiplication of agencies for the working of the trunk lines has not been considered desirable from many points of view, and it is, therefore, that amalgamations of several railways have taken place and branch lines belonging to separate companies are sometimes worked by main lines. But at the same time, it is in order to protect the individual interests of various provinces, which differ in many respects, and to allow them to develop their resources independently or in co-operation with the neighbouring districts and provinces, that the trunk railways of India, although belonging to the State and amalgamated in several cases for purposes of economy and to assist the natural flow and distribution of traffic and also for political reasons, are allowed to be managed as best as they can be in their own individual interests and, in the interests of the area they serve in particular.

*Necessity for
this publica-
tion.*

In India, the Government is practically the owner of all the important trunk lines and it is considered by them that the time has come when it is necessary to bring about clearly the relations between the Government and the railways in the matter of rates quotations and the policy adopted in regard to rates control; but before proceeding

GENERAL REMARKS.

v

to do so, it may not be out of place to say a few words about the effect of the railways and of railway rates on the income of the peasantry, who constitute the great bulk of the Indian population. It will, therefore, be useful to quote following extracts from the "Report of the Enquiry into the Rise of Prices in India," published in 1915, as they bear on this point very directly.

"The advent of the railway has been of special advantage to the peasantry. In all the large productive tracts, the introduction of railways is usually followed by the substitution of central markets, where the producers are brought face to face with dealers and brokers, and are no longer dominated by the village shop-keeper, who would take over the crop from the cultivator at his own valuation, which is not often that of the market at which he himself disposes of it. The villager is thus brought into touch with the outer world; he learns the ways of trade and reaps the profit of bountiful harvests."

Effect of railways (the condition of the ryot)

"Before railways were constructed the cultivator derived little benefit from an abundant harvest. His markets were confined to a small area, and if the supply were greater than the demand, as it would be in a good year, prices fell and he lost the profits from the larger yields and sometimes found it economical to leave part of his crop uncut. Railways have altered these conditions. They have rendered possible the transfer of supplies from the areas of plenty to areas of scarcity."

* * * * *

"It has already been explained that statistics of railway freights for selected articles and for selected leads on the principal railways have been compiled and are published with the statistics appended to this report. A glance at this statement will show how very large the reduction in freight has been; in the case of coal and tea, being as much as 40 per cent., while in the case of jute, jute manufactures and sugar it has been 27 to 31 per cent. The smallest reduction has been in grains and pulses and raw cotton, but here also it has amounted to 20 per cent."

Reduction rates in 2 years ends 1912-13, enhancement since 1911

It may be necessary to explain why in comparison with the reductions in railway rates for other commodities the reductions in charges for grain and cotton have been less; this is due to the fact that the railway rates for grain were from the commencement fixed on a low basis, and in the case of raw cotton it was found, on special enquiry made some years ago on behalf of the Great Indian Peninsula Railway, which carries by far the largest amount of traffic in cotton, that the rates of that railway were not such as prevented expansion of the area under cotton cultivation or the expansion in trade in cotton, and it was considered advisable to maintain the somewhat comparatively high rates for cotton in order to maintain the railway earnings.

Since, however, the issue of the report of the Prices Enquiry Committee in 1915 there have been enhancements in rates.

It may, therefore, be explained that the large reductions in railway rates, especially at the junctions and stations adjacent to them, made during the last 20 years, were in many cases not exactly called for by the trade. They were due to competition between railways. The period of keen competition is over, and the area to be served by various railways and routes is now more or less defined. Competition, however, enabled the railways to find what areas come within the sphere of each railway, route or port, and it has also been ascertained what rates the traffic can bear and what rates are required to develop the resources of the country. Therefore, competition has done a great deal.

It was, however, thought necessary in later years to examine the whole position in regard to rates both in areas that were out of the sphere of competition and in those that were at one time affected by competition, in order to avoid the unnecessary loss of revenue due to the low rates no longer necessary. The matter was investigated and it was found that in some cases with relatively high rates from non-competitive areas the traffic was as large, if not larger, as compared with that from the competitive areas with low rates, which, while constituting undue preference in some cases, also meant loss of revenue to the railways, and hence rates were enhanced, especially to and from the ports, with effect from 1st October 1916.

*Reasons for
the rates in
America being
brought down.*

A statement was made a few years ago that the Indian railway rates though lower than those in European countries were not so low as those in America. Competition between the railways in America forced down the rates which at one time ceased to be paying ones, and the railways there had to devise means to reduce the cost of transportation to be able to maintain the low rates brought about by competition. Eventually such rates were found to be remunerative, from the fact that with the increased traffic and improved methods of transportation, the net earnings, after deduction of working expenses, paid a reasonable return on the capital of the railways. But it should not be forgotten that the capital of many American lines had been written down very considerably, during the period of their bankruptcy, (the result of reckless and undesirable competition both in making railways and in the rates charged), as there was no chance of regaining such capital. Therefore, how far the reduced rates would have been paying rates on the total money spent on each railway, *i.e.*, including large sums that were written off, is extremely doubtful.

The extent to which competition was carried on in America was described to be as follows in the report of an American Railway Commission published in July 1882 :—

“ We have found in the course of our investigations that a species of competition has prevailed from time to time which has brought satisfaction to few persons, if any, and which has resulted in inequalities and disorders greatly detrimental to trade. Such competition

exists when the railroad companies or those who are permitted to solicit business and to make contracts on their behalf, set out with the determination to withdraw freights from their rivals, and secure them for themselves, at all hazards, and regardless of gain or loss; and when acting upon this determination they throw to the winds all settled rates, and in the desperate strife for business offer any inducement in their power which will secure it. The country not long since had experience of such a season, and everywhere we listened to complaints of the injury which legitimate business suffered from it. It was said by parties interested in transportation that the inauguration of such a strife put an end for the time to all possibility of calculating from day to day what would be the cost of carriage, and what could be safely paid or wisely accepted for grain, provisions, or other articles, destined to another market by rail. The control of railroad rates, and, to a large extent, of all railroad business, then passed out of the hands of the legitimate and regular corporate managers into the hands of solicitors for fast freight lines and other agents, who made from day to day and from hour to hour such terms with those having business as would secure it, but generally made secret terms—that the bargain with one man might not prevent their driving a better bargain with another, as they might find opportunity. Under such circumstances persons were favoured and localities were favoured, when the object to be immediately accomplished seemed to require it—regardless of the just maxims of legitimate business, and of the rules of the common law, which enjoin upon common carriers that they shall deal with all customers upon principles of equity and relative fairness.”

No wonder therefore that the American railway rates were forced down to very low figures, but Indian railways have been fortunately free from such a state of affairs as described above.

The English and American railways are bound by certain statutory maxima rates and fares beyond which they cannot charge, the object of this limit being fixed is to protect the public from the levy of unreasonable rates by the railways. But the railways are more or less free to vary their rates, according to the requirements of their traffic, to their best advantage, and naturally they strive to obtain the greatest possible profit for their lines by manipulation of such rates as bring them all the traffic they can carry and at the same time give them a good profit. The Government also exercises control over the railway rates and fares by certain laws and regulations which are referred to in the chapter on “Government Control of Railways in the matter of railway rates and fares.”

*Differenc
between
Indian is
condition
and those
the Unite
Kingdom
the Unite
States.*

In England and in America, railways are private concerns and the Government have no financial interest in them; and the traffic conditions in both countries are different to those in India.

For instance, in England, not including Scotland, it was said in 1906, that there were 8,900 railway stations in the country and 70 ports. The ports, in addition to being available for entrance of foreign merchandise, "were used for the distribution of local merchandise throughout the country, traffic being brought to ports by agency of railways and then taken from port to port" and also to the interior by water in competition with railways and "the stronger justification for lower carriage and for differential rates was water competition than anything else." These conditions are not general in India.

The original idea of the Government with every new railway in India was to align it so as to tap and develop new areas of railless tracts rather than encourage competitive lines merely for the sake of competition. But with the extension of railway mileage in India, although gradual and rather slow, the new lines met one another as well as the older lines at both near and distant points and the new lines became intermediaries for traffic between points on distant railways.

Thus the conditions in India became gradually altered and the railway rates and charges had to be regulated from time to time to meet altered conditions. The natural flow of the traffic, principally in raw productions, has been in the past, from the interior to the ports, and this kind of traffic has constituted the bulk of the railway business.

But there has been an awakening of interest in India in developing its manufactures and industries to make the best use of raw productions of the country and it will be to the interests of the railways in the long run to co-operate in the development of such industries.

The trade conditions in India are also peculiar to its own and are different almost in each province and sometimes differ even in neighbouring districts.

It is not always that goods for export out of India are consigned to the ports for immediate transfer from railway wagons into ships. No small amount of grain and seeds traffic carried to Howrah (Calcutta) in the first instance is eventually exported from the Calcutta port, although Khidderpore Docks are open for goods intended for direct shipment. In the same way, grain and seeds are also consigned to Bombay and are stored and cleaned there in some cases and then exported.

The agriculturist or producer in India is not concerned with the ultimate destination of his goods; his interest ceases when he has disposed them of at the nearest market. The financing traders, in certain cases, principally in grain, pulses, seeds, cotton, etc., have sometimes almost direct influence as to the port the traffic should go to, and this important factor cannot easily be ignored.

It is true that big shipping firms have their agencies at principal buying centres, but in recent years the exporting firms have found it

more convenient to buy at the ports and the Indian dealers, specially in Bombay, export in some cases on their own account.

In the case of the Calcutta port, the financing is done by Marwaris who either buy on their own account or act as commission agents on behalf of merchants up-country, and therefore on trade *viâ* this port, the incidental expenses are greater than in the case of despatches *viâ* Bombay.

The Hindu and Mahomedan merchants of Guzerat, known respectively as Bhatias and Borhas, constitute the great majority of Indian traders in Bombay and the latter have their own buying agencies at almost every important place on the Great Indian Peninsula, the Bengal Nagpur, the Southern Mahratta, the Bombay, Baroda and Central India and the Kathiawar Railways. By this system of buying direct, they avoid commission agency charges. From each centre of such direct agencies of "Borha" merchants they send out petty agents to buy even at small places and to despatch direct from each station.

Dealing now with the conditions of markets in the interior, it is noted that they also differ considerably; for instance in Muttra in the United Provinces one of the big "shop-keepers fixes the prices at which he can sell, and the brokers carry his rate round to other shops; it is not necessary that the other dealers should sell at the same rate too but they do so with slight variations." But this is not the general rule. In many places the agriculturists bring grain for sale without previous arrangement, and the buyers watch their arrivals and then fix their rates. Thus the daily variation in prices in small markets is at times considerable.

Next to deal with the conditions under which the Indian railways deal with their traffic. Excepting coal, which is principally from the coal fields of Bengal and manganese ore from the mines in Central Provinces, both the outward and inward traffic of Indian railways is distributed between so many small stations. Although the railways of Northern India are able to send their export traffic in grain, pulses and seeds, cotton, etc., in comparatively large loads, a large amount of traffic of the railways of Southern India is done in small lots. Taking India as a whole, even wagon load traffic has to be collected from station to station, and wagons have also to be distributed in a similar manner. The percentage of small stations is large, and most stations cannot always give at a time more than one wagon load of 300 to 400 maunds and there is, therefore, the difficulty of using wagons of high capacity in large numbers in India to their best advantage on all lines. Thus also, the cost of operation in India has a tendency to be high in spite of the fact that the labour is relatively cheap as compared with that employed on American and on European railways.

It is also to be borne in mind that in India, the cost of railway materials including rolling stock and machinery and stores is naturally

greater than in those countries, especially in iron and steel goods, as a great deal of these has yet to be imported from Europe.

With these explanations of the difference in the conditions between India and other countries where there are railways, it will be realised that the wholesale application of European and American conditions cannot be suitable to India, but at the same time the experience gained in railway working in those countries has been of great use to India and has avoided the repetition of mistakes in the case of railway rates policy. The evil effects of monopoly or of reckless competition have been avoided.

In discussing the railway rates one cannot entirely overlook the subject of financing of Indian railways.

*Financial
aspect of
Indian
Railways.*

(The trunk lines in India were originally financed by capitalists in England, on generally 5 per cent. guarantee from the Secretary of State for India and for a number of years some of the railways did not pay their guaranteed interest and the deficit had to be made good out of the revenues of India. But gradually the railways became self-supporting concerns and are to-day valuable assets to the Government.

The surplus of net Government revenue from State owned lines after payment of working expenses, interest on capital outlay, interest on debt incurred for purchase of railways, and annuities in purchase of railways were as follows for the years 1909-10 to 1913-14 :—

	Rs.
1909-10	2,50,42,747
1910-11	4,33,70,633
1911-12	7,03,79,776
1912-13	8,60,81,975
1913-14	8,55,85,694)

The main trunk lines of India now belong to the State although majority of them are yet leased to companies for purposes of working.

Except in the case of the Oudh and Rohilkhand Railway, the South Indian Railway, and one or two other small lines, which were purchased by cash payments, only part of the capital of each railway, as it was acquired by the State, was paid off at the time of purchase and for this part payment and for the whole payment made for one or two lines, money had to be raised by the Government on loan.

In terms of the original contract, the purchase value of a railway represented generally the par value of the share capital *plus* 20 per cent., and this commuted amount became the capital of the railway, after it was acquired, for which the Government became liable. Payment in redemption of the balance of the commuted capital was arranged in annuities, which are being paid off yearly in certain fixed sums from the revenues of railways *plus* interest on annuities.

After a railway is acquired by the State, the Government of India takes entire control of expenditure even if the said railway is leased to a company for working and further capital is provided either—

(1) out of the general revenues of the Government ; or

- (2) by raising of capital by the Government in rupee loan in India ; or
- (3) by issue of debentures by the Secretary of State in England ;
or
- (4) by issue of debentures by companies in England on the guarantee of the Secretary of State.

The Railway Company to whom a railway is leased for working, is required to have a nominal capital in the undertaking in shares or in deferred annuities.

In the interests of the development of the trade and resources of India it was recommended by the McKay Committee of 1907-08, that the capital expenditure on Indian railways should be fixed at 12½ millions sterling per annum. This sum was accepted as reasonable expenditure on railways in India but conditions of the money market both in India and in England prevented this amount being spent even in days before the war. An annual expenditure of 8 millions was however arranged for before the war. This amount of 8 millions did not include capital raised in India by Branch Line Companies. The 8 millions represented the capital expenditure for which the Government of India were directly liable. Over and above this amount there is the capital provided by Indian Branch Line Companies for new lines in respect of which the Government and the main lines to which the branches are feeders are liable only for the interest guaranteed.

At the end of the year 1915-16, the total amount of the capital of the State lines leased to companies for working was £365,813,347 of which actual State outlay was £180,530,775 and the balance was made up principally as follows :—

£68,772,691	net outstanding remaining to be paid off to original investors in annuities.
£51,259,000	amount of outstanding debt, yet to be paid, incurred by the Government in connection with the purchase of railways.
£44,550,948	Debentures and Debenture Stock raised in England.
£18,061,829	Company's share of the nominal capital.
£2,500,000	Advances of capital by Secretary of State in England to Companies.
£475,651	Advances to Companies made in India.

With such large sums outstanding on account of capital, which is the debt of the Government of India to be paid out of the revenues of the railways, a certain amount of caution in the matter of general reduction of rates is necessary, although in particular cases when a railway finds that it is lacking in business and that it has facilities to carry additional traffic, reductions to meet such conditions are fully justified, especially when it is known that the reduced rates and fares will increase the volume of business by extending the demand on the markets of consumption or by reduction in prices at places where owing to high freight, business has been hitherto impossible or restricted.

But when railway facilities are unable to cope with the existing traffic and further facilities can only be given slowly, due to circumstances over which a Railway Company has no control, reduction in rates only result in reduction of earnings thus increasing the cost of the railway for the same amount of traffic to be carried at reduced rates. Such a course, if continued for any length of time, must affect the power of the railway in carrying traffic at reasonable rates. It will, however, always pay the railways to be on the look out for traffic in the direction in which the wagons are returning empty—for such traffic, while requiring no additional facilities and very little extra expenditure, will bring in more money. But in such cases also, if it means mere transfer of traffic from one railway to another, it cannot be to the best interests of India or of its Government, as the owner of Indian railways.

There are times when enhancements of rates are also called for. Some have termed enhancements in rates *taxation*, but when the railway expenses go up and there cannot be an increase in traffic unless large sums are spent on renewals or extension of facilities to meet requirements of the present or anticipated increase in traffic the raising of rates is justified especially when funds and materials are not available to pay for extended facilities.

Quotation of rates as demanded by circumstances in various cases.

In a country like India, where large tracts yet remain to be provided with railways and where money has to be found, for extensions to main lines and in improving their facilities, either out of grants from the general revenues of India, demands on which for various kinds of public expenditure are great, or out of borrowed capital (on which interest has to be paid out of the railway revenue), and where main lines are finally responsible for the payment of deficit of the guaranteed interest to branches, financed out of funds raised by private enterprise in India, the public should at times be prepared for enhancement of rates or fares to meet temporary stress under exceptional conditions. When, however, normal conditions return reductions can again be thought of, if it is found that the expansion of India's resources and their development need reduced rates.

When a new industry or trade can be developed, which will in the long run benefit the country and consequently the railways serving it, and it is found that it requires a fostering rate in its early stage it is always good for the railways to encourage a new or a struggling industry by such reasonable rates as circumstances require. But at the same time if the law is made rigid that charge for long hauls should not be greater than for short hauls or if the railways know that a reduction at one point to meet a really deserving case will force down rates at other points, where traffic can well bear the existing rates, they will hesitate to make reductions.

Almost similar remarks apply to equal mileage rates, the evils of which (if rigidly adopted in preference to rates on the basis of "what the traffic will bear") were summarised as follows by the

Select Committee of July 1882, on railway rates and fares in England :—

- “(a) It would prevent Railway Companies from lowering their rates and fares, so as to compete with traffic by sea, by canal, or by a shorter or otherwise cheaper railway, and would thus deprive the public of the benefit of competition, and the company of a legitimate source of profit.
- “(b) It would prevent Railway Companies from making perfectly fair arrangements for carrying at a lower rate than usual goods brought in larger and constant quantities.
- “(c) It would compel a company to carry for the same rate over a line which has been very expensive in construction, or which, from gradients or otherwise, is very expensive in working, at the same rate at which it carries over less expensive lines.

“In short, to impose equal mileage rates on the companies would be to deprive the public of the benefit of much of the competition which now exists, or has existed, to raise the charges on the public in many cases where the companies now find it to their interest to lower them, and to perpetuate monopolies in carriage, trade, and manufacture in favour of those rates and places which are nearest or least expensive, where the varying charges of the companies now create competition. And it will be found that the supporters of equal mileage rates when pressed, often really mean, not that the rates they pay themselves are too high, but that the rates that others pay are too low.

“Pressed by these difficulties, the proposers of equal mileage rates have admitted that there must be numerous exceptions, *e.g.*, where there is water competition, (*i.e.*, at about three-fifths of the railway stations of the United Kingdom), where low rates for long distances will bring a profit, or where the article carried at low rates is necessary, such as coal. It is scarcely necessary to observe that such exceptions as these, whilst inadequate to meet all the various cases, destroy the value of ‘equal mileage’ as a principle, or the possibility of applying it as a general rule.”

It may, however, be pointed out that some of the above arguments do not apply against equal mileage rates in India with same force as in England owing to difference in conditions, such as extensive water competition, which exists in England but not very largely in India.

Having so far related the general factors, which underlie the principles of rates making, we shall now in the subsequent chapters deal with the various phases of the question of railway rates affecting this country including the history of railway developments bearing on railway rates and of competition and combination, etc.

PART III
APPENDICES

APPENDIX I.

RATES OF THE ASSAM-BENGAL RAILWAY.

The Assam-Bengal Railway is subject to competition with water transport almost throughout the whole length of its system, and this accounts for the low rates that were in operation on this railway from the very first, traces of which still remain, although during recent years there has been a free interchange of views with the Steamer Companies and it has been possible thereby to raise rates to the mutual advantage of both concerned.

The Assam-Bengal Railway have their port at Chittagong, and if that is the outlet for the whole of the export traffic that originates on that railway they will get a very good lead. But Chittagong does not export very largely. The main reason for this is that the sea freights from Calcutta and the trade conditions of Calcutta favour the latter as a port for the traffic which has its origin on the Assam-Bengal Railway, except that Chittagong exports tea which is sent direct from the tea gardens packed and ready for shipment principally to America and London through Clan Line Steamers. Chittagong exports rice to the coast ports on the Coromandel Coast and to the Laccadives, Maldives, and the Andamans. There are also some jute baling companies at Narainganj, at Chandpur and at Chittagong, which send jute to Dundee and other places through Clan Line Steamers, but as Calcutta buys jute both for the local mills and for export and mixes jute of various places, and thus secures a better price for the mixed quality, Chittagong cannot get as much traffic as it ought to get from places close to it. There is a baling press at Chittagong, which has not been used so much for jute as for cotton.

MERCHANDISE TRAFFIC.

Dealing with the merchandise traffic, it is observed that during the year 1913-14, which was a good year for the Assam-Bengal railway, rice, tea, jute, coal, salt and kerosine oil were the most important items of traffic.

Rice.

The great portion of the rice traffic is consigned to the Chittagong Strand Road Station, where it is received in the godowns of merchants and sold gradually and despatched according to demand.

Rice is also booked locally and despatched *viâ* Tinsukia and *viâ* Chandpur, the principal despatching stations being those on the length

Singarbeel to Badarpur and Daulatganj to Harinarainpur, Ashuganj, Chaumoochani.

As already remarked, the railway rates on the Assam-Bengal Railway were originally fixed on a low basis as it was considered that in view of the steamer freights being very cheap the railway would not attract the traffic without low rates; therefore, the highest rate for grain including rice in wagon loads was fixed at $\frac{1}{8}$ th pie per maund per mile, which is indeed very low when it is considered that this was the rate charged even for short hauls.

In good years (such as was in 1912) there is a large export of rice from Chittagong, whereas in years of shortage rice is imported into Chittagong by sea from Burma and then sent by rail to stations on the Assam-Bengal Railway.

In the year 1907, the Assam-Bengal Railway authorities thought it fit to enhance the rate for the imported rice instead of letting it remain at $\frac{1}{8}$ th pie per maund per mile. The rate introduced in the year 1907 for rice booked from Chittagong was as follows:—

For distances up to 125 miles <i>plus</i> short distance charge	$\frac{1}{8}$ th pie per maund per mile.
<i>Plus</i> for any distance in excess of 125 miles up to 250 miles	$\frac{1}{8}$ th " "
<i>Plus</i> for any distance in excess of 250 miles	$\frac{1}{8}$ th " "

This enhanced scale was only applied to despatches from Chittagong, but the rate of $\frac{1}{8}$ th pie remained in force both in respect of local traffic and for traffic in rice from Assam-Bengal Railway stations to Chittagong for export.

In 1913, however, the rate of $\frac{1}{8}$ th pie for short distances was abolished and the following scale was introduced generally:—

From 1 to 100 miles	$\frac{1}{8}$ th pie per maund per mile.
From 101 to 150 miles	Re. 0-2-1 per maund.
Beyond 150 miles	$\frac{1}{8}$ th pie " "

This scale remained in operation until 31st December 1915 but with effect from 1st January 1916 the following scale took its place:—

From 1 to 125 miles	$\frac{1}{8}$ th pie per maund per mile.
From 126 to 250 miles	$\frac{1}{8}$ th "
Above 250 miles	$\frac{1}{8}$ th "

Seeing that the above scale has not diverted traffic from the railway it can safely be said that it is such as the traffic can bear. Rice traffic is subject to a terminal charge of 6 pies per maund.

During the year 1913-14, the weight and earnings from rice traffic were as follows :—

Rice in the husk (paddy)	61,216 tons	Rs. 2,18,012
Rice not in the husk	124,222 „	5,40,227

Tea.

Tea is the next item of importance from the point of view of revenue. During the year 1913-14, tea brought in a return of Rs. 5,10,607 although its weight was but 41,723 tons (salt which was carried to the extent of 41,920 tons on the Assam-Bengal Railway during the same year brought a return of Rs. 1,50,316).

75 per cent. of the tea produced in Upper Assam south of the river Brahmaputra is secured to the Assam-Bengal Railway and a good portion of it is brought to Chittagong by rail for direct shipment to England and America. The Railway also gets tea for carriage to Calcutta from these parts. While tea from Sylhet and Cachar districts to Chittagong intended for direct shipment is charged a slightly higher rate, that for Calcutta market is not. The rate to Chittagong from Sylhet and Cachar was originally fixed at 40 pie per maund per mile, but in order to encourage direct shipment a reduction of 25 per cent. was made owing to the depressed state of the industry. This low rate remained in force for a number of years, but the later prosperity induced the Assam-Bengal Railway to reconsider the rate, and with effect from 1st April 1916 it was restored to the former level, *viz.*, 40 pie per maund per mile.

As regards tea from Sylhet and Cachar for sale in Calcutta, the Assam-Bengal Railway rates to Chandpur are lower than 40 pie (the rate charged on traffic to Chittagong). The reason for this low rate is that while the steamer companies have rates on low basis from the Brahmaputra river stations, their charge from Chandpur to Calcutta is comparatively higher, and the Assam-Bengal Railway have naturally to keep down their rates to Chandpur or else the traffic will not come to the railway at all but will go direct from the gardens to the river stations on the Kusiya river. From Chandpur to Calcutta the rate for tea is the same by the direct steamer despatch service *via* Sunderbund as by the combined river and rail route *via* Goalando, but the traffic is carried from Chandpur onwards to Calcutta by river in order to save transshipment at Goalando.

We have dealt with rates for tea from the Sylhet and Cachar districts and we shall now refer to the Upper Assam tea rates. This traffic comes over the hill section of the Assam-Bengal Railway. The principal traffic is *via* Tinsukia from the Dibru-Sadya Railway. During the year 1912 the *via* Tinsukia traffic alone brought the Assam-Bengal Railway a revenue of Rs. 1,36,576. The tea rate from Tinsukia to Chittagong was Re. 1 per maund for 80 lbs. of tea nett.

The steamer companies were recently approached by the Assam-Bengal Railway with a view to agreeing to an enhancement in the rate seeing that the railway was carrying the great bulk of the traffic to Chittagong and it was no gain to the steamers to keep their rates low for this traffic; and in this view they seem to have agreed, for it has been found possible for the railway to increase the rate by about $12\frac{1}{2}$ per cent. all round from the Upper Assam to Chittagong and the charge from Tinsukia to Chittagong is Re. 1-2 for 80 lbs. nett (or say one maund) which works out to about '37 pie per maund per mile for a distance of 574 miles.

The Assam valley tea for Calcutta finds its way *via* Gauhati and the river steamers. The traffic is from stations of the Assam-Bengal Railway on the length from Digaru to Kampur and Jamgin to Tinsukia. The rates from these stations to *via* Gauhati work out to about $\frac{1}{3}$ rd pie per maund per mile. For instance, the rates from Sibsagar and Titabar to *via* Gauhati are Re. 0-7-0 and Re. 0-6-0 per maund for 257 and 210 miles respectively. The through rates by the rail-route to Khidderpore Docks (Calcutta) *via* Gauhati and Amingaon are the same as those obtainable by the combined rail and river route (over the Assam-Bengal Railway and Indian General and River Steam Navigation Companies steamer despatch service) to Steamer Companies' tea transit sheds at Khidderpore *via* Gauhati and Sunderbunds.

According to the Assam-Bengal Railway, Goods Tariff (part II, issue No. 5), in force from 1st June 1916, the through rates compare as follows but the cargo service rates are lower :—

Rate per chest of 80 lbs.

From	To Calcutta (Khidderpore Docks) <i>via</i> Gauhati, Amin- gaon and Santahar over Assam- Bengal and Eastern Bengal Railways.	To Calcutta (Khidderpore River Steam Navigation Companies tea transit sheds) <i>via</i> Gauhati, and Sunderbunds by rail and despatch service.	To Calcutta <i>via</i> Assam- Bengal Railway and the cargo service <i>via</i> Gauhati.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Sibsagar Road	1 3 0	1 3 0	0 14 3
Latekajan Siding	1 2 0	1 2 0	0 13 2
Dufalt Siding	1 2 0	1 2 0	0 13 1

From the same tariff it is also observed that the above rates are lower than the rates obtainable *via* Chandpur as the following comparison will show :—

From	To Calcutta <i>via</i> Chandpur over the Assam-Bengal Railway and the Steamer Companies despatch service <i>via</i> Sunderbunds.	To Calcutta <i>via</i> Chandpur and Goalando over the combined rail and river route.	To Calcutta <i>via</i> Chandpur and cargo service.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Sibagar Road .	1 9 9	1 9 9	1 5 0
Latekajan Siding .	1 8 8	1 8 8	1 3 11
Dufalt Siding .	1 8 5	1 8 5	1 3 8

Since these rates of 1916 tariff there has been an increase by about 12½ per cent. in the rates by mutual consent between the Assam-Bengal Railway and the steamer companies.

The feature of the tea traffic of the Assam-Bengal Railway is that while they secure to the Chittagong port the tea from the gardens when such tea is intended for direct despatch to England or America, the tea intended for local consumption in India and for the Persian Gulf trade and Russia as well as tea that is sold after being blended in the Calcutta market comes to Calcutta.

Until such time as the managing agents of the tea gardens or other people start testing and blending tea at Chittagong and make it a market for sale there is little hope of Chittagong securing most of this business.

At present the Railway Company practically do all the business in connection with the clearing and forwarding from Chittagong on behalf of the tea gardens. In the past the sea freight to England has been the same from Chittagong as from Calcutta.

Jute, raw.

The jute traffic of the Assam-Bengal Railway may be divided under the following heads :—

- (1) Full pressed bales from Narainganj and Chandpur for overseas export.
- (2) Loose jute from Assam-Bengal Railway stations on the Chittagong and Badarpur districts for Chandpur and Akhaura for baling houses or ultimate despatch to Calcutta for mill consumption or for mixing and baling.

- (3) Jute from baling centres from this railway to *vid* Chandpur for Calcutta for mill consumption.
- (4) Loose jute and unpressed jute from stations in the Assam Valley to Chandpur and *vid*.

Before the jetties came into existence at Chittagong, the export traffic used to be carried by small sea going vessels (both sailing and steam). When the jetties came into existence the Assam-Bengal Railway, in order to encourage shipment *vid* the Chittagong port, quoted a rate of Re. 0-8-0 per bale in 1896 from Chandpur to Chittagong but without any effect. Four years later they made a further reduction in the way of rebates calculated on the following basis :—

Bales.	Maunds.	Rebate.
20,000	1,00,000 but under	30,000 bales 6 pies per bale.
30,000	1,50,000 "	40,000 " 1 anna " "
40,000	2,00,000 "	50,000 " 1½ " "
50,000	2,50,000 and upwards	2 annas.

These rates (*i.e.*, the total rates deducting the rebate) are more or less in force to-day, with this difference that the rate is Re. 0-9-0 per maund, but Re. 0-3-0 per maund rebate is granted for quantities of 1,00,000 and more despatched in a season so that the net rate is 6 annas.

The rates from Chandpur and Naraingunge are as follows :—

Jute in full pressed bales of 5 maunds each.

From	To	Per bales of 5 maunds.	REMARKS.
		Rs. A. P.	
Chandpur . . .	Chittagong, Chittagong Port or Strand Road.	0 9 0	In addition to this rate, an extra charge of Re. 0-1-3 per bale as jetty charge and Re. 0-4-0 per 5 maunds pucca bales as river due is levied and these charges are to be entered in invoices and receipts, except in the case of a few firms who have their Agents at Chittagong to pay the jetty charge and river dues.
Narainganj	Chittagong, Chittagong Port or Strand Road <i>vid</i> wagon ferry, at Ashuganj.	0 13 0	Ditto.

A rebate over the Assam-Bengal Railway on the following quantities of jute in full pressed bales of 5 maunds each is made at the end of the season from July to June inclusive :—

20,000 but under 30,000 bales	6 pies per bale
30,000 " " 40,000 "	1 anna per bale
40,000 " " 50,000 "	1 anna 6 pies per bale
50,000 " " 1,00,000 "	2 annas per bale
1,00,000 and upwards	3 annas per bale

This rebate is only given when jute in " Full pressed " bales is booked from a station on the Assam-Bengal Railway and from Narainganj *viâ* Chandpur or *viâ* wagon ferry to Chittagong port for direct export to countries out of India.

The rate from Chandpur to Chittagong, including the maximum rebate, comes to Re. 0-6-0 per bale of 5 maunds or 14 pies per maund or say 133 pie per maund per mile, which is indeed a very low rate for a commodity like jute, but it cannot be helped unless the ocean going steamer companies (Clan Line Steamers) agree to reduce their freight and thus enable the railway company to enhance their rate to the extent of the reduction made by the steamer company. While it is true that the railway company has helped the steamer companies to increase their business it is also to be admitted that but for the calling of the steamers at Chittagong the railway traffic could not have developed much, and it is doubtful whether the steamer companies will take such a step. Even if they take any action in this respect it may be in the direction of giving Chittagong a lower freight in order to counterbalance, to a certain extent, the effect of lower steamer freights from Calcutta, in order to attract more freight to Chittagong. But whether they will be so good as to let the railway swallow the reduction they make is doubtful for the steamer companies must know that for the development of traffic *viâ* the Chittagong port the railway company and the port are dependent on them. As for the railway enhancing its rates irrespective of any reduction made in the steamer freight it would perhaps not be wise for the railway to do so for there is the competition with the country crafts which can be renewed any moment and since the war has broken out more brigs have been built.

Rates for loose jute from Assam-Bengal Railway stations to Chandpur have been raised to the maximum permissible *plus* terminal.

The rates for baled jute from baling centres to Calcutta have been fixed on the basis of the maximum rates *plus* terminal for loose jute and the usual rebate in respect of baled jute only has been granted.

Rates for jute from the undermentioned stations in Upper Assam to *viâ* Chandpur are on the following basis :—

Kampur and Gauhati	13 pie per maund per mile.
Jamunamukh	13 " " "

The cultivation of jute in Assam valley is being extended and it would be to the interest of the Assam-Bengal Railway to encourage this traffic to Chandpur and Chittagong and low rates will not be against the interests of this railway until at least the cultivation is extensive.

The total weight of jute carried by the Assam-Bengal Railway during the year 1913-14 was 85,848 tons, which gave them an earning of Rs. 2,27,870 : a very large portion of this traffic is in jute baled from Chandpur and Narainganj to Chittagong and also in loose jute from places like Chaumuhani, Akhaura, Ashuganj to Chandpur and *via* Chandpur.

Coal.

Coal traffic of the Assam-Bengal Railway during 1913-14 amounted to 74,961 tons, with an earning of Rs. 1,92,073. Coal traffic is confined entirely to the requirements of the tea industry, jute presses, oil and saw mills. Coal is obtained either from the Assam Railways and Trading Companies mines at Ledo or from the Bengal coal fields, coal in the latter case being brought up by water to Chandpur and despatched onward by rail from there. In the case of coal coming up from the Bengal coal fields it is carried mainly during the slack season, special rates being quoted for the purpose of attracting this traffic to that season of the year. The following are the busy and the slack season rates from Chandpur (for Bengal coal) for all stations up to Badarpur on the north, Badarpur practically being the point, up to which Bengal coal goes. The places north thereof are supplied with coal from the north-east Assam.

Slack season rates.

(January to June each year.)

For distances up to 300 miles	•10 pie per maund per mile.
Plus for any distance in excess of 300 miles and up to 500 miles inclusive	•066 pie per maund per mile.
Plus for any distance in excess of 500 miles	•05 pie per maund per mile.

July to December each year.

For distances up to 400 miles.	0.15 pie	from Chandpur	to Shahatal to Badarpur including branches and Chittagong section,
Plus for any distance in excess of 400 miles.	0.10 „	from Chandpur	to stations beyond Badarpur in force throughout the year.

The collieries in North-East Assam occur in Ledo Valley. The Assam Railways and Trading Company first started operations at Makum in 1881. The average production of the Makum mines during 1910-15 was 292,934 tons a year, as compared with 279,833 tons

during the previous period. The coal has the reputation of being a good fuel, and forms an excellent coke. The collieries are connected by the metre gauge railway with Dibrugarh and Saikaghat (Sadya) on the Brahmaputra river. Up to the year 1907-08 in terms of an agreement between the Inland Steamer Companies and the Assam Railways and Trading Company, all coal was brought down to Sadya and then sent onwards by water by the Brahmaputra and up the Surma Valley distribution from various river ghats.

The following rates were quoted in 1907-08 and the traffic came to the railway :—

For distances up to 300 miles . . .	.11	pie	per	maund	per	mile.
Plus for any distance in excess of 300 miles and up to 500 miles inclusive . . .	.066	”	”	”	”	”
Plus for any distance in excess of 500 miles . . .	.05	”	”	”	”	”

In 1911 the rates were altered to the extent of quoting alternative busy and slack season rates, the former being 25 per cent. higher than the rates quoted for the slack season, which remained at the rates in force in 1907-08. Finally in 1914 the slack season rates were revised to the following extent :—

For distances up to 300 miles . . .	.10	pie	per	maund	per	mile.
Plus for any distance in excess of 300 miles and up to 500 miles . . .	.066	”	”	”	”	”
Plus for any distance in excess of 500 miles . . .	.05	”	”	”	”	”

Salt.

The salt traffic of the Assam-Bengal Railway is especially from the Chittagong port.

The total weight of salt traffic carried by this railway was 41,920 tons on which the earning of the railway was Rs. 1,50,316.

For years the salt trade of stations on the Assam-Bengal Railway was in the hands of the Calcutta merchants till the Hansa Line of steamers started bringing in Hamburg salt to Chittagong port. The trade is now almost entirely from Chittagong and the salt is all foreign salt, *i.e.*, neither Bombay salt nor Ganjam salt. In the beginning in order to attract this traffic to Chittagong port in competition with Calcutta, a rate of $\frac{1}{4}$ th pie per maund per mile was in force from 1903 to 1915, from Chittagong for all distances, but with effect from 1st January 1916 the following scale of rates for salt has been introduced :—

Distance up to 250 miles $\frac{1}{4}$ th pie per maund per mile.
For additional distances $\frac{1}{4}$ th pie per maund per mile.

With the connections that have been formed by railways, from Bhaïrabazar to Tangi and Mymensingh, between Chittagong and the districts of Mymensingh and Dacca it is possible for the Chittagong port and the Assam-Bengal Railway to develop salt traffic to the area lying east of the Brahmaputra, but this may not perhaps be to the interests of the Eastern Bengal State Railway if they carry salt from Calcutta to this area. It is however ascertained that salt from Calcutta goes to Narainganj by steamers and has always done so.

Kerosine oil.

Kerosine oil is the next item of importance to the Assam-Bengal Railway. The quantity of this oil carried over the Assam-Bengal Railway during 1913-14 was 40,083 tons and the earnings therefrom were Rs. 1,49,604.

There are two sources of supply in the area served by Assam-Bengal Railway, *viz.*, the Burmah oil fields *via* Chittagong and the Assam oil fields at Digboi. The Burmah Oil Company started operations in Chittagong in 1898 and the following rate was quoted in order to develop this traffic :—

$\frac{1}{4}$ th pie per maund per mile.

This rate continued in force until 1909 when it was revised on the follownig basis :—

$\frac{1}{4}$ th pie per maund per mile.

A few alterations were made at the commencement of this year, but otherwise the rate remained at the figure quoted in 1909. The position with regard to this traffic is that it is a matter of indifference to the Burmah oil companies whether they make their supplies to these districts from Chittagong or Calcutta, but lately Indo-Burmah Petroleum Company has started depôts at Chittagong.

There are then the oil rates from the Assam oil fields. These are on a similar basis to the Chittagong rate and are rendered necessary by the fact that the Assam oil company have an alternative route by the Dibru-Sadiya Railway to Dibrugarh and thence onward by the Inland Steamer Companies.

Further, as in the case of salt, kerosine oil for stations on the Narainganj-Dacca-Mymensingh line of the Eastern Bengal State Railway, is brought by the Steamer Companies from Calcutta to Narainganj.

Cotton.

Cotton is at present not an important item of traffic to the Assam-Bengal railway. The total weight carried in 1913-14 did not amount to more than 2,397 tons and the earnings therefrom were but Rs. 17,800, but looking at the development that is taking place in Assam cotton

it may be possible that cotton will be an important item of traffic some day. Cotton is being cultivated in almost every district in Assam. The total area under cotton cultivation in Assam was but 7,191 acres in 1906-07, but in 1910-11 the area had increased to 42,210 acres, but there has been check since 1912-13, the area recorded during 1913-14 and 1914-15 being 35,179 and 32,818 acres only. The rate charged is $\frac{1}{4}$ th pie per maund per mile, which is low enough. It has been slightly enhanced by the imposition of a terminal, but the cotton is not a long stapled cotton and hitherto it did not fetch a good price. There are ginning factories at Chittagong and one was started at Chandpur by a joint stock company called the Tripura Company some years ago, but it did not do much business for it did not get sufficient cotton to gin.

Oil seeds.

Rape, mustard and tilseed are grown in districts served by the Assam-Bengal Railway. The total traffic in seeds and in oil was as follows in 1913-14 :—

	Tons.	Rs.
Rape and mustard	6,534	29,755
Tilseed	1,117	4,224
Rape and mustard oil	2,631	10,424

Oil mills have been started at Chandpur, Ashuganj, Karimganj, Gauhati, Chaparmukh, Tinsukia and Bharya.

Whereas the oilseeds get the advantage of low grain rates oil is charged at class rates.

Timber.

The extensive forest tracts in Assam ought to give the railway a large traffic in timber, but the figures are not very encouraging. The total weight of timber traffic in 1913-14 was 11,165 tons and the earnings therefrom were Rs. 43,837. The rate charged is as follows :—

Timber unwrought logs only, per 4 wheeled wagon	0-2-0	per mile.
Timber unwrought logs only, per bogie wagon	0-4-6	„ „
Timber (inwrought) except logs not planed or chiselled including sleepers, beams, scantlings, rafters, doors, chowkats and planks per 4 wheeled wagon	0-3-0	„ „
Do. do. per bogie wagon	0-6-0	„ „

The rates are low enough, 0-2-6 per wagon per mile on 10 ton load would give a rate of 11 pie per maund per mile, which is lower than the low rates charged by the Bengal Nagpur Railway on timber, but the development of this traffic is, it is feared, retarded owing to the Forest Department, for reasons not clear, not being able to push the trade. The present traffic is principally from the Nambor forests.

General remarks.

The Assam-Bengal Railway have at present no traffic agreements either with the Steamer Companies or with any railway in connection with the rating, routing and division of traffic, although the rates between Chittagong and Calcutta are fixed in terms of an agreement came to years ago. This agreement and the rates need not be dealt with here as they have been referred to in Chapter II. A rate of 6 annas per maund for the cheap commodities and of 11 annas per maund for the higher class articles are in force between Calcutta and Chittagong *via* Chandpur and Goalando combined service and *via* Chandpur and the river service *via* Sunderbands; the Assam-Bengal Railway proportion being Re. 0-1-10 per maund for the 6 anna rate and Re. 0-3-5 per maund in the case of the Re. 0-11-0 rate, which on a distance of 112 miles from Chittagong to Chandpur work out respectively to .107 and .41 per maund per mile.

Then there is the question of the traffic to and from Mymensingh and stations on the Mymensingh-Bhairab Bazar branch to Calcutta and Chittagong.

The rates from stations on this railway to the ports of Chittagong and Calcutta have been ordered by the Railway Board to be fixed on the following principle :—

(a) Traffic to and from Mymensingh.

The through rates quoted between Mymensingh and Chittagong *via* the Mymensingh-Bhairab Bazar line shall in no case be lower than those *via* Tangi, subject however to the proviso that the maxima are not infringed, and

(b) Traffic to and from other stations.

The rate per mile and terminals quoted for traffic between any stations on the Mymensingh-Bhairab Bazar line including Branches) and Chittagong shall apply, so far as the Branch line is concerned, to traffic between such stations and Calcutta or Narainganj, which may be booked *via* Mymensingh.

The Assam-Bengal Railway are not satisfied with this decision, who have represented to the Railway Board as follows through their Agent in India :—

“The distance from Calcutta and Chittagong to Mymensingh are as follows :—

	Miles.
Calcutta to Mymensingh <i>via</i> Fulchhari	323
Chittagong to Mymensingh <i>via</i> Bhairab and the Mymensingh-Bhairab Bazar Railway	239

It is thus seen that there is a mileage of 84 miles in favour of Chittagong. The Railway Board have, however, laid down that the rates

between Mymensingh and Chittagong *viâ* Bhairab are not to be lower than the rate *viâ* Tangi *except* in the case of maximum class rates. This leaves it open to the Eastern Bengal Railway to quote a low special rate between Calcutta and Mymensingh and at the same time place Chittagong quite out of competition by charging a blocking class rate or a high special rate between Mymensingh and Tangi.

The Railway Board have thought fit to put on the restriction in rates *viâ* Tangi in order to safeguard the interests of the Eastern Bengal railway, who owned a portion of the alternative route *viâ* Tangi for some time before the opening of the through direct route to Chittagong *viâ* Bhairab; but the distance from Mymensingh to Calcutta is 61 miles longer than to Chittagong even *viâ* Tangi. The maximum class rates between Chittagong and Mymensingh give the advantage to the direct Mymensingh-Bhairab Bazar route by reason of its 23 miles shorter length, this the Railway Board cannot prevent the Mymensingh-Bhairab Bazar Railway route from taking advantage of. It is hardly equity therefore to penalise traffic carried at special rates by ordering that the longer Tangi route will fix such rates. If the Railway Board accept the principle that a lower rate can be quoted by the direct route so long as it is a *class* rate, it is not understood why the principle is reversed because the rate may be a *special* one. It may be protecting existing railway interests it is true, but it is not logical and is at the expense of the public who are thus made to pay higher than on the mileage they can justly expect to be made to pay.

I should like it to be understood that I am not referring to the jute traffic to Calcutta which comprises the great bulk of the traffic from Mymensingh; this *must* go to Calcutta over the Eastern Bengal railway or by steamer from Jagannathganj and which the Mymensingh-Bhairab Bazar Railway and the Assam-Bengal Railway cannot compete for but to general traffic such as salt and kerosine oil and import goods. The Eastern Bengal Railway at present I believe carry a negligible quantity of salt and kerosine oil to Mymensingh direct *viâ* Fulchhari, because these commodities are carried by river to Narainganj, whence *ex* godown they are booked by rail to Mymensingh. From Chittagong however these commodities can be carried in wagon loads *without transshipment* and it is hoped by the Chittagong traders that they will capture the bulk of the Calcutta trade. The competition *from* Calcutta will be with the river steamers rather than with the Eastern Bengal Railway and the Chittagong direct route to Mymensingh should be given a free hand.

I therefore request that conditions may be laid down by the Railway Board to prevent the Eastern Bengal Railway imposing a block rate between Tangi and Mymensingh, and I do not see how this can altogether be avoided without cancelling condition (a) of the Railway Board's letter of the 23rd March. I have not overlooked that the Railway Board in their No. 2146-3953 of the 25th November 1915 in paragraph

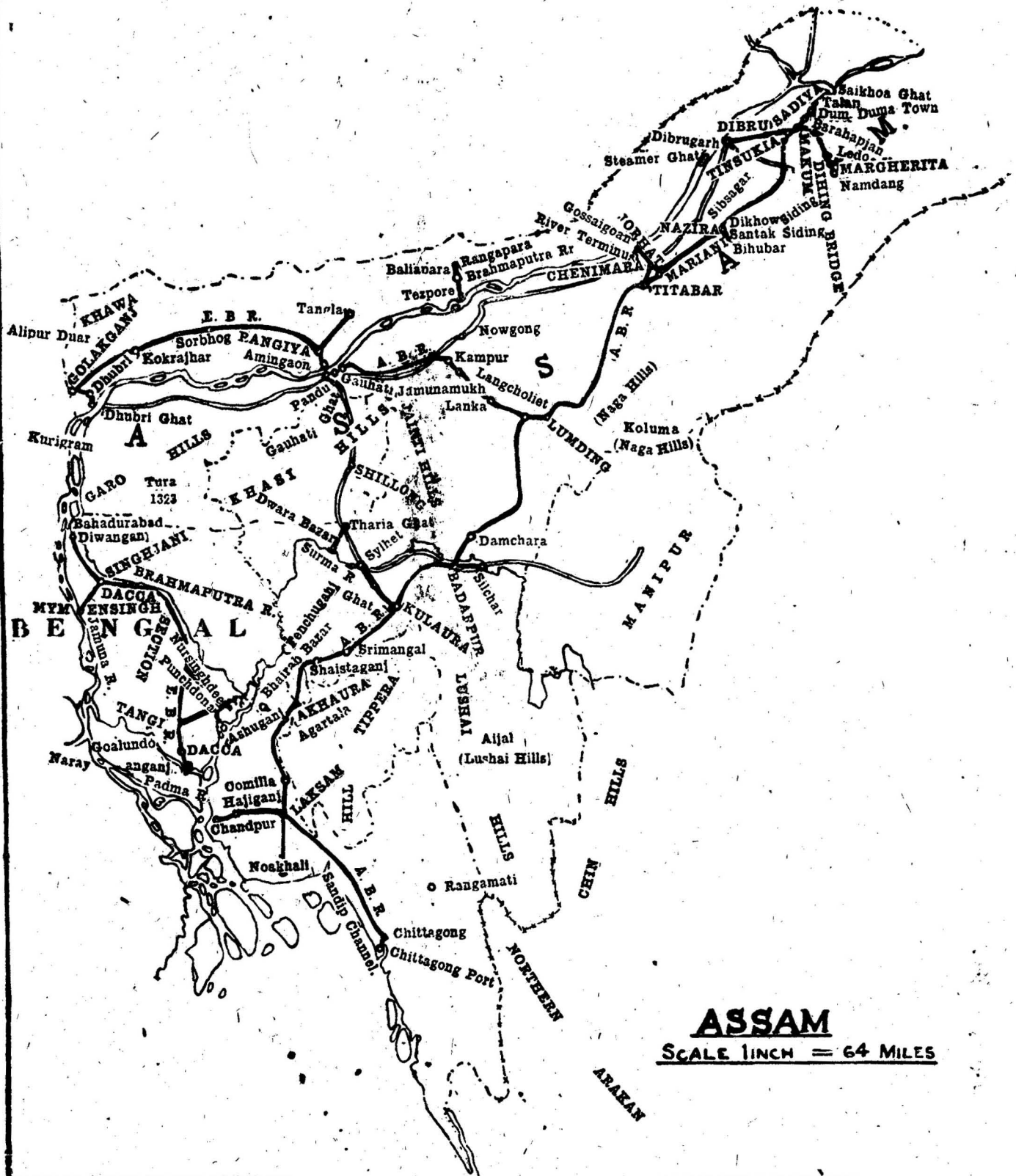
2(1) stated the intention was to maintain as far as possible the *status quo nunc* as between Calcutta and Narainganj and Chittagong, but even so the shorter distance by 84 miles which Mymensingh is from Chittagong compared with Calcutta entitles the new route to a fair consideration. In condition (b) of their letter of the 23rd March the Railway Board laid down that the rate per mile between stations on the Mymensingh-Bhairab Bazar Railway in the Chittagong direction shall also apply in the Calcutta direction when booked *viâ* Mymensingh, and I, therefore, wish to enquire why this principle should not apply in the case of rates between Mymensingh and Calcutta and Chittagong, that is to say it should be laid down (i) that the Eastern Bengal Railway should not charge a higher mileage rate between Tangi and Mymensingh than they charge between Calcutta and Mymensingh and (ii) it will be reasonable to remove restrictions altogether in reference to commodities in which the Steamer Companies can be shown to control the rates, and the statistics of which show they also carry the larger share of the traffic."

It is not quite unprecedented to impose the condition that the railway rate to Chittagong should be based on the longer distance *viâ* the Tangi route in order to protect the interests of the Eastern Bengal State Railway, for the case of rates between Sitapur and Bareilly has been treated similarly. In this case the new route of the Oudh and Rohilkhand Railway, a state worked state line, offers the shorter distance whereas the old route of the Rohilkund and Kumaon Railway (a company worked state line) has the longer distance. The Oudh and Rohilkhand Railway have been told not to base their rates on a lower basis than obtainable on the longer distance *viâ* the Rohilkund and Kumaon Railway even if in doing so the maximum is infringed, although the legality of such a decision is very doubtful; the Chittagong-Mymensingh rate, which has been ordered to be fixed on the distance by the longer route is, however, subject to the proviso that the maximum by the shorter route is not to be infringed. However as to the basis of rates to Narainganj, Chittagong and Calcutta from Mymensingh and stations on the Mymensingh-Bhairab Bazar Railway the fairest settlement would be somewhat on the lines on which rates to Bombay, Murmagao and Madras have been fixed.

These rates are fixed on the following basis :—

1. The shortest route either to Bombay, Madras or Murmagao to fix the rate between the forwarding stations and the port.
2. The railway or railways owning the longer distance to their port or ports shall be at liberty to quote a mileage rate equal to the mileage rate fixed by the shorter route.
3. The division of such through rates to be a matter of settlement between railways.

SKETCH N^o E.



ASSAM
 SCALE 1 INCH = 64 MILES

On the above basis the rates to Calcutta, Narainganj and Chittagong may be fixed on the following basis :--

1. The shorter distance to either Calcutta, Chittagong or Narainganj to fix the rate.
2. The railway or railways owning the longer distance to the other two places to quote same mileage rates subject to the proviso that in calculating the rate to Chittagong the distance *via* Tangi to be taken into account and the rate thus arrived at to be applied to Chittagong except that when it infringes the maximum on the distance *via* Bhaibrab Bazar the maximum on the shorter distance to be charged, it being optional for the Eastern Bengal State Railway to make pro-rata reduction in such exceptional cases to Calcutta or to Narainganj.

APPENDIX II.

RATES OF THE BURMAH RAILWAYS.

The province of Burmah not being connected with India by railway communication has no through booking with Indian Railways, and the rates of that line are, therefore, more or less local.

In his report on Rise of Prices in India Mr. K. L. Dutt has described "Burmah as a separate country," where, he says, "the economic conditions prevailing are essentially different from those of India proper."

The Burmah Railways comprise a mileage of 1,341 miles and the extensions of nearly 300 miles have been made known as Burmah Railways extensions and Southern Shan State Railway.

The Burmah Railway runs from North to South without any railway connections with the eastern and western districts and there being practically no roads the development of traffic is more or less confined to a permanent belt of country. Then again the population has been since olden days close to the rivers Irrawaddy and Sittang. The country is also sparsely populated. The population living within the area affected by the Railway is under 5½ millions. The need for branch lines in Burmah is strongly felt, and had it not been for the War perhaps good progress might have been made in this direction.

The water competition is strong. The Southern part of Lower Burmah is composed of the Irrawaddy Delta, which is intersected by streams and creeks—almost all tidal—and launches and country boats abound here in large numbers, and they are in competition with about 40 miles of the main line from Rangoon northwards, but affect the Bassein-Henzada-Kyangin branch line almost throughout its length.

Rangoon-Moulmein traffic was actively competed for by the British India Steam Navigation Company, but since the War the competition has practically ceased, with the result that the traffic has been secured to the railway.

On the other hand, where there is road, for instance in the Southern Shan States, the Railway is faced with road competition, although traffic has, for the greater part, been gradually secured to the Railway.

The question of building feeder roads, besides branch lines is also receiving the consideration of the local authorities of the Province.

The most formidable competitor is the Irrawaddy Flotilla Company:—The Railway runs parallel to the river Irrawaddy, which flows, west of the line, from north to south from Mandalay to the southern-most point of Lower Burmah. The section north of Mandalay is closer to the river than the section south thereof.

The Irrawaddy Flotilla Company have a very large fleet of steamers, and the railway comes in direct competition with the flotilla company at

Bassein,	|	Myingyan,
Henzada,	|	Mandalay,
Prome,	|	Sagaing, and
Katha.		

A glance at the sketch map of Burmah Railways, which is enclosed to this appendix, will show that the river touches these stations, which means that each such station becomes a river port, and river transportation being cheap not only the traffic between such stations is affected, but the river becomes the method of distribution of traffic between Burmah Railway stations near these river side places, thus giving the railway short leads only.

The competition with river transportation became very acute in 1910-11 owing to another Steamer Company (which, however, is no longer in existence) having come into the field. The war of rates between the two Steamer Companies naturally affected the railway rates but the position did not continue for any great length of time.

The relations between the Irrawaddy Flotilla Company and the Railway have not been unfriendly, and, in 1907, an arrangement was come to between the Flotilla Company and the Railway Company under which the railway rates are higher than the steamer freights by 4 to 8 annas per 100 viss (or 11 pies to 1 anna and 10 pies per maund). This is the general basis of rates by the railway and the steamers when the two are in competition with one another, and this has gained the object which is to divide the traffic between the Railway and the Flotilla Company equally and yearly statements of traffic are exchanged to ascertain if any route has carried more than half share.

The Railway Company have another agreement with the Irrawaddy Flotilla Company regarding through booking of traffic between Katha and Bhamo. The terms of the agreement, relating to rates, are as follows :—

“ Each party shall have as its share of the through charge the local fares and rates to and from Katha. The fares and rates shall not be enhanced by either party without the consent of the other. The Company further undertake that the fares and rates by their steamers from Rangoon, Prome, Mandalay or Sagaing to Bhamo or intermediate stations and *vice versa* shall not be less than the combined railway and steamer charges for similar traffic under this agreement.

“ Coaching and goods traffic shall be booked through *via* Katha, from any station on the Railway to Bhamo or any intermediate station and *vice versa*, and the through ticket or receipt issued in either case shall entitle the holder to equal facilities in regard to the carriage of himself or his goods over both systems as are given in the case of

passengers and goods booked locally over the same portions of the two systems.

“The company agree that in all cases and under all circumstances no preference of any kind shall be given to consignments not booked *viâ* the Railway at Katha, nor to consignors or consignees thereof over consignments so booked.”

The main line of the Burmah runs nearly north due south, *viz.*, from Rangoon to Myitkyina, 724 miles nearly, crossing the Irrawaddy Sagaing by ferry.

Mandalay, the Chief town of Upper Burma, is situated at the end of a short branch of 3 miles from Myohaung, 386 miles from Rangoon.

In Lower Burmah there are branches from Rangoon to Promé (161 miles), from Letpadan to Henzada, Bassein and Kyangin (174½ miles), and from Pegu to Martaban, which is opposite Moulmein (121 miles). In Upper Burmah there are branches from Thazi to Myingyan (70 miles), from Ywataung to Alon (70 miles), from Naba to Katha (15 miles), from Myohaung to Lashio in the Northern Shan States (178 miles) and from Thazi to Aungban in the Southern Shan States (70 miles).

The area under cultivation of different important crops in Upper and Lower Burmah were as follows :—

	Upper Burmah.	Lower Burmah.
<i>Rice.</i>		
1910-11	2,145,429	7,875,128
1911-12	1,957,713	7,936,548
1912-13	2,095,713	8,196,042
<i>Millet (Jowar).</i>		
1908-09	1,134,558	
1910-11	433,741	
1911-12	4,484,905	
1912-13	516,023	
<i>Oilseeds (sesamum, til or jinjili).</i>		
1909-10	1,207,566	
1910-11	991,967	
1911-12	1,150,373	
1912-13	1,336,335	

The Upper Burmah also grows some wheat, bajra (millet) gram, maize, groundnuts and tobacco, but the acreage is small, whereas these crops in Lower Burmah are of still lesser importance having regard to the area under cultivation of each crop.

The principal items of traffic on the Burmah Railways were as follows in 1913-14 :—

		Tons.	
Rice	{	Unhusked (Paddy)	940,222
		Husked (Rice)	218,273
		TOTAL	1,158,495
Timber			198,928
Mineral substances (mainly stones)			331,369
Fruits and vegetables			60,396
Metals (Iron articles chiefly)			52,192
Sugar (refined and unrefined)			42,616
Provisions			55,761
Grain and Pulse			38,413
Salt			29,746
Kerosine oil			25,062
Gunnies.			20,332
Oil-seeds			19,379
Coal (for public)			13,473
Cotton, raw			11,978
Piece goods, yarn, and twist			17,273
Fodder (Oil-cake, bran, hay)			38,921

The "grand total" of the weight of merchandise traffic carried over the Burmah Railways was 2,387,708 tons of which "rice and paddy" contributed 1,158,495 tons or 48 per cent.

Burmah Railways carry paddy in bulk as well as in bags and the rates for paddy (rice in the husk) are cheaper than those for rice (unhusked).

The paddy rates are as follows :—(The rates are quoted per 100 viss, which equal 4 maunds 15 seers, and have been converted into maund rates for the convenience of comparison with the rates of Indian Railways.)

Rates for paddy in bags in full wagon loads :—

	Pie per md. per mile.
For the 1st 125 miles . . . . .	.333
For extra distance 125 miles to 350 miles . . . . .	.073
For extra distances above 350 miles . . . . .	.055

The rates for paddy in bulk (loose) are also the same as those for paddy carried in bags with this difference that in the case of loose paddy the terminal is levied at the rate of 2½ annas per 100 viss (4 mds. 15 seers)

for distances up to 75 miles, whereas in the case of paddy in bags the terminal is $1\frac{1}{2}$ annas (i.e., half). Therefore, for short distances the rates over Burmah Railways including terminals, are rather high, but for distances over 125 miles the rates are decidedly low.

There are of course special rates for paddy for instance from Zibuygon to Rangoon, 96 miles, which works out to .214 pie per maund per mile. This is a much lower rate than the scale rate for this distance. There are several such rates which are rendered necessary by river competition.

The rates for "rice" are higher than those for "paddy"; the rice rates, for traffic in full wagon loads, are as shown below:—

	Pie per md. per mile.
For the first 125 miles . . . . .	.333
For extra distances 126 miles to 350 miles . . . . .	.166
For extra distances above 350 miles . . . . .	.066

The rice rates apply to all grain and pulses and common seeds, except that "Tilseed" is carried at the rates for paddy.

Timber rates are low, and are on a sliding scale basis, as contrast to the scale rates for rice, which are on a telescopic basis.

For distances up to 600 miles the timber rates graduate between .205 and .102 pie per maund per mile, whereas pine, Letpan and Shawbyn timber, in small pieces, when carried in wagon loads, to Mandalay or Rangoon are charged for all distances (whether long or short) at 3 pies per ton mile or .11 pie per maund per mile. The timber rates are therefore low.

Similarly, the "stone rates" are also very cheap. For distances under 50 miles the rate is .11 pie per maund per mile and .102 pie per maund per mile for all distances beyond 50 miles. They are decidedly cheaper than on Indian Railways.


Sugar, salt, kerosine oil are all charged at class rates except where there is competition by the river or road.

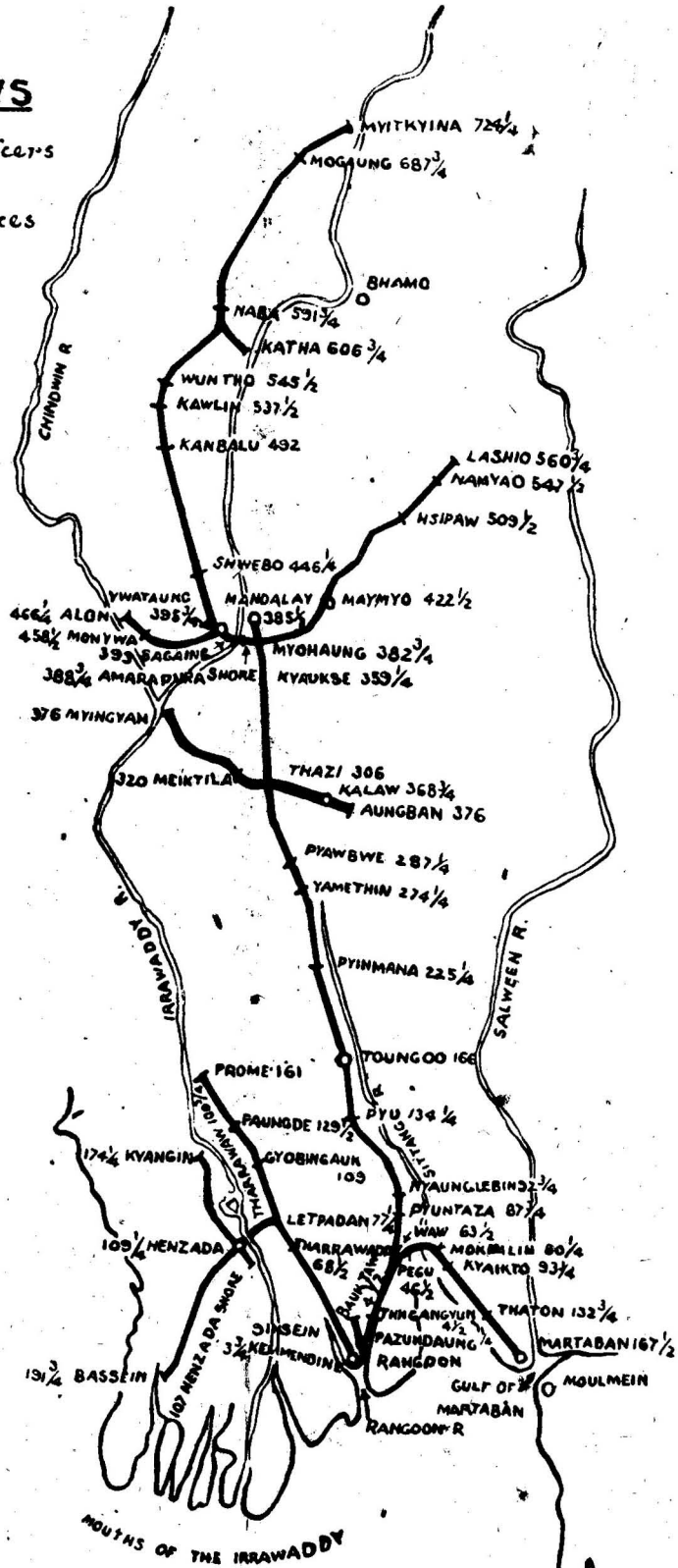
Sugar and salt are both imported items of traffic, whereas kerosine oil is produced in Burmah but the railway carries a small amount of the oil from the oil fields to Rangoon to the refineries.

Until 1907, the means used for transporting kerosine oil from the fields to the refineries in Rangoon consisted of river "flats" towed by the Irrawaddy Flotilla Company steamers. In 1908, the Burmah Oil Company finished the laying of a pipe line between the important Yenangyaung field and Rangoon, a distance of 275 miles. The diameter of the pipe is said to be 10 inches and the number of pump stations are two. As Yenangyat is connected with Singu and Singu with Yenangyaung the Burmah Oil Company have, therefore, a pipe connection between all their producing centres and their refinery at Rangoon.

SKETCH No H.

BURMA RAILWAYS

1. Headquarters of Traffic Officers denoted thus 
2. Mileages shown are distances from Rangoon



APPENDIX III.

A NOTE ON SIMPLIFICATION OF THE GOODS TARIFFS.

The work of simplifying the Goods Tariffs of Indian railways was commenced in 1905 when a Special Committee known as the "Tariff Simplification Committee" was appointed by the Indian Railway Conference Association to go fully into the matter. The work was delayed from various causes but in 1909 this Committee put forward a general classification which, after receiving the approval of the Conference and the Railway Board was introduced with effect from 1st July 1910. Subsequently, however, in December of the same year the Railway Board revised their original sanction and in paragraph 11 of the revised letter, the following orders were laid down in regard to the maxima and minima proposed for different classes of goods:—

"With regard to the maximum and minimum rates that may be charged to the public for each class under the new classification, the Railway Board are unable to accept the maxima and minima proposed for each class by the Indian Railway Conference Association, as to do so would be in many cases to raise the maximum rate that could be charged to a higher level than has been fixed in the past. It was never the intention of the Railway Board that uniformity of classification should be accompanied by a general rise in the maximum rates which railways are permitted to charge.

In these circumstances the question of what maximum and minimum rates should be fixed for each of the classes under the new classification must remain in abeyance until a satisfactory method can be devised for quoting a maximum and minimum rate for each class, which would not necessarily have the effect of making the maximum rate which might be charged higher than what was permissible under the old classification.

In the meantime, the maximum and minimum rates that may be charged by any railway for any commodity under the new classification must not exceed the maximum and minimum that was authorised for that railway for such commodity prior to the introduction of the new classification and subject to the conditions then in force."

These orders, which were issued as the result of agitation on the part of the public against the increase in the classification, nullified to a great extent the work of the Committee, inasmuch as the large

number of exceptions to the general classification which it would have been necessary for each railway to notify, in order to comply with the third clause of the paragraph quoted, would have had the effect of making the classification more complex than ever. It may be remarked here that neither the trade nor the public were consulted when, in some cases, the classification was increased. Such a thing would not be possible in Great Britain. A special meeting of the Association was therefore held to consider the position and a deputation therefrom which waited on the Railway Board was informed by the President of the Railway Board that the orders issued could not be modified and that it would be necessary to append the following note to the Schedule of Maximum and Minimum class rates proposed :—

“ The maximum rate, which may be charged for any commodity under the above schedule of maximum and minimum rates for goods traffic now sanctioned, must not exceed the maximum rate permissible under the classification in force for such commodity on the 30th June 1910 on Railway.”

It was therefore decided to revise the general classification already issued in order that the number of exceptions involved by the Railway Board's order might be kept to as low a figure as possible. With this end in view, the classification was re-examined by the Committee and on their recommendation a reduction was made in the class of over 325 commodities. The revised classification received the sanction of the Railway Board in their letter No. 1260 R.T. of the 28th August 1911, and was brought into force from the 1st September following, each railway issuing exception lists, where necessary, to comply with the Railway Board's orders that the classification on any railway should not exceed that in force on the 30th June 1910. Continuous efforts were made to secure greater simplification and up to May 1915 the class of a further 268 commodities had been reduced. Even then uniformity of classification had only been secured in respect of some 55 per cent. of the commodities included in the General Classification and it was felt that if real simplification was ever to be obtained some modification of the Railway Board's orders quoted in paragraph 2 above was necessary.

The matter was discussed by the Conference Association and as a result statistics of commodities in which the traffic was unimportant were got out and an application was made to the Railway Board for permission to enhance the classification of these items on those railways which were obliged to quote a higher classification than that of the General Classification of Goods. At the request of the Railway Board the Chambers of Commerce were consulted.

As a result of this reference it became possible to remove about 600 items from railways' exception lists and since then a large number of other items have been removed as being unnecessary owing to traffic

therein being negligible or in some cases non-existent. Uniformity has now been secured in respect of over 70 per cent. of the commodities in the General Classification of Goods and of the balance, in the case of 7 per cent., only one railway quotes an exception.

Concurrently with the simplification of the classification a uniform code of rules for the acceptance, carriage and delivery of goods was drawn up and accepted by all railways. These include the following rule :—

Rule 4. Any of the conditions relating to the following in force on the forwarding railway will apply in through booking to the station of destination.

(a) Minimum weight. The following minimum weights only will be used in through booking between railways :—

Maunds.	Maunds.	Maunds.
54	160	300
81	200	400
100	270	450

(b) Packing, pressing and measurement conditions.

(c) Prepayment of freight or otherwise.

(d) Loading and unloading by sender and consignee or railway except crange charges.

(e) Bulky goods.

Clause (a) which limits the number of different minimum weights which can be used in through booking to 9, is of particular importance as prior to the introduction of this rule in 1913 there were in force on railways a very large number of different minimum weights. One railway alone had no fewer than 70 different minima for different commodities and another had as many as 7 minima weights for one commodity. A standard form of Goods Tariff has also been approved and has been adopted by railways. This will ensure that the same chapter in whatever railways tariffs, will always deal with the same subject and will greatly facilitate reference. The forms of junction rate lists have also been standardized. These are no longer printed by the Conference as the arrangement was found to be both inconvenient and uneconomical but the standard form approved is being retained.

The attention of the Goods Classification Committee is now being directed towards a reduction in the number of schedules in force and the assimilation of weight conditions where one railway quotes a wagon rate and another a maund rate for the same commodity or where different minimum weight conditions are attached to the carriage of one commodity.

APPENDIX (IV) TO CHAPTER VIII

ON "ECONOMICS OF TRANSPORTATION."

In Chapter VIII, to which this is an appendix, attention has been drawn to the fact that the run per wagon per day has a great deal to do with the earning capacity of a railway, but it is essential to further demonstrate that when the wagon capacity is wasted the work done per wagon per day at once diminishes to the detriment of the interests of a railway in many ways.

A larger number of wagons than is actually necessary to move the traffic economically not only increases the capital cost but the working expenses as well, as the interest on increased capital, not actually needed, the depreciation on wagons, the cost of handling and hauling more wagons all add to the working expenses.

During 10 years preceding the War there were large additions to rolling stock on Indian Railways in response to the demands continually made by the public for increased facilities of transport to enable the railways to carry the increasing traffic.

But whether the improvement in transport facilities demanded by the public required such large sums to be spent on increased rolling stock is doubtful; and it cannot be said that the Government of India did not realise this for in their Administration report on Railways for 1907 they distinctly pointed out that "before more wagons could be placed on the railways further expenditure on facilities were indispensable." The results, however, show that wagons were placed on railways before proper facilities to move them quickly were provided for.

For purposes of this discussion we may confine ourselves to the results of goods traffic working on the broad gauge sections of the following railways :—

- Bengal Nagpur Railway,
- Bombay, Baroda and Central India Railway,
- Eastern Bengal State Railway,
- East Indian Railway,
- Great Indian Peninsula Railway,
- Madras and Southern Mahratta Railway,
- North Western Railway,
- Oudh and Rohilkhand Railway.

During 9 years 1905 to 1914-15 the total value of rolling stock on the above lines increased to the extent of 39½ crores of rupees, as detailed in the following table :—

	1905.	1914-15.	Excess.
	Grand total value of rolling stock.	Grand total value of rolling stock.	
	Rs.	Rs.	Rs.
Bengal Nagpur Railway	4,23,52,000	9,15,81,000	4,92,29,000
Bombay, Baroda and Central India Railway.	2,38,19,000	5,36,58,000	2,98,39,000
Eastern Bengal State Railway	1,83,15,000	4,10,91,000	2,27,76,000
East Indian Railway	11,92,40,000	20,48,37,000	8,55,97,000
Great Indian Peninsula Railway	6,56,63,000	12,89,31,000	6,32,68,000
Madras and Southern Mahratta Railway.	2,75,75,000	3,18,28,000	42,53,000
North Western Railway	7,34,02,000	19,01,45,000	11,67,43,000
Oudh and Rohilkhand Railway	2,32,69,000	4,51,59,000	2,18,90,000
TOTAL			39,35,95,000

A very large portion of this expenditure was for goods rolling stock, and it will be noticed from the foregoing table that the expenditure on the North Western Railway was the highest.

The increase of traffic on the North Western Railway in merchandise was as follows from 1907 to 1914-15 :—

	Tons.
1907	5,241,859
1911	5,587,700
1914-15	5,930,712

The figures of 1911 show an increase of 6·6 per cent over those of 1907, while the traffic in 1914-15 was greater than that of 1907 by 13 per cent.

Now let us see what was the increase in the number of wagons :—

	Number of wagons in use on the North Western Railway.
In 1907	13,906
„ 1911	20,965
„ 1914-15	26,764

(It has already been shown in Chapter VIII that with the increase in the number of wagons the number of high capacity wagons also increased.)

Compared with 1907, the increase in the number of wagons in 1914-15 on the North Western Railway was 92 per cent. while the rise in the weight of traffic was but 13 per cent. ; a very extraordinary disproportion between the figures of increase of traffic and those of increase in rolling stock.

Even taking the ton miles, *i.e.*, number of tons of goods carried one mile, it is observed that the ton miles in 1914-15 were greater than those of 1907 by such an insignificant figure as 79 per cent. (not even $\frac{1}{8}$ per cent.)

The enormous increase in the number of wagons on the North Western Railway resulted in very largely diminishing the work done by wagon per day, *vide* figures below :—

	Number of miles run per wagon per day on the North Western Railway.
	Miles.
In 1907	53
„ 1911	41
„ 1914-15	29

The mileage run by a wagon in 1914-15 was less than that of 1907 by 45 per cent—a very large decrease. Even taking 1911 the decrease was 22 per cent. in comparison with 1907.

The cost of operation also went up on the North Western Railway, as the following figures of cost of haulage (including interest on capital spent on open lines at 5 per cent. per annum) will show :—

	Pies per ton mile.
In 1907 { 1st half year	4-28
{ 2nd half year	3-93
„ 1914-15 { 1st half year	4-73
{ 2nd half year	5-32

The reason for taking the interest on capital spent on open line is to show the effect of the money spent on wagons, which was included in the capital cost.

It is true that as the North Western Railway deals very largely in wheat traffic, which has all to be carried in in three or four months, it is not in the same position as the coal carrying lines, where traffic is better distributed throughout the year but the fact remains that the increase in traffic was only 13 per cent., to carry which 92 per cent. wagon capacity was increased. The point is whether most of the money spent on wagons could not have been utilised in improvement of facilities for movement of trains and wagons and for improvement of terminal facilities.

A statement is annexed to this appendix showing for the year 1907, 1911 and 1914-15 the following statistics :—

- (a) Gross receipts from goods traffic,
- (b) Goods train miles run,
- (c) Ton miles (*i.e.*, tons of goods carried one mile),
- (d) Average number of tons in a train (goods),
- (e) Average number of vehicles in a goods train,
- (f) Average goods receipts per goods vehicle, per mile.
- (g) Average goods receipts per train mile,
- (h) Average sum received for carrying one ton one mile.
- (i) Total number of goods vehicles and number of miles run per wagon per day,
- (j) Average cost of hauling one ton one mile,
- (k) Average cost of hauling one ton one mile, including interest on capital at 5 per cent. per annum,
- (l) Total weight of merchandise in tons carried over each railway.

It will be observed from this statement (pages 532 to 538) that there was a falling off in the work done per wagon per day on almost every line.

A summary of the results under the following heads is given below for ready reference :—

1. Percentage of increase in wagons,
2. Percentage of decrease in the work done per wagon per day,
3. Percentage of increase in ton miles,
4. Percentage of increase in weight of goods.

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohilkhand Railway.
Percentage of the increase in the No. of wagons in 1911 over the No. in 1907	36.3	45.1	14.3	16.7	20	Decrease *18.3	27.3	50.8	14.9
Percentage of the decrease in the work done per wagon per day in 1911 as compared with 1907 . . . . .	..	14.28	Increase 3.57	Increase 3.77	19.6	Increase 6.06	18	22.68	Increase 18.18
Percentage of the increase in the No. of wagons in 1914-15 over the No. in 1907	65.59	76.72	42.24	63.8	37.7	Decrease 16.35	63.03	92.46	37.7
Percentage of the decrease in the work done per wagon per day in 1914-1915 as compared with 1907	9.3	14.28	3.57	11.37	31.37	..	22	45.3	12.12
Percentage of the increase in ton miles in 1911 as compared with 1907	45.03	19.76	25.9	33.6	26.9	Decrease 1.57	22.55	Decrease 1.68	Decrease .14
Percentage of the increase in ton miles in 1914-15 as compared with 1911	26.4	14.4	3.7	26.2	8.2	38.1	Decrease 14.19	2.5	5.2
Percentage of the increase in ton miles in 1914-15 as compared with 1907	83.3	37.02	30.6	68.6	37.4	35.9	5.16	.79	5.08
Percentage of the increase in merchandise traffic in 1914-15 as compared with 1911	21.8	10.2	15.7	17.3	6.4	9.18	Decrease 2.7	6.13	4.7
Percentage of the increase in merchandise traffic in 1914-15 as compared with 1907	53.15	25.67	29.32	35.02	27.5	37.6	14.2	13.1	5.4

* Due to Jalarpet-Mangalore Section made over to S. I. Railway.

The Bengal Nagpur Railway with an increase of 53 per cent. in the traffic and of 83 per cent. in ton miles, had additional stock to the extent of 65.59 per cent. in 7 years. The increase in its wagon capacity was more proportionate to its advance in traffic and with long distance full wagon load traffic in coal and in Manganese this Railway showed a falling off of only about 9 per cent. in the work done per wagon per diem.

On the East Indian Railway, there was an increase of 68.6 per cent. in ton miles and the number of wagons rose by 63.8 per cent. and the weight of traffic by 35 per cent. In this case with a fair proportion between the increase in ton miles and the rise in the number of wagons, the mileage run per wagon per day was less in 1914-15 by 11.32 per cent. only. Like the Bengal Nagpur Railway the East Indian Railway has the advantage of through fully loaded coal trains, which ought ordinarily to get through quicker.

On the Great Indian Peninsula Railway there were difficulties in moving the traffic, but yet as the rise in ton miles, and the addition in the number of wagons were both 37 per cent. the reduction in the mileage run per wagon per day has been 31.37 per cent. against 45 per cent. on the North Western Railway.

The broad-gauge section of the Bombay, Baroda and Central India Railway from Ahmedabad to Bombay has the advantage of getting full train load traffic from Sabarmati and the Nagda-Muttra Railway also handles a large amount of through traffic. The addition to its rolling stock was somewhat large; it was 76 per cent. for an increase of 25 per cent. in weight of traffic and 37 per cent. in ton miles. It is admitted that the disproportion was not so great as in the case of the North Western Railway but yet the heavy increase on its rolling stock, in spite of its certain advantages just mentioned, showed a decrease in the work done per wagon per day by more than 14 per cent.

		Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh' and Rohil- khand Railway.
		<i>In Thousands of Rupees.</i>								
GROSS RECEIPTS.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1914-15—										
1st half	. . . . .	1,14,71	1,03,33	41,92	3,47,85	2,44,07	64,31	20,67	2,82,41	37,63
2nd half	. . . . .	1,37,24	1,09,99	61,14	3,85,73	3,00,72	68,69	21,98	2,31,78	51,55
	TOTAL	2,51,95	2,13,32	1,03,06	7,33,58	5,44,79	1,32,00	42,65	5,14,19	89,18
1907—										
1st half	. . . . .	1,04,95	93,94	34,92	2,90,88	2,90,31	65,92	20,21	2,49,15	42,54
2nd half	. . . . .	77,61	58,57	63,27	2,62,05	1,83,30	61,41	18,14	2,72,58	46,50
	TOTAL	1,82,56	1,52,51	98,19	5,52,93	4,73,51	1,27,33	38,35	5,21,73	89,04
1911—										
1st half	. . . . .	1,13,66	1,18,36	34,40	3,34,69	2,91,66	57,89	23,91	2,81,36	49,51
2nd half	. . . . .	93,00	90,76	68,32	3,00,88	2,26,00	63,99	20,69	2,65,04	39,52
	TOTAL	2,06,66	2,09,12	1,02,72	6,35,57	5,17,66	1,11,88	44,60	5,46,40	89,03

GOODS TRAIN—MILES RUN.		<i>In Thousands of Miles.</i>								
1914-15—										
1st half	26,54	13,52	8,81	72,85	52,04	11,53	4,11	47,60	11,56	
2nd half	28,38	14,75	9,78	77,97	51,89	11,39	3,90	45,46	12,10	
TOTAL	54,92	28,27	18,59	1,50,82	1,03,93	22,92	8,01	93,06	23,66	
1907—										
1st half	20,00	9,87	7,09	55,15	51,64	13,80	4,07	49,92	9,91	
2nd half	17,85	7,45	8,37	51,84	40,94	13,86	3,59	51,95	11,23	
TOTAL	37,85	17,12	15,46	1,06,79	92,58	27,66	7,66	1,01,87	21,14	
1911—										
1st half	23,45	13,37	7,30	62,12	55,47	9,89	4,31	56,05	12,74	
2nd half	21,40	11,42	9,89	59,25	48,04	8,53	4,09	50,72	11,48	
TOTAL	44,85	24,79	17,19	1,21,37	1,03,51	18,42	8,40	1,06,77	24,22	
TONS OF GOODS CARRIED ONE MILE (TON MILES).		<i>In Thousands of Tons.</i>								
1914-15—										
1st half	650,110	324,346	149,740	2,186,938	958,988	240,633	64,070	1,242,760	147,979	
2nd half	767,053	369,410	195,630	2,580,493	1,178,898	261,062	67,631	1,046,199	208,601	
TOTAL	1,417,163	690,756	345,370	4,767,431	2,137,886	501,695	131,701	2,288,959	356,580	

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohil- khand Railway.
	<i>In Thousands of Tons.</i>								
1907—									
1st half	437,545	321,659	108,744	1,470,685	949,300	191,301	65,181	1,062,818	163,991
2nd half	335,366	182,462	155,563	1,355,881	606,735	177,728	60,059	1,208,177	175,355
TOTAL	772,911	504,121	264,307	2,826,566	1,556,035	369,029	125,240	2,270,995	339,346
1911—									
1st half	583,957	349,560	131,871	1,955,746	1,086,718	179,959	80,841	1,168,597	180,914
2nd half	537,004	254,193	201,149	1,821,792	888,642	183,259	72,640	1,064,152	157,947
TOTAL	1,120,961	603,753	333,020	3,777,538	1,975,360	363,218	153,481	2,232,749	338,861
AVERAGE NUMBER OF TONS IN A TRAIN.									
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1914-15—									
1st half	244-93	239-98	170-01	300-21	184-29	208-71	155-80	261-10	128-03
2nd half	270-25	248-49	199-97	330-95	227-19	229-29	173-52	230-13	172-46
1907—									
1st half	218-76	332-69	153-42	266-66	183-82	138-59	121-53	212-89	165-56
2nd half	187-88	245-09	185-94	261-58	148-18	128-27	132-74	232-55	156-20

1911—										
1st half	249-02	261-51	180-62	314-82	195-91	181-92	176-40	208-50	141-95	
2nd half	250-90	222-51	203-44	307-43	184-97	214-74	175-83	209-80	137-58	
AVERAGE NUMBER OF VEHICLES IN A GOODS TRAIN.										
1914-15—										
1st half	30-01	34-42	36-05	35-64	24-19	29-14	22-90	34-53	25-96	
2nd half	32-40	35-74	38-40	37-05	26-93	31-14	23-13	29-79	26-91	
1907—										
1st half	26-63	40-59	30-18	35-80	24-73	23-72	15-84	24-39	28-40	
2nd half	26-15	36-60	34-82	35-94	23-49	22-38	17-10	28-22	26-53	
1911—										
1st half	30-91	33-62	31-24	38-56	25-49	28-62	22-59	29-92	24-55	
2nd half	33-21	36-87	35-64	37-59	24-40	28-96	23-70	30-17	22-64	
AVERAGE GOODS RECEIPTS PER GOODS VEHICLE PER MILE.										
	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—										
1st half	27-65	42-65	25-35	25-73	37-23	36-76	42-14	37-31	24-08	
2nd half	28-65	40-07	31-25	26-64	41-33	37-20	46-83	32-86	30-41	
1907—										
1st half	37-83	45-94	30-30	28-28	43-65	38-66	45-69	39-29	29-04	
2nd half	31-93	41-26	41-70	27-00	36-60	39-02	45-05	35-70	29-97	
1911—										
1st half	30-11	50-57	28-96	26-83	39-60	39-26	44-35	32-21	30-38	
2nd half	25-12	41-37	37-23	25-94	37-01	41-95	40-58	33-25	29-19	

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Mahratta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohil- khand Railway.
AVERAGE GOODS RECEIPTS PER TRAIN MILE.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1914-15—									
1st half	4-32	7-64	4-76	4-78	4-69	5-58	5-03	5-93	3-26
2nd half	4-84	7-46	6-25	4-95	5-80	6-03	5-64	5-10	4-26
1907—									
1st half	5-25	9-71	4-93	5-27	5-62	4-78	4-97	4-99	4-29
2nd half	4-35	7-86	7-56	5-06	4-48	4-43	5-06	5-25	4-14
1911—									
1st half	4-85	8-85	4-71	5-39	5-26	5-85	5-54	5-02	3-88
2nd half	4-34	7-94	6-91	5-08	4-70	6-33	5-06	5-23	3-44
AVERAGE SUM RECEIVED FOR CARRYING ONE TON ONE MILE.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—									
1st half	3-39	6-12	5-38	3-05	4-89	5-13	6-19	4-36	4-88
2nd half	3-44	5-76	6-00	2-87	4-90	5-05	6-24	4-25	4-75
1907—									
1st half	4-61	5-61	6-16	3-80	5-87	6-62	5-95	4-50	4-98
2nd half	4-44	6-16	7-81	3-71	5-80	6-63	5-80	4-33	5-09

1911—									
1st half	3-74	6-50	5-01	3-29	5-15	6-18	5-68	4-62	5-25
2nd half	3-32	6-86	6-52	3-17	4-88	5-66	5-47	4-78	4-80
1914-15—									
AVERAGE NUMBER OF GOODS VEHICLES .	14,421	9,366	6,627	33,975	17,770	4,516	1,839	26,764	7,770
NUMBER OF MILES RUN PER WAGON PER DAY	39	30	27	47	35	33	39	29	29
1907—									
AVERAGE NUMBER OF GOODS VEHICLES .	8,709	5,300	4,659	20,742	12,905	5,399	1,128	13,906	5,644
NUMBER OF MILES RUN PER WAGON PER DAY	43	35	28	53	51	33	50	53	33
1911—									
AVERAGE NUMBER OF GOODS VEHICLES .	11,873	7,693	5,328	24,212	15,487	4,409	1,436	20,965	6,488
NUMBER OF MILES RUN PER WAGON PER DAY	43	30	29	55	41	35	41	41	39
AVERAGE COST OF HAULING ONE TON ONE MILE.									
	Pics.	Pics.	Pics.	Pics.	Pics.	Pics.	Pics.	Pics.	Pics.
1914-15—									
1st half	1-88	2-81	4-17	1-40	3-65	2-90	2-90	2-60	3-10
2nd half	1-56	2-85	3-28	1-09	2-23	2-51	2-93	2-90	2-59
1907—									
1st half	2-04	2-00	4-61	1-51	2-50	4-49	1-97	2-34	3-05
2nd half	2-48	3-00	3-88	1-58	3-36	5-00	1-85	2-15	3-64
1911—									
1st half	1-86	2-68	3-76	1-34	2-58	3-29	2-98	2-81	2-53
2nd half	1-75	3-10	3-41	1-35	2-71	3-21	2-55	2-87	2-72

	Bengal Nagpur Railway.	Bombay, Baroda and Central India Railway.	Eastern Bengal State Railway.	East Indian Railway.	Great Indian Peninsula Railway.	Madras and Southern Maharatta Railway.	Nizam's Guaranteed State Railway.	North Western Railway.	Oudh and Rohil- khand Railway.
AVERAGE COST OF HAULING ONE TON ONE MILE, INCLUDING INTEREST ON CAPITAL, SPENT ON THE OPEN LINES, AT 5 PER CENT. PER ANNUM.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1914-15—									
1st half	3-63	4-95	7-24	2-55	5-63	5-06	5-64	4-73	6-46
2nd half	3-17	4-89	6-57	2-12	3-93	4-58	5-53	5-32	5-23
1907—									
1st half	4-17	3-62	7-51	2-87	4-23	8-04	4-50	4-28	5-83
2nd half	5-29	5-81	6-15	3-05	5-77	8-78	4-57	3-93	6-29
1911—									
1st half	3-70	4-46	6-30	2-49	4-23	6-15	5-07	4-95	5-30
2nd half	3-70	5-29	5-72	2-56	4-60	5-93	4-82	5-12	5-67
TOTAL WEIGHT OF MERCHANDISE IN TONS, CARRIED DURING—									
1914-15	6,261,879	2,858,238	4,233,445	14,987,357	5,672,800	3,342,998	893,983	5,930,712	1,926,294
1907	4,088,695	2,274,346	3,273,471	11,100,174	4,446,611	2,428,768	782,584	5,241,859	1,827,567
1911	5,138,569	2,591,854	3,658,908	12,771,980	5,328,142	3,061,730	918,344	5,587,760	1,838,914

Further examination of the position in order to see whether the railways are doing their best in utilising the capacity of the railways is essential, and it will not be *mere* academic discussion if the statistical results are scrutinized, for it may result in attracting attention towards improvements.

In the first place, although the carrying capacity of a line may be constant in theory it is not so in practice, because the traffic fluctuates. This is very true in ordinary times, when the traffic does fluctuate from month to month, sometimes week to week. During existing times, however, the fluctuations are more due to want of wagons at places of loading and for delays at junctions, in big yards, etc. Otherwise, under existing conditions, with constant and heavy traffic the maximum capacity of the line can be very well kept occupied, if there is a combination and an organization, which would look at things from all points of view and have such information as would enable the organizers and administrators to work back and be ready for things that now come suddenly and have to be faced without there being any preparation for it. It does not require any high degree of technical knowledge of transportation to know that if any section of the line is to be occupied in carrying maximum capacity of traffic it is essential that trains must have full loads. The maximum weight of trains on any line depends on several factors, such as the hauling power of the engines, speed required, grades, the lengths of available loops and sidings. Railways have fixed loads on certain sections of their lines and in these days 50 loaded wagons to a broad gauge train does not seem to be an unduly high figure.

For the year 1915-16, the following were the average number of loaded vehicles to a freight train on the following important broad gauge trunk lines :—

	1915-16	
	1st half.	2nd half
Bengal Nagpur Railway	32-15	33-30
Bombay, Baroda and Central India Railway	36-24	37-23
East Indian Railway	35-64	37-39
Great Indian Peninsula Railway	27-58	27-84
North Western Railway	34-49	32-81

One can understand the reasons for limited loads on the Great Indian Peninsula Railway because on greater portion of this line (Great Indian Peninsula proper) there are grades which operate against heavy loads, but the point in whether the figure of 27 is a fair average.

The best results were those of the East Indian Railway, Bombay, Baroda and Central India Railway, but even on these lines there was an average deficiency of 13 vehicles to a train.

What this means can be illustrated by an example. Say between A and B 1,850 loaded wagons have to be moved. This can be done by

running 37 trains of 50 loaded each, but if each train contains 37 loaded wagons the section A and B is burdened with 13 more trains and thus its actual capacity is wasted to this extent and this affects a very large area and delays are apt to be cumulative.

The average carrying capacity of wagons has been given as follows :—

	Covered wagons. Tons.	Open wagons. Tons.
Bengal Nagpur Railway	16-23	17-77
Bombay, Baroda and Central India Rail- way	18-86	19-17
East Indian Railway	18-16	16-74
Great Indian Peninsula Railway	18-32	16-43
North Western Railway	21-32	17-63

The average load secured per *loaded vehicle* (without taking the empty vehicles into account) was as follows in 1915-16 :—

	1st half. Tons.	2nd half. Tons.
Bengal Nagpur Railway	12-42	12-77
Bombay, Baroda and Central India Rail- way	11-23	10-94
Great Indian Peninsula Railway	10-76	11-92
North Western Railway	10-76	10-33
East Indian Railway	13-93	14-01

These figures show a further waste of capacity, which taken in conjunction with the wastage of train capacity represent a serious loss, especially when it is remembered that the figures are for loaded vehicles, without taking into account empty wagons.

The North Western Railway have provided for wagons of highest capacity, but its loads were not big. High capacity wagon means bigger tare loads and with no advantage in the actual load this must mean great waste of capacity both in number of trains and wagons used.

On the North Western Railway, for instance, with a mean capacity of 19·475 tons the average mean load is 10·545 tons, which means that to carry 1,000 tons of traffic about 95 vehicles are used instead of 53 only, or in other words, for every 1,000 tons 42 vehicles are being unnecessarily used. Wagons of seemingly unnecessary high capacity involving wastage of space on trains, meaning more trains go to add to congestion at junction, terminal, and marshalling stations and mean additional staff, engines, etc.

From Railway Board's Administration Report for 1916-17 it is noticed that the results in regard to the number of miles run per wagon per day were as follows :—

	Miles per day 1916-17.	Miles per day 1907.
Bengal Nagpur Railway	40	43
Bombay, Baroda and Central India Rail- way	39	35
East Indian Railway	59	53
Great Indian Peninsula Railway	47	51
North Western Railway	34	53

It will be seen that while the East Indian Railway showed a better result in the work done per wagon per day the other railways excepting the Bombay, Baroda and Central India Railway did not show any improvement as compared with results ten years ago.

The results in 1915-16 were as follows :—

	Wagon miles per day.
Bengal Nagpur Railway	42
Bombay, Baroda and Central India Railway	35
East Indian Railway	52
Great Indian Peninsula Railway	37
North Western Railway	30

which show that while there is no improvement in 1916-17 except for the East Indian Railway and the Bombay, Baroda and Central India Railway compared with 1907, though there was an improvement on the East Indian, Great Indian Peninsula, Bombay, Baroda and Central India and North Western Railways in 1916-17 over the figures of 1915-16.

Compared with 1907, the work done per wagon per day on the North Western Railway was less by 19 miles in 1916-17.

In regard to the comparisons of the average capacity of wagons with the average load secured per loaded vehicle (without taking the empty vehicles into account) there yet seems wastage.

(a) The average capacity of wagons in 1916-17 were as follows :—

	Covered wagons. Tons.	Open wagons. Tons.
Bengal Nagpur Railway	16-26	18-32
Bombay, Baroda and Central India Rail- way	18-98	19-27
East Indian Railway	18-40	16-77
Great Indian Peninsula Railway	18-34	16-56
North Western Railway	21-38	17-63

(b) While the load—average—secured per loaded vehicle—without taking the empty vehicle into account—was as follows :—

	1st half. Tons.	2nd half. Tons.
Bengal Nagpur Railway	14-59	14-22
Bombay, Baroda and Central India Rail- way	12-24	12-07
Great Indian Peninsula Railway	10-91	12-44
North Western Railway	11-23	13-21
East Indian Railway	13-50	13-28

Owing to the enormous increase in coal traffic there is naturally an improvement in the wagon load over the results of 1915-16 *except in the case of the East Indian Railway where the load for wagon has gone down.* The wagon loads in 1915-16 were as follows :—

	1st half. Tons.	2nd half. Tons.
Bengal Nagpur Railway	12-42	12-77
Bombay, Baroda and Central India Rail- way	11-23	10-94
Great Indian Peninsula Railway	10-76	11-92
North Western Railway	10-76	10-33
East Indian Railway	13-93	14-01

Taking the North Western Railway the wastage is as follows :—

	Tons.
Mean capacity	19-55
Mean load	12-22
	7-33

or $7\frac{1}{2}$ tons per every loaded wagon, which practically means that almost every third wagon was unnecessarily used.

The figures of number of loaded vehicles to a freight train were :—

	1914-15		1915-16		1916-17	
	1st half	2nd half	1st half	2nd half	1st half	2nd half
Bengal Nagpur Railway	30-01	32-40	32-15	33-30	34-02	32-91
Bombay, Baroda and Central India Railway	34-42	35-74	36-24	37-23	35-32	36-30
East Indian Railway	35-64	37-05	35-64	37-39	39-23	41-02
Great Indian Peninsula Railway	24-19	26-93	27-58	27-84	28-94	28-58
North Western Railway	34-53	29-79	34-49	32-81	34-99	35-15

It will be noticed that there has been some improvement in the train load except that in the case of the Bengal Nagpur and Bombay, Baroda and Central India Railways the figures of the second half of 1915-16 were better than those of 1916-17.

But yet taking the North Western Railway, if the load of a loaded train is taken at 50, the average shows a deficit of 15 wagons per train, which is a large figure and represents a deficit in the load of each train by 28 per cent.

The Bengal Nagpur Railway had to carry in the first half of 1916-17 74 per cent. and in the 2nd half 49 per cent. greater goods ton miles as compared with that carried during the corresponding periods of 1913-14, the official year just before the War, and the increases in train miles to carry this additional tonnage were 24 per cent. and 18 per cent. respectively.

The Bombay, Baroda and Central India Railway had an increase of 31 per cent. in ton miles during the 1st half and 19 per cent. in the 2nd half with an increase of 25 per cent. and 15 per cent. in train miles respectively.

On the Great Indian Peninsula Railway the ton miles rose by 36 and 20 per cent. and the train miles by 25 and 15 per cent. respectively.

The increase in ton mileage on the East Indian Railway was 36 per cent. and that in train mileage about 25 per cent.

The North Western Railway during the 1st half of 1916-17 actually hauled less ton miles than in the 1st half of 1913-14, as the decrease was 4 per cent. with an exactly corresponding decrease in the train mileage, but during the 2nd half the ton miles rose by 13 per cent. to meet which there was no extra increase of train miles. On the other hand the train miles went down by 5 per cent.

The vehicle mileage loaded and empty compared as follows in 1916-17 with that of 1913-14 :-

	VEHICLE MILEAGE, 1913-14 (in thousands).				VEHICLE MILEAGE, 1916-17 (in thousands).				PERCENTAGE OF INCREASE IN			
	1st half.		2nd half.		1st half.		2nd half.		1st half.		2nd half.	
	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.	Loaded.	Empty.
Bengal Nagpur Railway	51,530	26,025	55,795	25,307	72,947	35,335	72,769	31,730	42	36	30	25
Bombay, Baroda and Central India Railway.	34,787	42,524	39,754	12,811	38,388	22,443	41,433	21,607	10	79	4	69
Great Indian Peninsula Railway	101,977	40,577	125,192	25,475	143,212	61,588	136,082	53,927	40	52	9	112
East Indian Railway	164,526	87,653	165,744	94,689	215,335	130,110	218,449	143,827	31	48	32	52
North Western Railway	124,741	51,695	111,424	30,490	120,286	54,965	106,350	53,414	Decrease 4	6	Decrease 5	75

It will be noticed that while on the Bengal Nagpur Railway and East Indian Railway, the percentage of increased loaded vehicle mileage was not exceeded by the rise in the percentage of empty vehicle mileage, the western lines, viz., the Bombay, Baroda and Central India, the Great Indian Peninsula and the North Western Railways showed very large disproportion between the rise in loaded vehicle mileage and the rise in the percentage of empty vehicle mileage—the increase in empty running was considerably greater, so much so, that on the Great Indian Peninsula Railway the empty running rose by 112 per cent. The percentages of empty vehicle mileage to loaded vehicle mileage on the Great Indian Peninsula, North-Western and Bombay, Baroda and Central India Railways were 41, 48 and 55 per cent. respectively. Although the percentage of empties was not very large compared with previous years, the numbers of both loaded and empty trains were greater owing as previously stated to very heavy exports due to the carriage of coal to the western ports by rail from Bengal, instead of by the sea and to the Calcutta port being practically shut out for export traffic.

A statement is appended below showing the average speed of goods trains during last 4 official years :—

Average speeds of goods trains.

	MILES PER HOUR.							
	1913-14.		1914-15.		1915-16.		1916-17.	
	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.
Bengal Nagpur Railway .	10-00	10-00	10-00	10-00	10-00	10-00	10-00	10-00
Bombay, Baroda and Central India Railway	8-53	7-90	7-95	7-94	7-95	7-95	8-04	8-08
Great Indian Peninsula Railway.	10-70	10-34	12-45	10-08	10-34	10-18	10-24	10-12
East Indian Railway .	15-20	15-10	15-00	16-30	16-20	16-38	16-30	16-30
North Western Railway .	10-28	10-36	10-44	10-29	10-37	10-13	9-92	9-55

The Bengal Nagpur Railway shows an average speed of 10 miles per hour. It has remained stationary at this figure. The booked speeds of goods trains on the Bengal Nagpur Railway vary from 12 to 18 miles per hour, except that on some sections in one direction the speed is 14 to 20 miles per hour. Out of 1,896 miles of its broad gauge mileage, 625 miles are on a grade of 1 in 101 to 1 in 200, 151 miles in grades of 1 in 201 to 1 in 300, and 119 miles on the grades of 1 in 181 to 1 in 100.

The Great Indian Peninsula Railway average speed is recorded at 10-24 miles per hour. During the last four years, the highest figure attained by this Railway was 12-45 miles per hour during the 1st half of 1914-15. The Great Indian Peninsula loads per train are limited. The

average train load of freight trains is about 29 loaded vehicles against 39 to 41 of the East Indian Railway and 34 to 36 of the Bengal Nagpur, Bombay, Baroda and Central India, and North Western Railways. The Great Indian Peninsula goods trains on its Jubbulpore branch, Nagpur branch and between Bina and Delhi, including branches on this length, have a booked speed of 18 to 19 miles per hour, except on certain lengths where it goes down to 12 and 13. It has to carry a limited load owing to short gradients, specially as the bulk of the traffic has to ascend and descend the western ghats, both from the north east and south east to Bombay. Out of a total mileage of 3,173 miles, more than one-fourth is on a grade of 1 in 101 to 1 in 200 and 279 miles in grades of 1 in 201 and 1 in 300.

The North Western Railway has gone down in its average speed to 9.92 miles from 10.37 miles per hour. Its booked speed of goods trains is 15 miles per hour except on the ghats.

The Bombay, Baroda and Central India Railway goods trains have the slowest speed not exceeding an average of 8 miles an hour.

The East Indian Railway, of course, shows the best results. Its average is more than 50 per cent. greater than that of the other lines and the booked speed is about 20 miles an hour.

The results of work done per wagon per day have already been commented upon and it will also be interesting to see the work done by engines. The results are worst on the North Western Railway. The East Indian Railway with 870 goods engines, used exclusively on goods working, showed in 1916-17 a result of 76 miles per engine per day which was an improvement on the figures of 1915-16 and of 1913-14. But the North Western Railway with 939 engines, used exclusively for goods traffic, showed a return of 21 miles per day. It did not show far better results before. Its goods engines did not do more than 24 miles per day before the War (1913-14) and 21 miles in 1915-16. Yet it may be pointed out that when the North Western Railway had 863 engines in 1913-14 and worked a heavier ton miles in the 1st half of that year as compared with 1916-17 and only 13 per cent. less ton miles in the 2nd half it showed a better result when it had a lesser number of engines. The Bengal Nagpur Railway and the Bombay, Baroda and Central India Railway do not show engines employed on goods working exclusively. The Bengal Nagpur Railway results in 1913-14 with 317 engines were 69 miles per engine per day against 62 miles per engine per day with 416 engines in 1916-17. The Bombay, Baroda and Central India only added 10 engines to its number since 1913-14, on mixed working and showed a better result by 5 miles per day. Both on the East Indian and North Western Railways, in engines used on combined service, there was an improvement but the numbers of such engines were very

small, namely 80 on the North Western Railway and 167 on the East Indian Railway.

High cost of operation on metre and narrow gauge lines.

Then there is another important factor in connection with "Economics of Transportation," viz., the cost of haulage by narrow gauge lines. The mileage of such lines is increasing and the tendency is to encourage narrow gauge lines into big systems, and, therefore, the cost of carriage, apart from the question of the transshipment due to break of gauge, by such lines has to be carefully considered. For it seems clear that any large systems of narrow gauge lines will not be able to afford low cost of carriage to the public in spite of low cost of construction.

In a given volume of traffic the narrower the gauge the greater is the working expenses.

The reason for the narrow gauge cost for hauling a given volume of traffic being greater than on a broad gauge is that the hauling capacity of the engines and trucks of the narrow gauge is much less, and, therefore, more trains have to be run on this gauge for carrying a given amount of traffic than what the broad gauge would require for carrying the same amount. Consequently, the cost of haulage per ton mile on 2½' gauge becomes greater and the percentage of working expenses to gross earnings is more.

It will be seen from the following comparative figures that the cost of haulage of one ton one mile on a narrow gauge is considerably higher than that of a broad gauge, and that the locomotive expenses of the narrow gauge come very near to that of broad gauge, and, therefore, it may not be out of place to particularly point out here that while the load a narrow gauge engine is capable of hauling is even less than half the load a broad gauge engine hauls, the locomotive expenses of both are nearly equal, thus proving that there is a heavy loss in coal, oil, etc., for every mile of engine run on a narrow gauge system.

Analysis of the working during each half of the financial year 1914-15.

	1914-15.	Bengal Nagpur Railway 5' 6" gauge.	Bengal Nagpur Railway 2' 6" gauge.
Average cost of hauling one ton one mile,— pies.	1st half year	1-88	4-57
	2nd half year	1-56	5-13
Average cost of hauling one ton one mile, including interest on Capital expended on open line at 5 per cent.,—pies	1st half year	3-63	9-53
	2nd half year	3-17	11-12
Total Locomotive expenses per engine mile,—annas.	1st half year	8-77	7-71
	2nd half year	8-39	7-66

In connection with the question of construction of railways of any length in an area where the broad gauge would not pay on account of original cost of construction being high, even taking into account the fact that the main line would supply the rolling stock and in regard to branches to the metre gauge, it would, I consider, be preferable to build metre gauge lines and it may not be out of place to quote the following extracts from a note I wrote in July, 1915 :—

“ Take the case of Jamnagar Railway. It is a small line of 54 miles length on metre gauge. This metre gauge line of short length of 54 miles (about the length of Messrs. Martin and Company's Baraset-Basirhat line of 2' 6" gauge) pays 6·62 per cent. on a capital outlay of Rs. 23,53,951 (or Rs. 43,500 per mile) and has a week mile earning of Rs. 103 and working expenses at 46 per cent. ”

“ The Baraset-Basirhat Railway of Messrs. Martin & Co. (with a mileage of 51 miles, practically the same as Jamnagar Railway) with a week mile earning of Rs. 124 does not pay more than 5·2 per cent. on a capital outlay of Rs. 23,08,116 (or Rs. 45,000 per mile). ”

“ If the Barsi Light Railway had been a metre gauge line the earnings would have been much better and the working expenses lower. This is so very apparent. During recent years the week mile earnings have gone up from Rs. 174, which was the maximum before the extension, to Rs. 219, but during 1913 and 1914 it has been somewhat stationary at Rs. 206 and Rs. 219. This shows that had the line been metre gauge the increase would have been enormous. ”

“ This above remark of mine is borne out by the fact that on the Morvi Railway so long as the railway was narrow gauge (2' 6") the earnings were about Rs. 75 per week per mile at the utmost and the working expenses 46 per cent. ”

“ In 1905 the Morvi Railway was converted into metre gauge and for same mileage the week earnings steadily rose to Rs. 161 per week mile (more than double) and the working expenses came down from 46 per cent. to 33 per cent. and 35 per cent. and the percentage of net profit went up from 5·55 per cent. to 9·65 per cent. *in spite of the fact that the capital outlay on narrow gauge was 34 lakhs against 52 lakhs for metre gauge now, and on this increased capital the railway pays 9 per cent. No better case could be cited.* ”

“ Take again, the Udaipur-Chittor line and compare with the Arrah-Sasaram of Martin's. The Arrah-Sasaram Railway has a length of 65·26 miles and the Udaipur-Chittor of 67·30. The Arrah-Sasaram is 2' 6" and the Udaipur Chittor is metre gauge. The capital cost of Arrah-Sasaram including rolling stock is Rs. 22,31,435 and of the Udaipur-

Chittor Rs. 22,34,126 (this also includes rolling stock). Here the cost of narrow gauge including rolling stock per mile is greater than the cost of metre gauge including rolling stock per mile. The working expenses of the Arrah-Sasaram (2' 6" gauge) are 61 per cent. and that of the Udaipur-Chittor 48 per cent."

Now as to metre gauge. The following are the figures of the cost of haulage on metre gauge and broad gauge sections of the Bombay, Baroda and Central India Railway.

During first half of 1916-17.

Average cost of haulage on broad gauge section	. 2.4 pies per ton mile.
Average cost of haulage on metre gauge section	. 2.76 pies per ton mile.

This means that for every ton of goods carried on the metre gauge there is an additional expenditure of .72 pie for every mile as compared with the broad gauge.

This extra expenditure is obvious when we compare the "locomotive running expenses" on both gauges.

During first half of 1916-17.

Broad gauge	. . . . .	13.72 annas per engine mile.
Metre gauge	. . . . .	10.37 " " " "

Taking a given amount of traffic of 2,000 tons it would take 7 broad gauge trains (at an average freight load per train of 276.74 tons), and about 15 metre gauge trains (at an average freight load per train of 130 tons). These are also figures for the 1st half of 1916-17.

To carry 2,000 tons for 200 miles the difference in "locomotive running expenses" would be:—

Broad gauge	. . . . .	annas	trains	miles	Rs.
Metre gauge	. . . . .	13.72	7	200	=1,200
		10.37	15	200	=1,944

So that for the carriage of every 2,000 tons for every 200 miles there is an extra expenditure of Rs. 744 by metre gauge as compared with the broad gauge.

APPENDIX V.

Passenger Traffic, (average rates, cost and profit of several Railways).

		EAST INDIAN.			GREAT INDIAN PENINSULA.			BOMBAY, BARODA AND CENTRAL INDIA.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	3rd class	3	1-72	1-28	4	3-410	0-584	3 (ordinary) 4 (by mail)	..	..
	All classes together	3-04	1-72	1-32	3-52	3-416	0-104	3-24	2-48	0-76
1873	3rd class	3	1-87	1-13	4	2-88	1-12	3 (ordinary) 4 (by mail)	..	..
	All classes together	3-08	1-874	1-9126	3-2536	2-88	0-3736	3-04	2-16	0-88
1875	3rd class	3	1-672	1-338	34	2-384	1-616	3 (ordinary) 4 (by mail)	..	..
	All classes together	3-108	1-672	1-436	3-312	2-384	0-928	3-024	2-04	0-984
1877	3rd class	3	1-00	2-00	4	1-52	2-48	3 (ordinary) 4 (by mail)	..	..
	All classes together	3-016	1-00	2-016	2-992	1-52	1-472	2-944	1-4	1-544
1879	3rd class	3	1-08	1-92	4	2-16	1-84	2½ (ordinary) 4 (by mail)	..	..
	All classes together	2-984	1-08	1-904	3	2-16	0-084	2-6	1-436	1-112

1882	{ 3rd class	2-79	0-73	2-06	2-48	1-01	1-47	2-45	0-96	1-49
	{ All classes together	3-01	0-73	2-28	3-03	1-01	2-02	2-72	0-96	1-76
1884	{ 3rd class	2-5	0-87	1-63	2-48	1-06	1-42	2-44	1-1	1-31
	{ All classes together	2-7	0-87	1-83	2-81	1-06	1-75	2-70	1-1	1-60
1886	{ 3rd class	2-51	0-82	1-69	2-44	1-25	1-19	2-35	0-95	1-40
	{ All classes together	2-70	0-82	1-88	2-72	1-25	1-47	2-63	0-95	1-68
1888	{ 3rd class	2-50	0-76	1-74	2-42	1-43	0-99	2-32	1-18	1-14
	{ All classes together	2-70	0-76	1-94	2-71	1-43	1-28	2-61	1-16	1-43
1892	{ 3rd class	2-51	0-64	1-87	2-41	1-58	0-83	2-34	1-17	1-17
	{ All classes together	2-73	0-64	2-09	2-70	1-58	1-12	2-62	1-17	1-45
1895	{ 3rd class	2-51	0-69	1-82	2-41	1-87	0-54	2-36	1-06	1-30
	{ All classes together	2-73	0-69	2-04	2-71	1-87	0-84	2-63	1-06	1-57
1898	{ 3rd class	2-51	0-73	1-78	1-90	2-35	-0-45	2-23	1-40	0-83
	{ All classes together	2-74	0-73	2-01	2-35	2-35	0-00	2-60	1-40	1-20
1901	{ 3rd class	2-46	0-76	1-70	2-05	1-48	0-57	2-28	1-30	0-98
	{ All classes together	2-65	0-76	1-89	2-38	1-48	0-90	2-58	1-30	1-28
1904	{ 3rd class	2-44	0-76	1-68	2-15	1-49	0-66	2-28	1-41	0-87
	{ All classes together	2-66	0-76	1-90	2-49	1-49	1-00	2-54	1-41	1-13
1907	{ 3rd class	2-23	0-87	1-36	2-15	1-60	0-55	2-14	1-13	1-01
	{ All classes together	2-42	0-87	1-55	2-46	1-60	0-86	2-37	1-13	1-24
1910	{ 3rd class	2-21	0-87	1-34	2-27	1-82	0-45	2-06	1-36	0-70
	{ All classes together	2-42	0-87	1-55	2-60	1-82	0-78	2-23	1-36	0-87
1913	{ 3rd class	2-21	0-76	1-45	2-36	1-89	0-47	2-09	1-39	0-70
	{ All classes together	2-40	0-76	1-64	2-61	1-89	0-72	2-31	1-39	0-92
1915	{ 3rd class	2-22	0-75	1-47	2-32	1-85	0-47	2-09	1-24	0-85
	{ All classes together	2-41	0-75	1-66	2-55	1-85	0-70	2-30	1-24	1-06

Passenger Traffic—contd.

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MONOGRAPH ON INDIAN RAILWAY RATES.

		MADRAS.			SCINDE, PUNJAB AND DELHI.			EASTERN BENGAL.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	3rd class	3	1-4	1-6	3	..	..	4½	..	..
	All classes together	3-024	1-408	1-616	..	..	..	..	..	..
1873	3rd class	By day 3	..	..	Scinde section 3½	..	..	4½	..	..
	All classes together	By night 4	..	..	Punjab section 3	..	..	..	..	..
1875	3rd class	3½	2-04	1-46	3	1-872	1-128	4½	1-936	2-564
	All classes together	2-992	2-04	952	2-808	1-872	936	3-024	1-936	1-188
1877	3rd class	Single 3-5	..	..	2-25, 2-5 and 3	..	..	4½	1-44	3-06
	All classes together	Return 4-375	3-152	1-576	1-576	2-52	1-544	976	2-808	1-44
1879	3rd class	Single 3	..	..	2-25, 2-5 and 3	..	..	4½	728	2-772
	All classes together	Return 6	2-5792	2	5792	2-4	1-44	96	3-043	728
1883	3rd class	1-99	1-28	71	2-42	1-42	1-00	2-96	1-38	1-53
	All classes together	2-29	1-28	1-01	2-56	1-42	1-14	3-25	1-38	1-37

1884	{ 3rd class	1-87	.92	.95	2-43	1-34	1-09	2-78	1-69	1-04
	{ All classes together	2-11	.92	1-19	2-59	1-34	1-25	2-86	1-69	1-17
1886	{ 3rd class	1-75	0-97	0-78	2-39	(North- 1-13	Western) 1-26	2-46	1-38	1-08
	{ All classes together	1-97	0-97	1-00	2-52	1-13	1-39	2-70	1-38	1-32
1888	{ 3rd class	1-70	1-02	0-68	2-47	1-45	1-02	2-53	1-24	1-29
	{ All classes together	1-89	1-02	0-87	2-62	1-45	1-17	2-76	1-24	1-52
1892	{ 3rd class	1-63	1-03	0-60	2-42	1-33	1-00	2-53	1-19	1-39
	{ All classes together	1-78	1-03	0-75	2-57	1-33	1-24	2-78	1-19	1-59
1895	{ 3rd class	2-11	0-93	1-18	2-25	1-04	1-21	2-57	1-04	1-53
	{ All classes together	2-28	0-93	1-35	2-43	1-04	1-39	2-77	1-04	1-73
1898	{ 3rd class	2-11	1-07	1-04	2-25	1-03	1-22	2-48	1-16	1-32
	{ All classes together	2-31	1-07	1-24	2-43	1-03	1-40	2-70	1-16	1-54
1901	{ 3rd class	2-23	0-95	1-28	2-27	1-17	1-10	2-38	1-35	1-03
	{ All classes together	2-42	0-95	1-47	2-42	1-17	1-25	2-60	1-35	1-25
1904	{ 3rd class	2-25	1-30	0-95	2-27	1-14	1-13	2-48	1-49	0-99
	{ All classes together	2-44	1-30	1-14	2-41	1-14	1-27	2-71	1-49	1-22
1907	{ 3rd class	2-25	1-57	0-68	2-26	1-28	0-98	2-46	1-74	0-72
	{ All classes together	2-44	1-57	0-87	2-41	1-28	1-13	2-64	1-74	0-80
1910	{ 3rd class	2-20	1-36	0-84	2-26	1-56	0-70	2-41	1-44	0-97
	{ All classes together	2-36	1-36	1-00	2-43	1-56	0-87	2-58	1-44	1-14
1913	{ 3rd class	2-18	1-25	0-93	2-26	1-45	0-81	2-50	1-30	1-11
	{ All classes together	2-35	1-25	1-10	2-42	1-45	0-97	2-65	1-39	1-26
1915	{ 3rd class	2-18	1-16	1-02	2-26	1-31	0-95	2-50	1-49	1-01
	{ All classes together	2-33	1-16	1-17	2-41	1-31	1-10	2-65	1-49	1-16

1882	{	Srd class	2-51	1-07	1-44	2-50	0-95	1-55	Tirhoot	0-97	1-53
		All classes together	2-58	1-07	1-51	2-60	0-95	1-65	2-50 2-71	0-97	1-74
1884	{	Srd class	2-5	1-1	1-4	2-00	0-96	1-04	2-35	1-6	1-75
		All classes together	2-59	1-1	1-49	2-08	0-96	1-10	2-54	1-6	1-94
1886	{	Srd class	2-5	1-13	1-37	2-00	1-07	0-93	2-02	1-03	0-99
		All classes together	2-61	1-13	1-48	2-07	1-07	1-00	2-11	1-03	1-08
1888	{	Srd class	2-50	1-18	1-32	2-00	1-04	0-96	2-00	0-95	1-05
		All classes together	2-63	1-18	1-45	2-07	1-04	1-03	2-07	0-95	1-12
1892	{	Srd class	2-51	0-91	1-60	2-00	0-99	1-01	2-12	0-72	1-40
		All classes together	2-67	0-91	1-76	2-06	0-99	1-07	2-23	0-72	1-51
1895	{	Srd class	2-50	1-17	1-33	2-00	0-94	1-06	2-00	0-72	1-23
		All classes together	2-66	1-17	1-49	2-07	0-94	1-13	2-11	0-72	1-39
1898	{	Srd class	2-50	1-20	1-30	2-00	1-08	0-92	2-00	0-83	1-17
		All classes together	2-68	1-20	1-48	2-08	1-08	1-00	2-10	0-83	1-27
1901	{	Srd class	2-47	1-06	1-41	2-04	0-82	1-22	2-00	0-82	1-13
		All classes together	2-64	1-06	1-58	2-11	0-82	1-29	2-06	0-82	1-24
1904	{	Srd class	2-46	1-37	1-09	2-04	0-77	1-27	2-00	0-81	1-19
		All classes together	2-65	1-37	1-28	2-12	0-77	1-35	2-06	0-81	1-25
1907	{	Srd class	2-45	1-51	0-94	2-00	0-82	1-18	1-99	0-84	1-15
		All classes together	2-62	1-51	1-11	2-08	0-82	1-26	2-05	0-84	1-21
1910	{	Srd class	2-42	1-20	1-22	2-17	1-18	0-99	1-99	0-79	1-20
		All classes together	2-61	1-29	1-41	2-26	1-18	1-08	2-04	0-79	1-25
1913	{	Srd class	2-44	1-17	1-27	1-95	1-19	0-76	1-99	0-70	1-29
		All classes together	2-61	1-17	1-44	2-08	1-19	0-89	2-03	0-70	1-33
1915	{	Srd class	2-44	1-17	1-27	1-96	0-91	1-05	1-97	0-74	1-23
		All classes together	2-62	1-17	1-45	2-08	0-91	1-17	2-02	0-74	1-23

Passenger Traffic—contd.

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MONOGRAPH ON INDIAN RAILWAY RATES.

		BENGAL NAGPUR.			ASSAM BENGAL.			BURMA.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1886	3rd class . . . . .	..	..	..	..	..	..	3-00	1-87	1-13
	All classes together . . . . .	..	..	..	..	..	..	3-11	1-87	1-24
1888	3rd class	2-02	1-98	0-64	..	..	..	3-00	1-50	1-50
	All classes together	2-08	1-98	0-70	..	..	..	3-10	1-50	1-60
1892	3rd class	1-99	1-46	0-53	..	..	..	3-00	1-03	1-97
	All classes together	2-08	1-46	0-62	..	..	..	3-11	1-03	2-08
1895	3rd class	2-00	1-80	0-70	..	..	..	3-00	1-34	1-66
	All classes together	2-10	1-80	0-80	..	..	..	3-14	1-34	1-80
1898	3rd class	2-00	1-77	0-23	3-00	1-83	1-17	2-65	1-27	1-38
	All classes together	2-13	1-77	0-36	3-11	1-83	1-23	2-34	1-27	1-57

1901	3rd class	2-28	1-07	1-21	3-00	1-80	1-20	3-04	1-44	1-60
	All classes together	2-40	1-07	1-33	3-10	1-80	1-30	3-20	1-44	1-76
1904	3rd class	2-34	1-05	1-29	2-96	2-40	0-56	3-01	1-51	1-60
	All classes together	2-50	1-05	1-45	3-09	2-40	0-69	3-16	1-51	1-65
1907	3rd class	2-35	1-04	1-31	2-84	2-20	0-64	2-99	1-73	1-28
	All classes together	2-51	1-04	1-47	2-99	2-20	0-79	3-17	1-73	1-44
1910	3rd class	2-40	1-08	1-32	2-81	1-98	0-83	2-99	1-63	1-36
	All classes together	2-55	1-08	1-47	2-97	1-98	0-99	3-10	1-63	1-53
1913	3rd class	2-44	1-03	1-41	2-72	1-56	1-16	2-99	1-35	1-64
	All classes together	2-60	1-03	1-57	2-85	1-56	1-20	3-10	1-35	1-81
1915	3rd class	2-44	0-98	1-46	2-69	1-85	0-84	2-99	1-60	1-39
	All classes together	2-62	0-98	1-64	2-82	1-85	0-97	3-10	1-60	1-56

Passenger Traffic—concl'd.

		INDIAN MIDLAND.			SOUTHERN MAHRATTA.		
		Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.	Average sum received for carrying a unit one mile.	Average cost of hauling a coaching unit one mile.	Average profit in hauling a coaching unit one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1888	{ 3rd class	2-65	2-00	0-65	2-49	74	0-75
	{ All classes together	2-82	2-00	0-82	2-61	1-74	0-87
1892	{ 3rd class	2-54	1-56	0-98	2-28	1-50	0-78
	{ All classes together	2-83	1-56	1-27	2-30	1-50	0-80
1895	{ 3rd class	2-54	1-77	0-77	2-00	1-15	0-85
	{ All classes together	2-90	1-77	1-13	2-13	1-15	0-98
1898	{ 3rd class	2-55	1-45	1-10	2-00	1-52	0-48
	{ All classes together	2-87	1-45	1-42	2-18	1-52	0-66
1901	{ 3rd class	} Amalgamated with Great Indian Peninsula Railway.			2-03	1-62	0-41
	{ All classes together				2-16	1-62	0-54
1904	{ 3rd class . . . . .	..	..	..	2-10	1-38	0-72
	{ All classes together . . . . .	..	..	..	2-27	1-38	0-89
1907	{ 3rd class . . . . .	..	..	..	2-08	1-32	0-76
	{ All classes together . . . . .	..	..	..	2-25	1-32	0-93
1910	{ 3rd class	} ..			Amalgamated with Madras Railway.		
	{ All classes together						

APPENDIX VI.

Goods Traffic, (average rate, average cost and average profit.)

	EAST INDIAN.			GREAT INDIAN PENINSULA.			BOMBAY, BARODA AND CENTRAL INDIA.			MADRAS.			
	Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	
	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	
1871 .	{ 1st or Lowest class . . . . .	..	..	..	10	..	..	10	..	..	{ 8 12	{	
	{ All classes together	9-92	3-248	6-672	12-72	7-76	4-96	12	8	4	11-6	5-36	6-24
1873 .	{ 1st or Lowest class	9	3-412	5-588	10	7-824	2-176	10	7-632	2-368	12	5-424	6-576
	{ All classes together	8-416	3-412	5-004	{ 1a-0-896 or 12-806	7-824	5-072	{ 1a-0-264 or 12-264	7-632	4-632	9-864	5-424	4-44
1875 .	{ 1st or Lowest class	9-073	3-468	5-605	10	5-206	4-704	10	4-848	5-152	12	7-232	4-768
	{ All classes together	8-62	3-468	5-152	11-984	5-206	6-688	11-04	4-848	6-192	9-552	7-232	2-32
1877 .	{ 1st or Lowest class	9-073	1-744	7-329	10	3-96	6-04	10	3-16	6-84	10	4-744	5-256
	{ All classes together	6-536	1-744	4-792	8-024	3-96	4-064	9-84	3-16	6-68	7-76	4-744	3-016
1879 .	{ 1st or Lowest class	9-073	1-856	7-217	10	4-656	5-344	10	3-536	6-464	10	5-064	4-936
	{ All classes together	6-784	1-856	4-928	8-704	4-656	4-048	8-816	3-536	5-28	8-48	5-064	3-416

Goods Traffic—contd.

	EAST INDIAN.			GREAT INDIAN PENINSULA.			BOMBAY, BARODA AND CENTRAL INDIA.			MADRAS.		
	Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.]
1882 .				10 pies up to 400 miles; 9½ between 400 & 600 miles 9 pies over 600 miles.								
{ 1st or Lowest class .	9-07	2-34	6-739		4-05	{ 5-95 5-45 4-95	{ 10-89	3-61	7-28	10	6-19	3-81
{ All classes together .	6-43	2-34	4-09	9-76	4-05	5-71	9-19	3-61	5-58	8-79	6-19	2-60
1884 .												
{ 1st or Lowest class .	9-07	2-46	6-613	9-07	4-01	5-08	{ 9 to 10	{ 4-02	{ 4-98 to 5-98	{ 10	6-43	4-67
{ All classes together .	6-32	2-46	3-86	8-15	4-01	4-14	8-7	4-02	4-68	7-72	5-43	2-29
1886 .												
{ 1st or Lowest class .	9-07	2-15	6-92	{ 10-00 9-50 9-00	{ 3-93	..	{ 10-89 and 9-53	{ 3-62	..	10-00	5-12	4-88
{ All classes together .	5-84	2-15	3-69	8-63	3-93	4-70	7-73	3-62	4-11	7-67	5-12	2-55
1888 .												
{ 1st or Lowest class .	8-98	2-04	6-94	{ 10-07 9-53 8-98	{ 3-87	..	10-89	3-53	7-36	10-07	4-96	5-11
{ All classes together .	5-68	2-04	3-64	8-22	3-87	4-35	7-82	3-58	4-29	7-81	4-96	2-66

1892	{ 1st or Lowest class	9-07	1-02	7-45	{ 10-8 9-58 9-07	3-93	..	10-89	3-41	7-48	10-08	4-52	5-56
	{ All classes together	5-34	1-02	3-72	8-15	3-93	4-22	7-75	3-41	4-34	8-30	4-52	3-78
1895	{ 1st or Lowest class	9-07	1-63	7-44	{ 10-08 9-53 9-07	4-39	..	10-89	3-00	7-89	10-08	4-43	5-65
	{ All classes together	4-87	1-03	3-24	8-57	4-39	4-18	7-86	3-00	4-86	8-40	4-43	3-97
1898	{ 1st or Lowest class	9-07	1-56	7-51	{ 10-07 9-53 9-07	3-57	..	10-89	3-22	7-67	10-07	4-32	5-75
	{ All classes together	4-62	1-56	3-06	7-06	3-57	3-49	7-54	3-22	4-32	8-35	4-32	4-03
1901	{ 1st or Lowest class	..	1-65	..	..	3-15	..	..	3-06	..	..	3-41	..
	{ All classes together	4-30	1-65	2-74	6-89	3-15	3-74	7-18	3-06	4-12	5-95	3-41	2-54
1904	{ 1st or Lowest class	..	1-41	..	..	2-97	..	..	3-15	..	..	4-13	..
	{ All classes together	4-04	1-41	2-63	6-32	2-97	3-35	7-59	3-15	4-44	6-57	4-13	2-44
1907	{ 1st or Lowest class	..	1-55	..	..	2-98	..	..	2-50	..	..	4-75	..
	{ All classes together	3-76	1-55	2-21	5-84	2-98	2-91	5-89	2-50	3-39	6-63	4-75	1-88
1910	{ 1st or Lowest class	..	1-37	..	..	2-69	..	..	2-96	..	..	3-71	..
	{ All classes together	3-31	1-37	1-94	5-12	2-69	2-43	6-83	2-90	3-87	6-12	2-71	2-41
1913	{ 1st or Lowest class	..	1-32	..	..	2-71	..	..	2-70	..	..	3-48	..
	{ All classes together	3-18	1-32	1-86	4-75	2-71	2-04	6-13	2-70	3-43	5-96	3-43	2-48
1915	{ 1st or Lowest class	..	1-22	2-51	2-52	3-05	..
	{ All classes together	2-85	1-22	1-63	4-48	2-51	1-97	5-76	2-52	3-24	5-57	3-05	2-52

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APPENDIX.

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Goods Traffic—contd.

		SCINDE, PUNJAB AND DELHI.			EASTERN BENGAL.			OUDEH AND ROHILKHAND.			SOUTH INDIAN.		
		Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
		Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1871	{ 1st or Lowest class	10	..	..	9	..	..	7	..	..	12	..	..
	{ All classes together	..	..	..	..	..	..	9	..	..	..	..	..
1873	{ 1st or Lowest class	10	..	..	9	..	..	9	..	..	12	..	..
	{ All classes together	..	..	..	..	..	..	..	..	..	..	..	..
1875	{ 1st or Lowest class	9-07	4-888	4-182	9-33	5-616	3-714	9-08	..	..	12	..	..
	{ All classes together	9-76	4-888	4-872	9-888	5-616	4-272	..	..	..	..	..	..
1876	{ 1st or Lowest class	9-07	..	..	9-79	3-76	6-03	6-08	4-896	1-184	12	..	..
	{ All classes together	..	..	..	9-48	3-76	5-72	7-048	4-896	2-152	..	..	..
1877	{ 1st or Lowest class	9-07	3-976	5-094	8-99	2-886	6-104	6-8	3-12	3-68	12	4-72	7-28
	{ All classes together	8-48	3-976	4-504	9-2	2-886	6-374	5-72	3-12	2-6	(narrow gauge) 7-632	4-72	2-912
1879	{ 1st or Lowest class	9-07	4-4	4-67	8-46	3-56	4-90	6-8	3-256	3-544	12	..	..
	{ All classes together	9-184	4-4	4-784	10-32	3-56	6-76	6-32	3-256	3-064	..	..	..
1882	{ 1st or Lowest class	9-07	5-83	3-24	9-07	5-17	3-90	6-8	-99	5-81	9	6-95	2-05
	{ All classes together	8-32	5-83	2-49	9-38	5-17	4-21	5-41	-99	4-42	7-83	6-95	0-88

1884	{ 1st or Lowest class	9-07	4-31	4-76	9-07	6-26	2-81	6-8	3-92	2-88	9-07	6-35	2-72
	{ All classes together	6-74	4-31	2-43	8-56	6-26	2-30	5-	3-92	1-68	8-18	6-35	1-83
1886	{ 1st or Lowest class	9-07	3-57	5-50	9-07	5-86	3-21	6-80	3-07	3-73	9-07	6-21	2-86
	{ All classes together	6-44	57	2-87	8-83	5-86	2-97	4-62	3-07	1-55	7-53	6-21	1-32
1888	{ 1st or Lowest class	8-98	4-23	4-75	8-98	4-94	4-04	6-80	3-53	3-27	8-98	6-35	2-63
	{ All classes together	5-76	4-23	1-53	9-41	4-94	4-47	5-01	3-53	1-48	7-03	6-35	0-68
1892	{ 1st or Lowest class	9-07	3-38	5-69	9-07	3-77	5-30	9-07	2-95	6-12	9-07	5-79	3-28
	{ All classes together	5-88	3-38	2-50	8-22	3-77	4-45	5-89	2-95	2-04	7-38	5-79	1-59
1895	{ 1st or Lowest class	9-07	2-71	6-86	9-07	3-32	5-75	9-07	3-03	6-04	9-07	5-12	3-05
	{ All classes together	5-34	2-71	2-73	8-80	3-32	5-48	5-42	3-03	2-39	7-99	5-12	2-87
1898	{ 1st or Lowest class	9-07	2-63	6-44	9-07	3-11	5-96	9-07	3-07	6-00	9-07	4-78	4-29
	{ All classes together	5-27	2-63	2-84	7-88	3-11	4-77	5-70	3-07	2-63	8-60	4-78	3-82
1901	{ 1st or Lowest class	..	2-67	..	..	3-90	..	..	2-56	..	..	4-02	..
	{ All classes together	6-07	2-67	1-40	8-11	3-90	4-21	5-31	2-56	2-75	8-31	4-02	4-29
1904	{ 1st or Lowest class	..	2-23	..	..	4-00	..	..	2-53	..	..	3-79	..
	{ All classes together	4-64	2-23	2-41	7-27	4-00	3-27	4-71	2-53	2-18	7-32	3-79	3-53
1907	{ 1st or Lowest class	..	2-25	..	..	4-25	..	..	3-35	..	..	4-16	..
	{ All classes together	4-42	2-25	2-17	6-99	4-25	2-74	5-04	3-35	1-69	7-07	4-16	2-91
1910	{ 1st or Lowest class	..	3-06	..	..	3-83	..	..	2-61	..	..	4-00	..
	{ All classes together	4-80	3-06	1-74	6-62	3-83	2-79	4-85	2-61	2-24	6-80	4-00	2-80
1913	{ 1st or Lowest class	..	2-48	..	..	3-83	..	..	2-65	..	..	4-08	..
	{ All classes together	4-35	2-48	1-87	6-48	3-83	2-05	4-80	2-65	2-15	6-84	4-08	2-76
1915	{ 1st or Lowest class	..	2-53	4-04	2-60	2-87	..
	{ All classes together	4-20	2-53	1-67	6-59	4-04	2-55	4-92	2-60	2-32	6-22	2-87	3-35

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Goods Traffic—contd.

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MONOGRAPH ON INDIAN RAILWAY RATES.

	BENGAL AND NORTH-WESTERN.			BENGAL NAGPUR.			ASSAM BENGAL.			BURMA.		
	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton of goods one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1886 . . . { 1st or Lowest class	9-07	3-47	5-60	..	..	..	..	..	..	12-27	5-78	6-49
{ All classes together	5-62	3-47	2-15	..	..	..	..	..	..	8-51	5-78	2-73
1888 . . . { 1st or Lowest class	3-98	3-57	5-41	10-07	4-42	5-65	..	..	..	12-25	5-63	6-62
{ All classes together	5-87	3-57	2-30	8-61	4-42	4-19	..	..	..	7-14	5-63	1-51
1892 . . . { 1st or Lowest class	9-07	2-46	6-61	9-07	3-92	5-15	..	..	..	12-25	5-31	6-94
{ All classes together	5-60	2-46	3-14	7-54	3-92	3-62	..	..	..	6-61	5-31	1-30
1895 . . . { 1st or Lowest class	9-07	2-93	6-14	9-07	3-55	5-52	..	..	..	9-07	5-49	3-58
{ All classes together	6-14	2-93	3-21	6-73	3-55	3-18	..	..	..	7-09	5-49	1-60
1898 . . . { 1st or Lowest class	9-07	2-42	6-65	9-07	3-11	5-96	9-07	6-38	2-69	9-07	4-85	4-22
{ All classes together	5-54	2-42	3-12	6-18	3-11	3-07	4-44	6-38	-1-94	6-95	4-85	2-10
1901 . . . { 1st or Lowest class	..	2-54	..	..	3-38	..	..	5-50	..	..	4-83	..
{ All classes together	5-43	2-54	2-89	5-45	3-38	2-07	6-04	5-50	0-54	7-04	4-83	2-21
1904 . . . { 1st or Lowest class	..	2-26	..	..	2-76	..	..	6-15	..	..	4-64	..
{ All classes together	5-53	2-26	3-27	5-11	2-76	2-35	5-48	6-15	-0-67	7-37	4-64	2-73
1907 . . . { 1st or Lowest class	..	2-34	..	..	2-26	..	..	4-87	..	..	4-59	..
{ All classes together	5-48	2-34	3-14	4-93	2-26	2-67	5-07	4-87	0-20	6-43	4-59	1-84
1910 . . . { 1st or Lowest class	..	2-27	..	..	1-91	..	..	4-29	..	..	4-36	..
{ All classes together	5-39	2-27	3-12	3-63	1-91	1-72	4-41	4-29	0-12	6-33	4-36	1-97
1913 . . . { 1st or Lowest class	..	2-15	..	..	1-81	..	..	4-11	..	..	4-00	..
{ All classes together	5-46	2-15	3-31	3-70	1-81	1-89	5-23	4-11	1-12	6-69	4-00	2-69
1915 . . . { 1st or Lowest class	..	2-25	..	..	1-59	..	..	4-69	..	..	4-07	..
{ All classes together	5-57	2-25	3-32	3-27	1-59	1-68	5-35	4-69	0-66	6-54	4-07	2-47

Goods Traffic—contd.

			INDIAN MIDLAND.			SOUTHERN MAHRATTA.		
			Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.	Average sum received for carrying one ton one mile.	Average cost of carrying one ton of goods one mile.	Average profit in carrying one ton of goods one mile.
			Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1888	{ 1st or Lowest class		8-98	6-13	2-85	9-25	6-62	2-63
	{ All classes together		8-22	6-13	2-09	7-86	6-62	1-24
1892	{ 1st or Lowest class		9-07	4-47	4-60	9-07	6-02	3-05
	{ All classes together		6-63	4-47	2-16	7-96	6-02	1-94
1895	{ 1st or Lowest class		9-07	4-69	4-38	9-07	4-56	4-51
	{ All classes together		7-15	4-69	2-46	6-95	4-56	2-39
1898	{ 1st or Lowest class		9-07	3-66	5-41	9-07]	4-77	4-80
	{ All classes together		6-20	3-66	2-54	6-50	4-77	1-73
1901	{ 1st or Lowest class . . . . .		..	..	..	..	5-05	..
	{ All classes together . . . . .		..	..	..	6-93	5-05	1-85
1904	{ 1st or Lowest class . . . . .		..	..	..	..	4-52	..
	{ All classes together . . . . .		..	..	..	6-71	4-52	2-19
1907	{ 1st or Lowest class . . . . .		..	..	..	..	3-91	..
	{ All classes together . . . . .		..	..	..	6-35	3-91	2-44

APPENDIX VII.

Names of Railways.	1	2	3	4	5	6	7
	Mileage open at the end of each year.	Total capital outlay, including suspense to end of each year, i.e., outlay on (i) lines open or (ii) lines partly or wholly under construction.	Gross earnings.	Net earnings.	Percentage of net earnings on total capital outlay given in column (2).	Earnings per mile per week.	Proportion of expenses to earnings.
		1904.					
		Rs.	Rs.	Rs.		Rs.	
Bengal-Nagpur Railway (5' 6" gauge)	1,065-68	26,14,85,453	1,89,12,187	95,87,326	3-67	185	49-81
Bombay, Baroda and Central India Railway (3' 8½" gauge).	..	..	..	..	..	..	..
Eastern Bengal Railway (5' 6" gauge)	971-81	16,55,23,769	1,94,63,098	88,23,372	5-33	374	54-67
East Indian Railway (5' 6" gauge)	1,932-87	50,24,09,020	7,69,71,544	5,06,08,115	10-07	749	88-39
Great Indian Peninsula Railway (5' 6" gauge) .	1,561-68	32,00,72,108	4,82,41,344	2,41,79,728	7-55	592	49-88
Madras and Southern Mahratta Railway (5' 6" gauge)	..	..	..	..	..	..	..
North-Western Railway (proper) (5' 6" gauge) . .	8,317-54	55,14,60,717	6,16,58,310	3,22,92,900	5-86	361	47-60
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	425-33	2,29,48,454	27,47,442	13,18,772	5-74	124	52-00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,237-65	14,98,63,929	1,52,96,206	71,33,117	4-76	241	53-37
South Indian Railway (3' 8½" gauge)	1,123-13	8,45,16,652	1,25,12,321	69,62,790	8-24	214	44-35
Assam-Bengal Railway (3' 8½" gauge)	740-38	12,60,09,639	29,53,962	1,05,320	0-08	77	96-43
Bengal and North-Western Railway proper (3' 8½" gauge).	870-80	6,43,92,183	67,16,933	48,28,496	6-90	147	35-56
Bengal and North-Western Railway (Tirhoot Section) (3' 8½" gauge)	..	..	..	..	..	..	..
Rohilkund and Kumaon Railway proper (3' 8½" gauge)	53-92	43,55,575	4,18,787	2,24,403	5-15	122	46-41
Rohilkund and Kumaon Railway (Lucknow Bareilly branch) (3' 8½" gauge).	237-04	1,17,14,565	14,96,120	7,97,671	6-81	133	46-68

1906.							
Bengal-Nagpur Railway (5' 6" gauge)	1,986-50	28,49,48,582	2,09,47,181	1,41,51,252	4-97	259	47-49
Bombay, Baroda and Central India Railway (3' 6" gauge).	504-35	12,03,16,478	1,99,81,754	1,05,89,688	8-34	809	47-27
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,915-50	16,65,57,367	2,80,04,905	1,47,43,530	8-35	281	47-35
Eastern Bengal Railway (5' 6" gauge)	1,271-29	20,23,66,593	2,46,31,081	1,06,08,661	5-24	360	56-93
East Indian Railway (5' 6" gauge)	2,165-04	54,79,28,490	8,02,50,910	4,87,53,855*	8-90	721†	38-65
Great Indian Peninsula Railway (5' 6" gauge)	1,561-63	33,57,64,972	5,05,23,479	2,53,01,900	7-54	623	49-92
Madras and Southern Mahratta Railway (5' 6" gauge)	..	..	..	..	..	..	..
North-Western Railway (proper) (5' 6" gauge)	3,503-69	60,67,74,838	6,18,66,041	2,93,40,919	4-84	343	52-57
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	425-33	2,31,30,148	41,67,059	20,00,188	8-65	188	52-00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,292-16	15,71,99,731	1,64,67,329	78,15,731	4-97	249	52-54
South Indian Railway (3' 3½" gauge)	1,130-00	8,91,97,605	1,32,75,295	68,92,976	6-61	227	55-61
Assam Bengal Railway (3' 3½" gauge)	775-28	13,25,20,704	42,20,064	4,27,858	0-30	104	89-86
Bengal and North-Western Railway proper (3' 3½" gauge).	932-18	7,13,66,623	77,02,976	40,92,699	6-00	142	46-90
Bengal and North-Western Railway Tirhoot Section (3' 3½" gauge).	614-30	6,73,40,339	66,80,324	38,97,310	5-50	189	41-62
Rohilkund and Kumaon Railway proper (3' 3½" gauge)	117-87	1,16,53,319	8,03,607	3,65,161	3-13	124	54-56
Rohilkund and Kumaon Railway (Lucknow Bareilly Railway Section) (3' 3½" gauge).	237-04	1,20,09,653	16,55,250	8,36,782	6-97	148	49-46
1909.							
Bengal-Nagpur Railway (5' 6" gauge)	2,348-63	33,91,49,381	2,87,72,437	1,31,42,676	3-88	230	54-32
Bombay, Baroda and Central India Railway (5' 6" gauge).	504-35	14,18,09,493	2,21,36,727	1,17,56,514	8-29	844	46-89
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,919-72	18,04,84,544	2,51,98,999	1,08,98,636	6-04	252	56-75
Eastern Bengal Railway (5' 6" gauge)	1,503-09	24,27,44,601	2,77,24,064	97,10,666	4-00	355	64-97
East Indian Railway (5' 6" gauge)	2,212-07	60,27,01,643	8,28,35,189	*4,77,90,961†	7-93	†695	41-73
Great Indian Peninsula Railway (5' 6" gauge)	1,599-53	37,28,51,484	5,27,26,707	2,23,43,894	6-08	634	57-62

* Excludes the annual rental paid to the South Bihar Railway Company together with the interests on Government advances for the purposes of this Railway.
† Includes the South Bihar Railway.

Names of Railways.	1	2	3	4	5	6	7
	Mileage open at the end of each year.	Total capital outlay, including suspense to end of each year, i.e., outlay on (i) lines open and (ii) lines partly or wholly under construction.	Gross earnings.	Net earnings.	Percentage of the net earnings on total capital outlay given in column (2).	Earnings per mile per week.	Proportion of expenses to earnings.
1909—contd.							
		Rs.	Rs.	Rs.		Rs.	
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031.73	17,06,51,720	1,79,33,335	72,97,315	4.28	334	59.31
North-Western Railway (5' 6" gauge)	3,723.91	72,31,90,764	6,79,03,754	2,13,69,240	2.95	355	68.48
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge)	424.06	2,35,69,932	33,15,733	15,91,551	6.75	150	52.00
Oudh and Rohilkhand Railway (5' 6" gauge)	1,310.52	17,78,51,571	1,61,86,594	45,93,282	2.58	238	72.76
South Indian Railway (3' 3½" gauge)	1,305.61	15,57,78,715	2,17,41,647	1,01,90,046	6.54	300	53.13
Assam-Bengal Railway (3' 3½" gauge)	770.84	14,31,45,488	49,14,893	4,47,461	0.31	122	90.90
Bengal and North-Western Railway proper (3' 3½" gauge)	1,091.56	8,44,52,801	80,65,653	43,59,479	5.27	142	45.95
Bengal and North Western Railway (Tirhoot Section) (3' 3½" gauge)	774.69	7,42,61,067	75,53,873	40,09,582	5.28	188	46.92
Rohilkund and Kumaon Railway proper (3' 3½" gauge)	202.06	1,36,93,877	12,70,929	6,26,391	4.57	121	50.71
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3½" gauge)	237.04	1,43,82,316	17,17,491	7,84,749	5.46	139	54.31
1910.							
Bengal-Nagpur Railway (5' 6" gauge)	2,395.39	34,75,04,066	3,08,52,867	1,50,32,327	4.33	248	51.23
Bombay, Baroda and Central India Railway (5' 6" gauge)	504.35	14,32,24,042	2,40,62,075	1,24,94,573	8.72	917	48.07
Bombay, Baroda and Central India Railway (3' 3½" gauge)	1,019.64	18,18,63,774	2,85,10,644	1,44,84,804	7.96	286	49.20
Eastern Bengal Railway (5' 6" gauge)	1,507.73	25,55,91,026	2,83,74,563	1,16,08,257	4.58	366	58.77

East Indian Railway (5' 6" gauge)	2,212-77	60,82,23,218	8,60,42,147	5,20,01,256*	8-54	722†	39-01
Great Indian Peninsula Railway (5' 6" gauge)	1,606-24	38,67,82,534	5,88,44,731	2,58,06,771	6-67	705	56-14
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031-73	17,37,06,686	1,88,12,095	80,93,571	4-66	351	56-98
North-Western Railway (5' 6" gauge)	3,725-89	73,64,05,633	7,41,00,787	2,51,73,007	3-41	382	65-99
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424-06	2,39,18,571	43,21,320	20,74,234	8-67	196	52-00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge)	1,406-75	18,58,11,981	1,83,03,844	88,80,832	4-78	253	51-48
South Indian Railway (3' 3½" gauge)	1,395-61	16,08,95,627	2,24,59,591	1,02,34,257	6-36	309	54-43
Assam-Bengal Railway (3' 3½" gauge)	789-89	14,45,68,076	51,70,052	7,84,033	0-54	126	84-83
Bengal and North-Western Railway proper (3' 3½" gauge).	1,117-14	8,92,16,995	84,56,223	48,85,946	5-77	146	42-23
Bengal and North-Western Railway (Tirhoot Section) (3' 3½" gauge).	776-13	7,46,12,530	83,14,066	48,01,820	6-09	206	42-24
Rohilkund and Kumaon Railway proper (3' 3½" gauge)	202-06	1,52,28,920	13,46,150	7,62,425	5-00	128	43-36
Rohilkund and Kumaon Railway (Lucknow Bareilly Section) (3' 3½" gauge).	237-04	1,60,60,757	18,25,185	10,15,746	6-32	148	44-35
1911.							
Bengal-Nagpur Railway (5' 6" gauge)	2,488-02	35,59,06,842	3,30,70,044	1,68,21,823	4-73	262	50-48
Bombay, Baroda and Central India Railway (5' 6" gauge).	504-35	14,92,08,743	2,47,34,178	1,23,48,704	8-27	043	50-07
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,917-73	18,23,81,723	3,08,25,507	1,50,83,603	8-27	309	51-07
Eastern Bengal Railway (5' 6" gauge)	1,509-62	27,11,51,904	3,15,19,633	1,17,55,233	4-33	402	62-70
East Indian Railway (5' 6" gauge)	2,265-86	62,08,04,930	0,22,36,385	5,59,09,018*	9-00	756†	38-87
Great Indian Peninsula Railway (5' 6" gauge)	2,420-40	52,81,05,122	7,21,04,393	3,21,75,310	6-00	573	55-38
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031-73	17,73,67,663	1,06,36,910	89,15,549	5-03	366	54-60
North-Western Railway (5' 6" gauge)	3,818-22	75,46,44,149	7,93,87,066	3,12,64,435	4-15	402	60-61
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424-06	2,43,04,411	50,29,087	24,13,962	9-03	228	52-00
Oudh and Rohilkhand Railway (proper) (5' 6" gauge).	1,513-77	19,51,23,398	2,03,88,454	1,04,88,408	5-38	266	48-56
South Indian Railway (3' 3½" gauge)	1,395-61	16,28,91,154	2,49,91,786	1,24,16,673	7-62	344	50-32
Assam-Bengal Railway (3' 3½" gauge)	789-89	14,79,47,899	55,76,145	11,37,710	0-77	136	79-59

* Excludes the annual rental paid to the South Bihar Railway Company together with interest on Government advances for the purpose of this Railway.

Names of Railways.	1	2	3	4	5	6	7
	Mileage open at the end of each year.	Total capital outlay, including suspense to end of each year, i.e., outlay on (i) lines open and (ii) lines partly of wholly under construction.	Gross earnings.	Net earnings.	Percentage of net earnings on total capital outlay given in column (2).	Earnings per mile per week.	Proportion of expenses to earnings.
1911—contd.							
		Rs.	Rs.	Rs.		Rs.	
Bengal and North-Western Railway proper (3' 3½" gauge).	1,175-84	9,31,80,852	99,29,872	57,59,938	6-48	162	42-01
Bengal and North-Western Railway (Tirhoot Section) (3' 3½" gauge).	769-04	7,56,16,782	89,15,376	52,68,200	6-60	223	40-91
Rohilkund and Kumaon Railway proper (3' 3½" gauge)	225-20	1,59,24,548	14,73,586	7,98,809	5-02	128	45-72
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3½" gauge).	257-57	1,72,02,079	19,40,488	10,44,604	6-07	152	46-17
1912.							
Bengal-Nagpur Railway (5' 6" gauge)	2,489-92	36,36,14,944	4,02,62,849	2,18,48,526	6-01	311	45-74
Bombay, Baroda and Central India Railway (5' 6" gauge).	945-85	21,95,74,123	3,27,92,584	1,61,93,680	7-38	667	50-62
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,815-64	16,55,41,245	3,15,97,819	1,61,10,247	9-73	335	49-01
Eastern Bengal Railway (5' 6" gauge)	1,569-83	29,00,60,252	3,43,33,589	1,39,40,687	4-81	429	59-49
East Indian Railway (5' 6" gauge)	2,331-09	63,49,50,982	10,15,50,003	6,32,20,565*	9-96	810†	37-27†
Great Indian Peninsula Railway (5' 6" gauge)	2,419-33	54,83,41,956	8,02,93,465	3,69,34,275	6-74	638	54-00
Madras and Southern Mahratta Railway (proper) (5' 6" gauge).	1,031-73	17,80,88,139	2,16,88,462	1,03,95,264	5-84	404	52-07
North-Western Railway (proper) (5' 6" gauge)	3,812-29	78,05,55,336	9,06,27,413	4,37,15,957	5-60	466	51-76
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424-06	2,47,35,830	58,22,883	28,23,784	11-41	267	52-00

Oudh and Rohilkhand Railway (5' 6" gauge)	1,604-14	20,17,91,276	2,45,19,400	1,39,76,826	6-92	294	43-00
South Indian Railway (proper) (3' 3½" gauge)	1,395-61	17,08,55,986	2,70,84,141	1,81,63,987	7-73	337	51-39
Assam Bengal Railway (3' 3½" gauge)	804-99	15,04,29,093	64,50,146	17,29,637	1-15	155	73-18
Bengal and North-Western Railway (proper) (3' 3½" gauge).	1,177-27	9,68,79,261	1,12,49,175	78,19,499	7-91	184	34-93
Bengal and North-Western Railway (Tirhoot Section) (3' 3½" gauge).	791-51	7,82,44,847	98,30,665	64,73,034	7-83	239	34-15
Rohilkund and Kumaon Railway (proper) (3' 3½" gauge).	256-32	1,62,89,858	18,99,670	11,51,784	7-07	144	39-37
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3½" gauge).	296-32	1,83,53,912	22,67,846	13,67,532	7-45	157	39-70
1913-14.							
Bengal-Nagpur Railway (5' 6" gauge)	2,073-32	38,74,52,167	4,20,59,348	2,15,05,714	5-55	303	48-87
Bombay, Baroda and Central India Railway (5' 6" gauge).	996-23	23,56,10,283	3,60,65,069	1,83,83,393	7-80	721	49-03
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,815-64	16,78,56,869	2,98,50,716	1,47,44,027	8-78	316	50-61
Eastern Bengal Railway (5' 6" gauge)	1,581-43	32,69,88,602	3,75,42,065	1,66,52,046	5-09	460	55-64
East Indian Railway (5' 6" gauge)	2,424-20	66,70,44,170	10,26,92,332	6,13,38,002†	9-20	789†	30-31‡
Great Indian Peninsula Railway (proper) (5' 6" gauge)	2,484-03	59,49,23,530	8,57,95,516	3,40,52,063	5-72	664	60-31
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031-73	18,26,82,343	2,26,70,849	1,04,31,713	5-71	423	53-99
North-Western Railway (proper) (5' 6" gauge)	4,011-62	83,24,56,549	8,67,13,050	3,67,40,434	4-41	423	57-63
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424-06	2,56,22,112	57,93,323	27,80,795	10-85	263	52-00
Oudh and Rohilkund Railway (5' 6" gauge)	1,638-33	21,64,74,673	2,41,23,950	1,23,21,631	5-09	283	48-92
South Indian Railway (3' 3½" gauge)	1,453-60	18,26,41,473	2,80,70,002	1,17,27,795	6-42	373	53-22
Assam Bengal Railway (3' 3½" gauge)	811-73	15,70,22,667	70,42,793	22,71,129	1-45	167	67-75
Bengal and North-Western Railway (proper) (3' 3½" gauge).	1,240-12	9,89,54,245	1,06,80,308	63,85,474	6-87	166	40-21
Bengal and North-Western Railway (Tirhoot Section) (3' 3½" gauge).	788-16	8,07,86,397	1,02,64,997	64,76,739	7-50	250	36-90
Rohilkund and Kumaon Railway (proper) (3' 3½" gauge).	256-32	1,07,73,664	18,84,583	10,57,653	6-30	141	43-38
Rohilkund and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3½" gauge).	298-02	1,91,90,007	22,50,319	12,45,837	6-49	148	44-64

* Excludes the annual rental paid to the South Bihar Railway Company together with interest on Government advances for the purposes of this Railway.
† Includes the South Bihar Railway.
‡ 1913-14. Includes the Cawnpore-Banda Railway.

Names of Railways.	1	2	3	4	5	6	7
	Mileage open at the end of each year.	Total capital outlay, including suspense to, end of each year, i.e., outlay on (i) lines open and (ii) lines partly or wholly under construction.	Gross earnings.	Net earnings.	Percentage of net earnings on total capital outlay given in column (2).	Earnings per mile per week.	Proportion of expences to earnings.
		1914-15.					
		Rs.	Rs.	Rs.		Rs.	
Bengal-Nagpur Railway (5' 6" gauge)	2,070-82	40,20,55,383	4,10,00,804	2,03,23,627	5-05	205	50-43
Bombay, Baroda and Central India Railway (5' 6" gauge).	996-30	24,41,08,233	3,41,76,399	1,65,02,921	6-76	660	51-71
Bombay, Baroda and Central India Railway (3' 3½" gauge).	1,815-64	17,10,31,361	2,36,44,574	1,32,97,462	7-77	303	53-58
Eastern Bengal Railway (5' 6" gauge)	1,630-05	35,01,65,002	3,32,49,234	1,14,97,734	3-28	401	65-42
East Indian Railway (5' 6" gauge)	2,445-63	70,52,95,287	10,35,97,327	6,25,79,018*	8-87	796†	38-16†
Great Indian Peninsula Railway (proper) 5' 6" gauge)	2,499-64	62,57,62,657	7,71,55,244	2,86,16,825	4-57	593	62-91
Madras and Southern Mahratta Railway (5' 6" gauge)	1,031-73	18,59,51,863	2,33,73,105	1,10,00,466	5-92	436	52-04
North-Western Railway (proper) (5' 6" gauge) . . .	410-48	85,87,48,950	8,17,13,591	3,05,18,372	3-55	319	62-65
North-Western Railway (Southern Punjab Railway Section) (5' 6" gauge).	424-06	2,62,48,269	52,97,182	25,42,648	9-69	240	52-00
Oudh and Rohilkhand Railway (5' 6" gauge) . . .	1,682-00	22,15,79,383	2,08,24,033	91,22,888	4-12	238	56-71
South Indian Railway (3' 3½" gauge)	1,455-17	18,75,61,932	2,72,73,211	1,15,22,805	6-14	359	57-75
Assam Bengal Railway (3' 3½" gauge)	847-98	16,24,85,226	68,85,473	17,31,408	1-07	156	74-85
Bengal and North-Western Railway (proper) (3' 3½" gauge).	1,238-67	9,91,40,377	1,08,71,200	65,71,263	6-95	169	39-55
Bengal and North-Western Railway (Tirhoot Section) (3' 3½" gauge).	788-45	8,17,15,012	95,03,765	58,14,830	6-72	232	38-82
Rohilkhand and Kumaon Railway (proper) (3' 3½" gauge).	256-32	1,69,38,847	15,58,479	7,39,623	4-37	117	52-54
Rohilkhand and Kumaon Railway (Lucknow-Bareilly Railway Section) (3' 3½" gauge).	312-51	2,02,30,297	19,40,856	8,79,923	4-35	119	54-66

* Excludes the annual rental paid to the South Bihar Railway Company together with the interests on Government advances for the purposes of this Railway.

† Includes the South Bihar Railway.

APPENDIX VIII.

DIFFERENCE BETWEEN OWNER'S RISK AND RAILWAY RISK RATES FOR GOODS TRAFFIC.

The question of responsibility of railways in the matter of goods booked at owner's risk affects the trade very considerably. When the railways are protected by risk notes, the merchants have to take risks and yet in some cases, they cannot help taking advantage of the lowest rates, for generally the lowest rates are the trade rates introduced by the railways to develop the traffic, and when such rates are quoted the railway risk rates are higher.

In some cases the difference is 100 per cent., for instance in the case of ghee, while the railway risk rate for distances of over 150 miles is $\frac{3}{4}$ rd pie per maund per mile, the owner's risk rate is $\frac{1}{3}$ rd pie per maund per mile. It has been said by some that if the railways did not want to compel the traders to take the advantage of the owner's risk rates, they would make the difference between the railway risk rates and owner's risk rates such as would enable the merchants to take advantage of an alternative rate, *i.e.*, the railway risk rate should not be so high as would be unprofitable to the trader if he wanted to take advantage of it.

In this connection one cannot do better than to quote the following remarks from the article which appeared in the "Empire" on 20th July 1911 and 3rd August 1911, in connection with the report of the Departmental Committee of the Board of Trade on agreements and amalgamations, under the signature of Mr. R. D. Mehta, C.I.E.

"I have now received a copy of the above report, which has recently been issued and submitted to both Houses of Parliament by command of His Majesty. It may be truly said that this report hardly affects Indian Railways, but I find that some of the opinions expressed by the members of the committee are identical with those expressed by me in certain of my articles on the subject of "Railway Rates," and it will, therefore, be interesting to the public to know that the grounds of my complaints are reasonable and they require to be remedied.

"Owner's risk rates."—In my article No. II which appeared on the 29th March 1911, it was observed that difference between the Railway risk and owner's risk rates was too high in some cases. I cited an instance, where the railway risk rate was 120 per cent. greater than the owner's risk rate, and although the railways had what they call an alternative railway risk rate it was not "a reasonable alternative rate" in that it could not possibly be availed of by the public with any chance of profit in business. In my article No. II, I asked "can any merchant avail himself of this Railway risk rate, with any chance of

profit, and would the Railway Company get any traffic if the merchants were to avail themselves of the Railway risk rate and the lower owner's risk rate was not used?" I suggested that the railway risk rate should not be higher than the owner's risk rate by more than 4 or 5 per cent. Now it may be interesting to the public to know what persons like Mr. Russel Rea, M. P., Lord Hamilton of Delzell, C.V.O., Lord Newton, Mr. James Samuel Beale, and other members of the Departmental Committee of the Board of Trade have got to say in the matter of owner's risk rates. They remark in their report as follows:—

"It seems to us, however, that it is not in the public interest that railway companies should in fact be in a position to put undue pressure on traders to accept liability for loss or injury on traffic arising from their neglect."

"These remarks appear to have been made as the committee find that the railway risk rates are practically not "commercially reasonable alternative rates." They go on to say that "under the present interpretation of the law, however, it seems that any alternative companies risk rate, which is within the maximum, would be held to be a reasonable alternative even though it involved the payment of amount for insurance by the traders which was greatly in excess of the actuarial value of the risk so that the alternative rate was not commercially reasonable alternative."

"The Committee further go on to show that in the classification the owner's risk rates are at 10 per cent., 15 per cent. and 20 per cent. below the company's risk rates but that there are a number of special rates at owner's risk as regards which owner's risk is only one of the considerations on which special rate was granted. It is further remarked upon by the committee "that in such cases the owner's risk rate may be as much as 30 or 40 per cent. below the rate at which the railway companies "carry at their risk" and these differences are apparently not considered reasonable as the members of the committee recognise that "the situation seems to constitute a legitimate grievance on the part of those traders, who are affected by it" and they recommend that "the difference in charge between the owner's and railway risk rates should be such as is reasonably sufficient to cover the risk of the company." I wonder what the members of the said committee would think when they know that on Indian Railways there are differences of 100 per cent. and more between the railway risk and owner's risk rates often to be seen. Every one knows that this year there has been a short crop of mangoes and instances have been brought to my notice, where owing to delays in transit fruits got rotten, and the merchants did not get a pie from the railways in the way of compensation for their loss, with the result that they tried to make up at least a part of their loss by increasing the price of mangoes, which were already selling dear. The railway authorities generally reply in such cases that they regret there has been a loss to the merchants owing to delay in transit

but that as the goods were booked at owner's risk rates the railway cannot accept any liability. The railway risk rate for mangoes is 3rd class ($\frac{2}{3}$ rd pie per maund per mile) and the owner's risk rate for a wagon load is 1st class ($\frac{1}{3}$ rd pie per maund per mile) and the difference between the two rates is 100 per cent. "so that the railways practically compel the traders to despatch their goods at owner's risk rates." The poor merchants know that it is useless to appeal to railways as no claim for compensation would be admitted and hence they remain quiet and they as well as the public suffer."

"The dealers in fresh fruits in this country are entirely at the mercy of the railways, but as the loss to the fruit dealers affects the public so very immediately and greatly it is desirable that something should be done to bring home to the railways that the traffic booked at owner's risk should be as carefully dealt with as any other traffic. Of course, the railways would say that the remedy lies in fruits being booked at railway risk rates, but I have already pointed out that for fruits the "so called alternative railway risk rates" both by passenger and goods trains are one hundred per cent. higher than the owner's risk rates. It seems, however, that the loss in fruit traffic carried by railways is becoming so frequent that the dealers might eventually be compelled to despatch traffic at considerably higher rates than at present paid, in order to get the railways to deal with the traffic more carefully and to accept the risk. The result will be that fruits which are already dear, will be sold dearer still and the consumers will suffer. As a case in point, I would mention that a consignment of mangoes arrived at Sealdah from Malda, but the wagon containing it is said to have *gone astray in the railway yard*. When the wagon was found and the mangoes were unloaded and offered to the poor waiting and anxious merchant for delivery the fruits were found to have gone entirely rotten and had to be thrown away. The Traffic Superintendent, Eastern Bengal State Railway, to whom the matter was represented, replied to the merchant as follows in his letter No. C. G. 89-64-11 of 31st July 1911 :—

"I regret very much that the delay complained of should have resulted in a loss of the value of the mangoes. As, however, the goods were carried at owner's risk, in consideration of the lesser rate of freight charged, I am unable to entertain your claim for compensation on account of your loss."

"The loss to the merchant in this case amounted to over Rs. 350 and the mere expression of regret on the part of the Traffic Superintendent, Eastern Bengal State Railway, is a very poor consolation to him. To a petty fruit dealer such a loss means complete loss of capital and consequent ruin. Is it right that the merchants forwarding their goods by railways should be ruined in this manner. I have been further informed that when a railway has to pay any claim to a merchant on account of loss sustained by

him in respect of goods booked at "railway risk" the railway recovers a portion of the amount of the compensation paid from their staff, but that in the case of goods booked at "owner's risk" no such recoveries are made from the staff as no compensation is paid. Therefore, the railway staff naturally do not pay as much attention to goods booked at owner's risk as to those booked at railway risk. They also know very well that fruits and ghee are always booked at owner's risk. Pilferages from tins of ghee and baskets of fruits and delays to fruit traffic are often heard. I have already shown in my letter XV that even the differences of 10 to 40 per cent. between the railway risk and owner's risk rates have been considered unfair in England and it has been recognised by the members of the Board of Trade Departmental Committee in England that the traders have a "legitimate grievance" against railways in this respect, and steps are being taken to remedy the evil by providing that the alternative railway risk rates should be "Commercially reasonable alternative rates" and similar steps should be taken in India as early as possible. In America, the fruit traffic is given special treatment and is carried as "fast freight," every care being taken that the fruit wagons are pushed on as expeditiously as possible; with this facility offered by the railways in the way of quick transit combined with safety, and under fostering railway rates the fruit traffic in America has assumed very large proportions. It is true that some railways in India have quoted wagon rates for fruits but this alone will have no effect in developing the fruit traffic, and until the fruit dealers are in the fear of running the risk of losing all their money in fruit trade any day through the negligence of the railway staff any great development in trade in fruits can hardly be expected. The railways in their own interests ought to offer protection to the public, as any appreciable development in the trade in fruits must mean more money to railways and it will soon be seen that large sums will be invested in fruit gardens and a flourishing trade will be created to the great advantage of the people of the country."

On page 96 of the said Bengal Nagpur Railway Tariff there is an entry of a rate of Re. 0-9-11 for grain, pulses and seeds common from Gondia to Bombay *via* Nagpur. The foot note at the bottom of this page shows that in respect of rice this rate is an owner's risk rate. The Bengal Nagpur Railway proportion of this rate is Re. 0-2-11 per maund for a distance of 81 miles from Gondia to Nagpur. Now the maximum rate which the Bengal Nagpur Railway are authorised to charge over this distance is Re. 0-2-11 per maund, ($\frac{1}{3}$ rd pie per maund per mile plus 8 pies terminal). Therefore the maximum rate and the owner's risk rate are the same. It is difficult to understand what the alternative railway risk rate is in this case; apparently none, unless it is a higher rate than the maximum. But this is not a solitary instance. The Bengal Nagpur Railway proportions of the rates to Bombay on rice from other important despatching stations, such as Rajnandgaon and

Raipur, are Re. 0-4-9 and Re. 0-5-11 respectively for distances of 146 and 188 miles. These are also maximum rates, plus exceptional terminals.

The Great Indian Peninsula Railway, on page 32 of the Goods Tariff Book No. II (in force from October 1916), have a rate of Re. 0-9-4 per maund from Jhansi to Bombay, which is an owner's risk rate for Rice; and at the same time this rate is qualified by the remark, "no other rates will apply."

It is seen from the Great Indian Peninsula Railway Goods Tariff Book No. II, No. 5 (in force from October 1916) that they quote a rate of Re. 0-8-10 for sugar at railway risk, irrespective of the condition as to wagon load from Bombay to Jubbulpore, to encourage the traffic in imported sugar. This rate on a distance of 616 miles works out to .17 pie per maund per mile. But in the same tariff apparently for country sugar, the rate from Delhi to Jubbulpore, for sugar carried in wagon loads of 270 maunds is Re. 0-10-7, which works out to .20 pie per maund per mile for a distance of 646 miles, and the rate is an owner's risk rate.

APPENDIX IX.

TERMINALS.

Terminals are levied in addition to the rates.

While the term "rate" represents the charge for carriage between two specific points, "terminals" include "charges in respect of stations, sidings, wharves, depôts, warehouses, cranes and other similar matters and of any services rendered thereat". This is the definition provided for in the Indian Railways Act IX of 1890.

Railways levy "crane charges" and loading and unloading charges, in respect of goods in bulk or bulky goods, in addition to "terminals". In such cases the "terminals" are intended to cover services other than loading and unloading.

In the case of Laljibhai *versus* Great Indian Peninsula Railway (16 Bombay 434) it was held that "terminals" "mean a charge for the use of goods stations and for the various duties a Railway Company, as common carriers, perform in connection with goods, consigned to them for carriage."

Terminals are permissive and a railway has the right to waive them, at its option, but in doing so, the railways are supposed to see that they do not create "undue preference" by levying a terminal in one case and not levying in another.

In a case of dispute between an user of a railway and a railway company as to whether a terminal charge is reasonable or not, the Governor General in Council may, if he thinks fit, refer the case to Railway Commissioners to be appointed for purposes of hearing and deciding the specific case.

A list of terminals levied by railways is given in the following pages.

Great Indian Peninsula Railway.—Terminals and short distance charges.

(1) *In local booking from all stations (except to or from Bombay or Dadar), terminal of 4 pies per maund for the forwarding station, and 4 pies for the receiving station.*

(2) *In local booking to or from Bombay or Dadar, terminal of 6 pies per maund for Bombay or Dadar, and 4 pies for the other station.*

(3) *In through booking including to or from Bombay or Dadar, terminal of 6 pies per maund for the Great Indian Peninsula Railway, except in the case of cross traffic.*

(4) *When the distance over the Great Indian Peninsula Railway is less than 75 miles, except in the case of cross traffic, short distance charge of 3 pies per maund subject to the differential rule as to distance, in addition to the terminals specified in (1), (2), or (3) above. If however,*

the terminals and the short distance charge aggregate more than 12 pies only 12 pies are charged.

Tolls.

The following tolls are charged on all traffic except where otherwise stated, and are levied in addition to the terminals and short distance charge specified above :—

	Pies per maund.	Rupees per wagon.
(1) To or from Colaba, except on traffic between Colaba and Cawnpore and <i>via</i> , Agra and <i>via</i> Khandwa and <i>via</i> Amalner and <i>via</i> , stations Agra Cantonment to Delhi (both inclusive) and <i>via</i> —	2	2
(2) From Chandni Bandar	2	2

Bombay, Baroda and Central India Railway.—Terminal charges.

- (1) On Bombay, Baroda and Central India Railway and other Branch lines except Rajpipla State Railway :—

	Pies per maund.
In local booking	6
In through booking	3 to 6

- (2) On Rajpipla State Railway :—

In local booking	} <i>via</i> Anklesvar	{	6
In through booking				6

On cross traffic passing through junctions to and from foreign railways no terminal charge is levied.

- (a) In the case of goods carried at wagon rates, except where otherwise stated, the terminal charge for distance under 75 miles is Rs. 2-0-0 per broad gauge 4-wheeled wagon and Rs. 1-4-0 per metre or narrow gauge 4-wheeled wagon, the differential rule as to distance to apply.

- (b) For the following commodities, however, the terminal charge is levied as under :—

- (1) On broad and metre gauge sections—

	Per 4-wheeled wagon.
	Rs. A. P.
Bamboos, bamboo chips, and firewood—	
On broad gauge section—	
For distances under 75 miles	2 0 0
On metre gauge section—	
For distances under 100 miles	2 0 0
Charcoal—	
For distances under 75 miles	2 0 0
Kuppas—	
(1) For distances under 75 miles	4 0 0
(2) For distances 75 miles and over	2 0 0
Rafters and timber—	
On broad gauge section—	
(1) For distances under 75 miles	4 0 0
(2) For distances 75 up to 100 miles	2 0 0

NOTE.—In booking between broad and metre gauge sections of the Bombay, Baroda and Central India Railway the terminal charge in the case of goods carried at wagon rates will be made according to the wagon used at the forwarding station, irrespective of the number of wagons used at the Tranship Junction station.

(2) On narrow gauge railways—

	Rs. A. P.
On bamboos, bamboo chips, charcoal, firewood, grass dry, and hay, rafters and timber.—	
Per broad gauge 4-wheeled wagon—	
In booking from Bombay, Baroda and Central India Railway and <i>vid.</i>	2 0 0*
Per narrow gauge 4-wheeled wagon—	
In other cases	1 4 0
On Kuppas	2 0 0

* Irrespective of the number of Narrow Gauge wagons used.

(c) Bogie vehicles will be charged at double and six-wheelers at one and a half times the rates for four-wheelers.

Short distance terminal charge.

1. A short distance charge of 3 pies per maund (in addition to the ordinary terminal charge), is made on all goods conveyed for distances under 75 miles on the Bombay, Baroda and Central India Railway Company's system; the differential rule as to distance to apply.

2. The short distance terminal charge will not apply to:—

- (1) Rice and paddy.
- (2) Cinders.
- (3) Coal, coke and patent fuel, except in local booking.
- (4) Coal ashes carried by contractors and charged at 0·13 pie per maund per mile.
- (5) Foreign railway materials.
- (6) Live stock.
- (7) Military traffic.
- (8) Mineral class goods chargeable at schedule rate H or at other schedule rates.

Toll charge.

On all goods booked to and from Carnac Bridge station in Bombay, extra charges noted below with certain exceptions will be made:—

(1) In the case of maund rates	Pies per maund.	2
	Per 4-wheeled broad gauge truck.	
(2) In the case of wagon—mile rates	Rs.	2

Transshipment charge.

A transshipment charge of 2 pies per maund is levied on traffic interchanged at Cawnpore Collectorgunge between the Great Indian Peninsula Railway, including Cawnpore-Khairada Section and the Bombay, Baroda and Central India Railway.

In through booking between the Oudh and Rohilkhand Railway and the Bombay, Baroda and Central India Railway *viâ* Cawnpore Collectorgunge, a transshipment charge of 2 pies per maund is levied on traffic booked to and from stations Cawnpore to Parkham, including the Brindaban and Brahmavart Branches, *viâ* Hathras Road, *viâ* Kasganj, and *viâ* Farukhabad.

North Western Railway.—Terminal charges.

	Pics per maund.
Local traffic—	
Upon all consignments of 2nd, 3rd, 4th, 5th and X class goods	6
Upon 1st class goods and goods chargeable at rates lower than 1st class	3
Through traffic—	
Upon goods of all classes	3
Cross traffic—	
Passing through junctions with foreign railways	No terminal.

Oudh and Rohilkhand Railway.—Terminal charges, (from tariff of 31st January 1914).

The following terminal and short distance charges are made on all classes of goods carried over the Oudh and Rohilkhand Railway, and the Hardwar-Dehra Railway, except where otherwise specified:—

1. Terminal charges (irrespective of distance)—

	Over Oudh and Rohilkhand Railway.	Over Hardwar- Dehra Railway.
On goods charged at maundage rates	6 pies per maund on actual weight.	6 pies per maund on actual weight.
(b) On goods charged at wagon rates	Rs. 4 per 4-wheeled wagon and Rs. 8 per bogie wagon.	Rs. 4 per 4-wheeled wagon and Rs. 8 per bogie wagon.

II. Short distance charge, in addition to charges given in (1) above on traffic carried for distances under 75 miles, subject to the differential rule—

(a) On goods charged at maundage rates	3 pies per maund on actual weight.	No charge.
(b) On goods charged at wagon rates	Rs. 2 per wagon.	No charge.

Bones in wagon loads at maundage rates are subject to the charges under (I) (b) and (II) (b), instead of (I) (a) and (II) (a).

3. On goods booked from stations on the Hardwar-Dehra Railway to station on the Oudh and Rohilkhand Railway (but not beyond, *i.e.*, not to foreign Railways) and *vice versa*, only one terminal will be charged and that will be credited to the railway which books the traffic; but the short distance charge if due, will be levied separately in addition to the terminal charge and will be credited solely to the Oudh and Rohilkhand Railway.

4. The following reduced terminals, irrespective of distance, will be charged, on the articles noted below, when booked in wagon loads :—

Bricks, chakees, stone, lime, limestone, marble unwrought, stone of other kinds (not otherwise specified in the tariff), timber of all sorts, slates.

Marked carrying capacity of the wagon.	Over O. & R. Ry.	Over H.-D. Ry.
	Per wagon.	Per wagon.
	Rs. A. P.	Rs. A. P.
Not exceeding 11 tons	2 0 0	2 0 0
Exceeding 11 tons but not exceeding 17 tons	3 0 0	3 0 0
Four-wheeled wagons exceeding 17 tons	4 0 0	4 0 0
Bogie wagons	8 0 0	8 0 0

In booking from stations on the Hardwar-Dehra Railway to stations on the Oudh and Rohilkhand Railway or *vice versa*, only one terminal will be charged and will be divided between the Oudh and Rohilkhand Railway and Hardwar-Dehra Railway in equal proportions.

Oudh and Rohilkhand Railway short distance charge will not be levied in addition to the terminals, laid down in this sub-paragraph.

No terminal and short distance charges will be levied on consignments of bhoosa, bunkhas, firewood, fodder, forage, grass, hay, kirby, sirkee and straw, if the freight charges at the mileage rate is Rs. 10 and over per wagon. If the freight amounts to less than Rs. 10, the following terminal charge will be added, subject to the operation of the differential rule :—

Type of stock used.	Terminal charge.
	Per wagon.
	Rs. A. P.
A, B, C, D. and E.	2 0 0
F, G, H. and P	3 0 0

The terminal charge when levied on a consignment booked over the Hardwar-Dehra and Oudh and Rohilkhand Railways will be divided between the two Railways in equal proportions.

Exceptions.

5. No terminals and short distance charges will be levied in the following cases :—

- (1) Goods carried at local or through 'station to station' lump sum special rates.
- (2) Goods carried at the 'Reduced class rates'.
- (3) Cross traffic of the Oudh and Rohilkhand Railway.
- (4) Military traffic carried at military rates, coal, and railway materials.

- (5) Sugar booked from Unao to Cawnpore (Oudh and Rohilkhand Railway).
- (6) All traffic booked from and to Kashi and Benares Cantonment to and from Mogal Sarai and *viâ*.
- (7) All traffic between Shiupur and *viâ* Moghal Sarai.
- (8) Jaggree, at owner's risk, from Meerut City Mandi to Aligarh *viâ* Meerut City over Oudh and Rohilkhand Railway.
- (9) Kunkur, boulders, sand and stone or brick ballast. In case of consignments booked in wagon loads, charge will, however, be made, subject to a minimum charge of Rs. 4 per vehicle.
- (10) All first-class goods booked to and from Sambhal Hatim Sarai and Phul Singh Sirsi, whether charged at the classified rate or at schedule rate.
- (11) Grain and pulses and common seeds, booked from the following stations to Cawnpore (Oudh and Rohilkhand Railway) :—

Achalganj.	Dalmau.	Lechhmanpur.	Bhadri.
Bighanur.	Lalganj.	Unchahar.	Lalgopalganj.
Takia.	Jalalpur Dhari.	Pariawan.	Ramchaura Road.
Purwa Road.	Jamnapur.	Gotni.	Atrampur.
Raghuraj Singh.	Belakhara.	Atanagar.	

- (12) Bamboos, in wagon loads.
- (13) Sugar cane, in wagon loads.
- (14) Kuppas booked from Hapur and *viâ* to Meerut City and *viâ* Meerut City for Meerut City Mandi.
- (15) The following articles booked :—
 - (a) Locally between stations on the Oudh and Rohilkhand Railway.
 - (b) Locally between stations on the Hardwar-Dehra Railway.
 - (c) From the Oudh and Rohilkhand Railway stations to Hardwar-Dehra and Cawnpore-Khairada Railway stations and *vice versa* (but not when booked to and from foreign railways).

Ashes.	Hay, pressed	Lac, stick.
Bamboo.	Hemp, pressed	Moonj, pressed.
Bark, tanning	Iron ore.	Potatoes, at owner's risk.
Bran.	Iron or steel scrap.	Salt (all sorts).
Cinders.	Iron slag.	Saltpetre.
Earth (all sorts).	Jute, pressed	Sugar-cane, in wagon loads.
Gunny.	Lac, refuse.	

N.B.—North Western Railway Meerut City Mandi should be considered as a local station of the Oudh and Rohilkhand Railway for purposes of this para.

6. The terminal charge of 6 pies per maund mentioned above is not leviable in the following cases ; but the short distance charge of 3 pies per maund will be levied.

- (a) Grain and pulses and common seeds, salt, and kerosine oil flashing at and above 76° Fahr. at owner's risk, booked from Benares Cantonment and Kashi to Lohta.

- (b) Sawdust in wagon loads, from *viâ* Cawnpore (Oudh and Rohilkhand Railway) to Lucknow, only when booked from Jhansi.
- (c) Grain and pulses and common seeds, booked from Lalgopalganj to Allahabad.

7. The terminal charge on goods charged at wagon rates is not leviable on cinders and ashes, at owner's risk, in wagon loads, loaded and unloaded by owners, booked from Khan Alampura to *viâ* Saharanpur for Meerut City. The short distance charge of Rs. 2 per wagon will, however, be levied.

The following additional charges will be made on cross traffic of all descriptions of goods (except bone, coal and railway materials and stores), from or to metre gauge lines, passing Bareilly, Barabanki, Shahganj, Jaunpur City, Benares Cantonment, Lucknow or Moradabad Junctions :—

Description of goods.	Articles charged at maund rates.	Articles charged at wagon rates.
	Per maund. Pies	Per wagon. Rs. A. P.
(a) Goods carried 75 miles or less over the Oudh and Rohilkhand Railway.	3	2 0 0
(b) Goods carried over 75 miles over the Oudh and Rohilkhand Railway.		
Goods placed over the Oudh and Rohilkhand Railway—		
In class I	1	0 11 0
" II and III	2	1 5 0
" IV & V	3	2 0 0
" X	5	3 5 0

The above charge is not leviable on traffic to and from Badshahnagar and North-Western Railway Meerut City Mandi.

East Indian Railway.

	To Howrah.	To and from other than Howrah when carried under 75 miles.	When carried 75 miles and over.
(a) Grain and pulses, seeds common, salt, ballast.	<i>Nil.</i>	3 pies per maund subject to differential rule.	<i>Nil.</i>
(b) Mineral class goods	2 pies per maund.	3 pies per maund subject to differential rule.	<i>Nil.</i>

East Indian Railway—contd.

	To Howrah.	To and from other than Howrah when carried under 75 miles.	When carried 75 miles and over.
(c) Old special class goods . . .	5 pies per maund.	5 pies per maund subject to differential rule.	3 pies per maund.
(d) All other goods . . .	8 pies per maund.	9 pies per maund subject to differential rule.	6 pies per maund.
(e) All goods chargeable at wagon mile rate.	Rs. 4	Rs. 4 per wagon subject to differential rule.	Rs. 2 per wagon.
(f) Railway materials and stores. . .	2 pies per maund to and from Howrah locally.	Nil.	Nil.

For articles mentioned in (a), (b), (c), when booked between the following points special terminals are levied, *viz.*—

	Pies per maund.
When carried under 75 miles	9 (subject to differential rule).
When carried 75 miles and over	6
Cawnpore and <i>vid</i> and	Stations situated between Manauri and Firozabad both inclusive excluding Shikohabad-Farrukhabad Railway stations.
Jubbulpur and <i>vid</i> and	(a) Stations on the Jubbulpur line. (b) Stations between Gaipura and Kunwar both inclusive, excluding <i>vid</i> Allahabad and <i>vid</i> Allahabad City.
Katni and <i>vid</i> and	(a) Stations on the Jubbulpur line. (b) Stations situated between Jeonathpur and Kunwar both inclusive excluding <i>vid</i> Allahabad and <i>vid</i> Allahabad City.
Jamuna Bridge and <i>vid</i> Agra East Bank and	(a) Stations situated between Etawah and Kuberpur both inclusive. (b) Stations on the Shikohabad-Farrukhabad Railway. (c) Stations situated between Barhan and Khurja both inclusive but excluding Hathras junction and <i>vid</i> Aligarh. (d) Stations on the Khurja Hapur Railway excluding <i>vid</i> Hapur.
Farrukhabad and <i>vid</i> and	Stations on the Shikohabad-Farrukhabad Railway including Shikohabad itself.
Hathras junction and <i>vid</i> and	(a) Stations situated between Barhan and Khurja both inclusive excluding <i>vid</i> Aligarh. (b) Stations on the Khurja Hapur Railway excluding <i>vid</i> Hapur.

Hapur and <i>viâ</i> and	Stations on the Khurja Hapur Railway including Khurja itself.
Manikpur and <i>viâ</i> and	(a) Stations on the Jubbulpore Line. (b) Stations situated between Gaipura and Kunwar both inclusive, excluding <i>viâ</i> Allahabad and <i>viâ</i> Allahabad City.
Delhi, <i>viâ</i> Delhi and <i>viâ</i> Delhi Serai Rohilla in through booking with the Agra-Delhi Cord, S. P. B., and Bombay, Baroda and Central India Railway and	(a) Stations situated between Madrak and Delhi Shahdara both inclusive excluding Aligarh and <i>viâ</i> Ghaziabad. (b) Stations on the Khurja Hapur Railway excluding <i>viâ</i> Hapur.

No terminals are leviable on cross traffic but a charge of 3 pies per maund is made on cross traffic where there is a break of gauge.

Bengal Nagpur Railway, proper.

(a) *Local traffic.*—Upon all consignments of 1st, 2nd, 3rd, 4th, 5th and explosive or X class goods, a terminal charge of 16 pies per maund is added to the mileage rates.

(b) *Through traffic.*—Upon all consignments of 1st, 2nd, 3rd, 4th, 5th and explosive or X class goods, a terminal of 8 pies per maund is added to the mileage rates.

(c) *Short Distance terminal.*—Unless otherwise specified, a terminal charge of 3 pies per maund is made on all goods carried at schedule rates and on which no other terminals are levied when carried over the Bengal Nagpur Railway proper for distances under 75 miles, in local as well as in through booking except in the following cases :—

- (1) Coal, coke and patent fuel.
- (2) Railway materials and stores.

(d) *Special terminal charge on goods consigned to or from Shalimar.*—A special terminal charge of 2 pies per maund is made, except where otherwise specified, on all goods charged at station to station and maund schedule rates (including E. C. schedule rates) when booked to or from Shalimar ; when goods are booked at wagon schedule rates, the terminal charge is Rs. 3-0-0 per wagon irrespective of the actual weight in the wagon.

The Shalimar special terminal charge in case of articles charged at ton rates is Rs. 0-4-6 per ton.

Exceptions.—The above terminal is not levied in the following cases :—

- (1) Coal, coke and patent fuel.
- (2) Hides and skins booked to Shalimar and charged at the minimum wagon rates of 4 or 3 annas per mile.
- (3) Live stock.
- (4) Myrabolams crushed or with seed extracted.
- (5) Railway materials and stores.
- (6) On traffic booked *viâ* Shalimar.

(7) On traffic booked to or from Shalimar, from or to the following stations :—

- (a) All stations Asansol and *viâ* to Barahabhum.
- (b) All stations on the Purulia Lohardaga Branch.
- (c) All stations Kargali to Gomoh and *viâ* on the Talgaria Chord including stations on Bhojudih-Mohuda loop and stations on the Bokaro Ramgarh Extension.
- (d) Murulia and Chaurashi.
- (e) All stations Adra to Jhantipahari,
- (f) *Viâ* Katni and Katni Marwara and *viâ*.
- (g) *Viâ* Jubbulpur (*viâ* Gondia).
- (h) Howbagh-Jubbulpur (*viâ* Gondia).
- (i) Nagpur and *viâ*.

Garden Reach Terminals.

1. On goods booked to Garden Reach (Calcutta) the following terminals are charged :—

Goods carried at maund rates	Pies per maund.	6
„ „ wagon rates	Per wagon.	Rs. A. P.
		9 6 0
<i>Exceptions :—</i>		
(i) Lime and limestone to Garden Reach	Per ton.	Rs. A. P.
(ii) Stones, N. O. C., ballast ghooting unburnt, gravel, kunkur, moorum, sand and sandstone booked to Garden Reach (Calcutta)		0 7 0
(iii) Firewood booked in wagon loads to Garden Reach (Calcutta)	Per wagon.	4 11 0

2. The following are exempted from Garden Reach terminal :—

- (a) Lime from Bisra.
- (b) Live stock.
- (c) Charcoal booked from distances of 90 miles and over.
- (d) Firewood booked in wagon loads at owner's risk from Krishna—Chandrapur.
- (e) Railway materials and stores (excluding coal, coke and patent fuel, rolling stock, dangerous goods, specie and bullion) for the use of the Bengal Nagpur Railway and booked from Garden Reach to Shalimar and to stations on the Bengal Nagpur Railway.

Terminals over the East Coast Section.

1. The terminals on all goods, charged at maund rates, whether class or schedule, and irrespective of distance and weight are :—

In through booking	Pies per maund.	2
In local		4, i.e., 2 pies per maund at both the forwarding and receiving ends.

2. In the case of goods charged at wagon mile rates the terminals irrespective of distance are :—

	Per wagon.	
	Rs.	A. P.
Goods charged at wagon mile rates under schedule K.—		
In through booking	1	4 0
In local booking	2	8 0

Bengal and North-Western Railway.—Terminal charges.

(a) On the Bengal and North-Western Railway a terminal charge of 3 pies per maund is made in the case of the five ordinary and X classes.

(b) A terminal charge of 6 pies per maund is levied on all goods booked to or from Aishbagh, and *viâ* Daliganj and *viâ* and Cawnpore and *viâ* from or to stations on the link including Cawnpore (Collectorganj).

(c) A terminal charge of 3 pies per maund will be levied on goods charged at the special rates A to G in local booking over the Bengal and North-Western Railway for distances under 75 miles, subject to the differential rule, *i.e.*, the charge for distances under 75 miles must not exceed the charge for 75 miles without terminals; this does not apply to mineral class goods.

(d) A terminal of 6 pies per maund will be levied on grain and seeds and jaggree and mollasses at owner's risk and sugar from Jaunpur to Benares City and Benares Cantonment, and *vice versâ*.

(e) A terminal charge of 3 pies per maund will be levied on stone in full wagon loads at owner's risk when booked from Benares City to Jaunpur locally.

(f) A terminal charge of 6 pies per maund will be levied on all goods when booked from Cawnpore (Collectorganj) to Aishbagh, Lucknow City, Daliganj and Badshahnagar and *vice versâ*.

(g) The following terminal charges on goods charged at wagon rates as also on mineral class goods, timber and firewood, which are in force over the Oudh and Rohilkhand Railway are levied on goods booked to and from stations (*viz.*, Burhwal, Bindaura, Jahangirabad, Barabanki, Jugaur, Malhaur, Lucknow Junction, Amausi, Harauni, Jaitipur, Ajpgain, Sonik, Unao, Magarwara, Cawnpore (Oudh and Rohilkhand Railway), Cawnpore (Collectorganj), Chingigurh and Gwaltoli siding) to and from stations (*viz.*, Lucknow City, Aishbagh and *viâ*, Daliganj and *viâ*, and Badshahnagar) and *vice versâ* :—

	Per wagon.	
	Rs.	A. P.
(1) On goods charged at wagon rates for distances under 75 miles	2	0 0
(2) On the articles noted below when booked in wagon loads (irrespective of distance) for 4-wheeled wagon	2	0 0
On the articles noted below when booked in wagon loads (irrespective of distance) for 6-wheeled or bogie wagon	3	0 0

Articles :—

Kunkur, ballast, lime, stone, stone mills, stone, N. O. C., timber of all sorts, slates and firewood.

A terminal charge of Rs. 4 per 4-wheeled wagon in addition to the charge of Rs. 2 per wagon laid down above will be levied from stations Lucknow, Aishbagh and *viâ*, Daliganj and *viâ*, and Badshahnagar and *vice versâ* to stations on the Link. This charge will also be levied on lump sum rates for bark for tanning, charcoal, firewood, timber unwrought and kunkur.

Madras and Southern Mahratta Railway.—Terminal charges.

(a) Terminal charges on goods charged at maund rates :—

(i) *In local booking.*—On traffic booked between any two stations throughout the system, 6 pies per maund, *i.e.*, 3 pies at each end. But in the case of articles charged at maund schedules M and N, a terminal charge of Rs. 1-8-0 for each metre gauge 4-wheeled wagon and Rs. 3 for each broad gauge 4-wheeled wagon used is levied.

(ii) *In through booking.*—In through booking with foreign railways to or from any station on the Madras and Southern Mahratta Railway system, 3 pies per maund for the forwarding or receiving station, as the traffic may be outward or inward, respectively.

(b) Terminal charges on goods charged at wagon rates :—

In local booking as well as in through booking with foreign railways Rs. 1-8-0 for each metre gauge 4-wheeled wagon, and Rs. 3 for each broad gauge 4-wheeled wagon used. In the case of wagon schedule K rates the terminal charges to be levied is Rs. 1-4-0.

(c) Terminal charges on cross traffic :—

Terminal charges are not made on cross traffic.

(d) Terminal and short distance charges to and from Kolar Gold Fields and Sangli State Railways :—

Traffic to and from Kolar Gold Fields Railway and the Sangli State Railway is treated as foreign traffic for purposes of charging terminal and short distance charges.

(e) Terminal charges on goods booked to and from the out-agencies :—

On goods booked to or from the out-agencies on the Madras and Southern Mahratta Railway system, the same terminals as may be applicable to traffic to and from the railway stations serving the out-agencies are levied.

(f) Exemption from terminal charges :—

(i) Coal and coke are exempted from the terminal charges over the whole of the Madras and Southern Mahratta Railway system except in booking locally from Madras to any station on the Madras and Southern Mahratta Railway, but in the

case of traffic booked locally between Madras Harbour and other stations in Madras, viz., Salt Cotaurs, Rayapuram and Korukkuppettai, only one terminal, viz., 3 pies per maund is levied in addition to the freight charges ordinarily charged.

- (ii) Firewood in wagon loads booked locally for distances under 250 miles is not subject to terminal charges. *This rule applies also over the Kolar Gold Fields Railway locally and in booking with the Madras and Southern Mahratta Railway.*

Short distance charges.

On all goods traffic (live stock excepted) booked and carried for distances under 75 miles (subject to differential rule) over the Madras and Southern Mahratta Railway (with the exceptions noted below) a short distance charge of 3 pies per maund in the case of goods chargeable at Maund Rates except where otherwise stated, and of Rs. 2 per 4-wheeled metre gauge wagon and Rs. 4 per 4-wheeled broad gauge wagon in the case of goods chargeable at wagon rates is levied in addition to the ordinary mileage rates and terminals both in local booking and in through booking with foreign railways. In local booking, however, the wagon short distance charges referred to above are levied in the case of articles charged at maund schedules M and N only.

Exceptions.

(i) In booking locally between any two stations on the North East line (including Tenali-Repalle and Cocanada branches).

(ii) In the case of traffic booked to and from the stations on the West of India Portuguese, the Kolar Gold Fields, and the Sangli State Railways no short distance charge is leviable on these railways, but when the distance such traffic is carried over the Madras and Southern Maharatta Railway is less than 75 miles, the short distance charge laid down above is levied for the Madras and Southern Mahratta Railway only. No short distance charge is levied on traffic from Kolar Gold Fields Railway to South Indian Railway and *vice versa, via* Jalarpet.

(iii) The short distance charge is not levied on cross traffic nor is it added to the special station to station rates quoted in local and through booking.

(iv) The short distance charge is not levied in the following cases :—

(a) Coal.

(b) Kerosine oil in bulk originally received at Bangalore, Guntakal, Bezwada or Tadepalli, Katpadi, Gudur and Renigunta booked locally from Madras or Cocanada Port in broad gauge wagons and transferred at these junctions to metre gauge tank wagons and rebooked thence locally to metre gauge stations on this line situated under 75 miles, at ordinary class rates at owner's risk.

(c) Live stock.

Transshipment charge on coal.

A transshipment charge of one pie per maund (or annas 2-3 per ton) is levied for the Madras and Southern Mahratta Railway on all coal, coke and patent fuel booked *viâ* Hotgi and *viâ* Poona.

Terminal and other extra charges in the case of special lump sum rates.

All special lump sum maund and wagon rates, quoted from and to particular stations in Madras and Southern Mahratta Railway Goods Tariff, Part I, are inclusive of terminal and other extra charges, but where a maund mile or wagon mile rate is quoted, the terminal and other extra charges are to be levied in addition, unless it is specially noted that such charges are not to be made. *Terminal and other extra charges are levied on the same weight of goods on which freight charges are collected.*

South Indian Railway.—Terminal charges.

In local booking :—

4 pies per maund for forwarding station . . .	} Total 8 pies per maund
4 pies per maund for receiving station . . .	

In through booking :—

4 pies per maund for forwarding or receiving station as the case may be.

The terminal charge is levied on the same weight as that on which freight is charged, except where otherwise specified.

Terminals are not charged on cross traffic.

On grain and seeds, common, consigned locally over the metre gauge section, excluding Tirupattur-Krishnagiri, Morappur-Hosur and Shoranur-Cochin Railways, for distance not exceeding 50 miles, the following terminal charges will be levied :—

	Per maund.	
	At O. R.	At R. R.
	Rs. A. P.	Rs. A. P.
To certain Coast Port Stations :—		
For distances 1 to 25 miles . . .	0 0 3	0 0 8
„ „ 26 to 50 „ . . .	0 0 5	0 0 8
To stations other than Coast Ports :—		
For distances 1 to 50 miles . . .	0 0 3	0 0 8

The following commodity is exempt from terminals on the metre gauge section, excluding Tirupattur-Krishnagiri, Morappur-Hosur and Shoranur-Cochin Railways, when booked at the class rate in small consignments, or at special rates in wagon loads :—

Commodity	From	To
Salt	Cuddalore O. T. and Beach	Chidambaram, Porto- Novo, Panruti, Tirukoilur.
Bricks in wagon loads	{ Pallavaram . St. Thomas Mount } { Perambair	Madras (Beach) for the Harbour Works. Pondicherry, Madras (Egmore and Beach).
Firewood in H. S. trucks	Olakur	Pondicherry
Quarry rubbish in wagon loads O. R.	Pallavaram	Madras (Egmore and Beach).

The following commodities are exempted from terminals on the broad gauge section, including Shoranur-Cochin, Tirupattur-Krishnagiri and Morappur-Hosur Railways, when consigned in full wagon loads, subject to the following minimum weights per broad gauge wagon :—

	Maunds.
(a) Firewood for distance under 25 miles and over 81 miles	216
(b) Firewood between the following stations	216
	Maunds.
	From To
Chalakkudi	} Ernakulam.
Jrinjalakuda	
Pudukad	
Ollur	
Trichur	} Mangalora.
Kasaragod	
Kanhangad	
Nileshwar	
Azhikkal	} Calicut.
Azhikkal	
(c) Cotton loose, from Ingur to Coimbatore and from Coimbatore to Kallayi	90

A terminal charge of Rs. 3 per broad gauge wagon, charged at double the Schedule P, P-1, and P-2 rates for distances 25 miles and over up to 81 miles on the broad gauge section, except for traffic between the stations mentioned in clause (b) above, is to be levied extra.

Terminals on re-booked traffic.

In the case of re-booked traffic full terminals must be charged whether booked at O. R. or R. R.

When goods which are exempted from, or subject to, reduced terminals are re-booked to stations not exceeding 50 miles to avail of a cheaper rate by re-booking, a remark to that effect should be made on the re-booked invoices so that full terminals may be levied in such consignments.

Short distance charge.—A short distance charge of 3 pies per maund may be levied on all goods carried for distances under 75 miles over this railway in addition to the terminal charge.

A short distance charge of 3 pies per maund will be levied on ground-nuts from Kannammangalam, Kaniyambadi and Vellore Cantonment to *via* Katpadi (for traffic to Madras) and from Palur to *via* Arkonam (for traffic to Madras).

Eastern Bengal Railway.—Terminal charges.

1. Eastern Section :—

At—	Pies.
Calcutta or Chitpore (in upward booking only)	3
Lalgola Ghat	2
Kushtia	2
Goalando	2
Chitpore Ghat	1
Faridpur	2

2. (a) Northern and Behar Sections, including Katihar-Goadgari and Gauhati Extensions :—

At—	Pies.
Godagari	2
Manihari Ghat	3
Sara Ghat	2
Dhubri Ghat. In addition to this a ghat charge of 2 annas per maund is levied	2
(Amingaon. In addition to this a ghat charge of 1 anna per maund is levied in through booking with the Assam Steamer Service <i>via</i> Amingaon. In local booking from Amingaon to Chutiapara Bahata, Rangiya and Nalbari and <i>vice versa</i> a terminal charge of 6 pies per maund is levied in addition to the 2 pies charge quoted above)	1
Gauhati	3
All other stations	1

(b) In through booking *via* Manihari Ghat :—

At—	Pies.
Manihari Ghat	3
All other stations on the Northern and Behar sections including Katihar-Godagari and Gauhati Extensions	3

(c) In through booking *via* Fulchari and Bahadurabad :—

At—	Pies.
Fulchhari	2
Bahadurabad	2

3. Mymensingh Jagannathganj Railway and Dacca section including the Singhjani-Fulchari Extension :—

(a) Except in through booking with Calcutta steamer ghat by the direct steamer service *via* Sunderbans :—

	As. P.
(1) Between any two stations on the Dacca Section (except Narayanganj and <i>via</i>)	0 3
(2) Between any two stations on the Singhjani Fulchari Extension and <i>via</i>	0 3
(3) Between any two stations on the Mymensingh Jagannathganj Railway (except Jagannathganj) and <i>via</i>	0 3
(4) Between any station on the Dacca section, (except Narayanganj) and <i>via</i> , and any station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and <i>via</i> , or any station on the Singhjani Fulchhari Extension and <i>via</i>	0 6
	2 B

	As. p.
(5) Between any station on the Singhjani Fulchhari Extension and <i>vid</i> and any station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and <i>vid</i>	0 6
(6) Between Narayanganj (not <i>vid</i> Narayanganj) and any other station on the Dacca section and <i>vid</i>	0 9
(7) Between Narayanganj (not <i>vid</i> Narayanganj) and any Station on the Mymensingh Jagannathganj Railway (except Jagannathganj) and <i>vid</i> or any other station on the Singhjani Fulchhari Extension and <i>vid</i>	1 0
(8) Between Narayanganj (not <i>vid</i> Narayanganj) and Jagannathganj (not <i>vid</i> Jagannathganj)	2 0
(9) Between <i>vid</i> Narayanganj and any station on the Dacca section and <i>vid</i>	0 3
(10) Between <i>vid</i> Narayanganj and any station on the Mymensingh Jagannathganj railway (except Jagannathganj) and <i>vid</i> , or any station on the Singhjani Fulchhari extension and <i>vid</i>	0 6
(11) Between <i>vid</i> Narayanganj and Jagannathganj (not <i>vid</i> Jagannathganj)	1 6
(12) Between Jagannathganj (not <i>vid</i> Jagannathganj) and any other station on the Mymensingh Jagannathganj railway and <i>vid</i>	1 0
(13) Between Jagannathganj (not <i>vid</i> Jagannathganj) and any station on the Dacca section and <i>vid</i> (except Narayanganj and <i>vid</i>) or any station on the Singhjani Fulchhari extension and <i>vid</i>	1 0
(14) Between <i>vid</i> Jagannathganj and any other station on the Mymensingh Jagannathganj railway and <i>vid</i>	0 3
(15) Between <i>vid</i> Jagannathganj and any station on the Dacca section (except Narayanganj) and <i>vid</i> , or any station on the Singhjani Fulchhari extension and <i>vid</i>	0 6
(16) Between <i>vid</i> Jagannathganj and Narayanganj	1 0

(b) In through booking with Calcutta Steamer Ghats by the Direct

• Steamer Service *vid* Sunderbans :—

	As. p.
(1) Between <i>vid</i> Narayanganj and any station on the Dacca Section, Mymensingh-Jagannathganj railway (except Jagannathganj) and Singhjani Fulchhari Extension	1 0
(2) Between <i>vid</i> Jagannathganj and any station on the Mymensingh Jagannathganj Railway or any station on the Dacca section on the Singhjani Fulchhari Extension	1 0
(3) Between <i>vid</i> Narayanganj and Jagannathganj	1 0
(4) Between Narayanganj and <i>vid</i> Jagannathganj	2 0

4. Southern Section :—

At—	Pies.
Calcutta (Sealdah) or Chitpore	1
Mogra Hat	1
Netra	1
Deula	1
Basuldunga	1
Kalighat (outward)	1
Do. (inward)	4
Akra	1
Budge Budge	1

	Pies.
Sangrampur	1
Santoshpur	1
<i>vid</i> Dock Junctions for through booking with Bengal Nagpur Railway and connected railways	4
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5. Central Section :—

On 1st, 2nd, 3rd and 4'h class goods—2 pies at forwarding and 2 pies at receiving station :—

<i>Via</i> Calcutta and Chitpore	}	2 pies at one end only.
<i>Via</i> Dum Dum Junction		
<i>Via</i> Ranaghat		
<i>Via</i> Khoolna		

On 5th and X class goods—4 pies at forwarding and 4 pies at receiving station.—

<i>Via</i> Calcutta and Chitpore	}	4 pies at one end only.
<i>Via</i> Dum Dum Junction		
<i>Via</i> Ranaghat		
<i>Via</i> Khoolna		

6. List of articles on which special terminal charges are leviable.

(1) Fodder and forage not being military traffic.—

	Pies.
At Calcutta in upward booking	3
Do. downward booking	1½
At any other points	2

(2) Food grains, seeds and pulses, carried at special reduced or owner's risk rates on the Eastern Section :—

	Pies.
Between any two stations on the Eastern Section	3
<i>Exceptions.</i> —When booked through to or from stations on the Northern and Behar sections, including Katihar Godagari and Gauhati Extensions <i>via</i> Bhairamara or Lalgola Ghat	4

(3) Jute over Dacca Section, Mymensingh Jagannathganj railway and Singhjani Fulchari Extension :—

In local booking between any two stations on each of the above sections, in booking between one section and another and in through booking with Calcutta steamer ghats by the Direct Steamer Service <i>via</i> Sunderbans	6
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(4) Salt carried at owner's risk rates :—

Between any two stations on the Eastern and Central Sections only	3
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7. The following articles are exempted from terminal charge :—

Coal, coke and patent fuel, Railway materials and stores.

8. The terminal charges are levied on the same weight as that on which freight is levied.

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INDIA

SHOWING RAILWAYS
Open and under construction on 31-3-18

Scale 1 Inch = 64 Miles or 1,035,040 Meters

REFERENCES.

3-6 Gauge, open	two or more lines	.....
Do. do. do. 3-5 1/2 Gauge mixed, open	double line	.....
1 1/2 do. do. do.	single line	.....
1 1/2 do. do. do. sanctioned or under construction	do.	.....
3-3 1/2 do. open	double line	.....
Do. do. do. do.	single line	.....
3-6 Gauge & 3-5 1/2 Gauge mixed, open	do.	.....
3-5 1/2 do. sanctioned or under construction	do.	.....
2-4 1/2 Gauge, open	do.	.....
3-5 1/2 Gauge & 2-4 1/2 Gauge mixed, open	do.	.....
2-4 1/2 Gauge sanctioned or under construction	do.	.....

Areas of the Native States directly under the Govt. of India under the Provincial Governments are shown in the same colour as the Province to which they pertain but with a yellow shading line.

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