

~~15/1/18~~

With best compliments of
Chandrabhawan

THE
INDIAN RAILWAYS:
THEIR HISTORICAL, ECONOMICAL AND ADMINISTRATIVE ASPECTS

BY

RAI SAHEB CHANDRIKA PRASADA TIWARI,
Retired Assistant Traffic Superintendent, B. B. & C. I. Railway,
President, All-India Railwaymen's Conference 1921.

~~6543~~

[All Rights Reserved.]

AJMER.

1921.

Price Rs. 10 net.

To be had from—

THE AUTHOR AT GANESHGANJ, AJMER, OR

THE MANAGER, SCOTTISH MISSION INDUSTRIES CO., LTD., AJMER.

X415. 2
F1

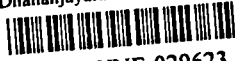
Printed by B. Mathura Prasad Shiwahare.

MANAGER,

VEDIC YANTRALAYA, AJMER (RAJPUTANA)

29623

Dhananjayrao Gadgil Library



GIPE-PUNE-029623

TO

THE SACRED MEMORY OF

ONE WHOSE

Kindly guidance and generous help in early years,

no tribute of mine can ever Repay—

MY LAMENTED COUSIN

Narayen Sewak Tiwari,

WHO DIED AT THE AGE OF 69 YEARS,
ON KARTIKA KRISHNA 5TH SAMVAT 1950 VIKRAM
AT RAWULPINDEE,

BY THE SAME AUTHOR.

—:0:—

1. The Bani of Swami Dadu Dayal, Founder of a Universal Religion in the Sixteenth Century. In Hindi, 1907. Rs. 5-8-0 net.

2. Agricultural Co-operation in Denmark and Hints for its Adoption in India, 1917. Rs. 5-8-0.

—

To be had from the Author at Ganeshganj, Ajmer,
or from The Manager, Scottish Mission
Industries Company Limited, Ajmer.

29623

Abstract of Contents.

	Page.
Preface ... ..	...
Corrigendum ... ..	...
Chapter I.—General.	
Section 1. —Progress in open lines	1
” 2. —Classification of Railways	4
” 3. —Railway Functions	11
” 4. —Chronological Order of Railways	18
” 5. —Working Administrations	20
” 5A.—Capital account of State Railways	24
” 6. —Importance of Railways	32
” 7. —Financial Results	35
” 8. —Economic Effects of Indian Railways	50
” 9. —Traffic in pre-rail days	63
” 10. —Public wants and complaints	71
Chapter II.—Railway Administration.	
Section 1. —Direction and Control	99
” 2. —Purchase of Stores	116
” 3. —Working and Management of Rys.	119
” 4. —Salaries of State Railway officials	127
” 5. —Strength of Railway Servants	132
” 6. —Recommendations of the Public Services Commission	135
” 7. —Industrial Commission and Railway workshops	174
” 8. —Need for Reorganisation	186
” 9. —Inequalities and their cure	195
Chapter III.—Old Guaranteed Companies.	
Section 1. —Introduction of railway in India, and Contracts of Railway Companies	205
” 2. —Capital Expenditure	216
” 3. —Evils of the Guarantee System	223
” 4. —General tendency of Companies	227

	Page
Section 5. —Loss by Exchange	229
„ 6. —Purchase of Guaranteed Railways	235
„ 7. —Financial Results	241
Chapter IV.—State Railways.	
Section 1. —Their Introduction	246
„ 2. —Provincial State Railways	258
„ 3. —Financial Policy of Government	259
„ 4. —Famine Insurance Fund	270
„ 5. —Financial Results	273
Chapter V.—Indian State Railways.	
Gaekwar's Railways	278
Khamgaon and Amraoti Railways	278
Nizam's State Railway	279, 283
Holkar and Sindia State Railways	280
Kathiawar Railways	285
Mysore State Railway	286
Palanpur Deesa State Railway	289
Treaty of Commerce with Portugal	290
Terms for working	291
Management	292
Appeal to the Princes	293
Chapter VI.—Reintroduction of Companies.	
Section 1.—Views of Government	296
„ 2.—Evidence Recorded by the Select Committee of 1884.	310
„ 3.—Financial Policy of Government 1880-1884	318
„ 4.—Recommendations of the Select Committee of 1884	326
„ 5.—Further Efforts of the Companies	334
„ 6.—New Companies formed	344
„ 7.—Indian Railway Finance	371
Chapter VII.—Rates and Fares.	
Section 1.—Early History	399

ABSTRACT OF CONTENTS.

iii

	Pages.
Section 2.—Passenger Fares	412
„ 3.—Goods Rates	433
„ 4.—Competition between Railways	459
„ 5.—Legislative Provisions	464
Chapter VIII.—State <i>versus</i> Company management	
Section 1.—Motions in the Council and Enquiries by Government	476
„ 2.—General Principles	493
„ 3.—Opinions of Experts	503
„ 4.—Experience gained in India	519
„ 5.—Experience gained in Europe	527
„ 6.—Conclusion	536
„ 7.—Recommendations of the Railway Com- mittee 1920-21	541-52

Appendices.

1.—Origin of Railway in England and conditions in pre-rail days	i
2 & 3.—Direct Financial Results from the old Guar- anteed Railways	xii
3a.—Total Loss borne by India on account of the Guaranteed Railways	xvi
4.—Purchase of old Guaranteed Railways	xx
5.—Account of Subsidized Companies	xxii
6.—Miscellaneous Railway Expenditure	xxvi
7.—Financial Results of State Railways	xxviii
8.—Charges borne by Indian Revenues on account of Railways from 1848-49 to 1919-20.	xxxii
9.—Progress in open lines of railways from 1853 to 1919-20	xl
10.—General Results of working of principal Railways for 1915-16	xlii
10.a.—Duty performed by Carriage and Wagon Stock in 1919-20	xliii.
11.—Average Profits from Passengers	xliv

	Page
12.—Average Profits from Goods traffic ...	xlviii.
13.—State Railway Officials and Subordinates in 1912	1
14.—Superior officers on Companies' and Indian State Railways 1912	li
15.—Diagram of Indian Railways	lxvi
16.—Railway Administrations and original names of railways in each administration	lii
17.—Classification of Indian Railways with their mileage and capital cost on 31st March 1918	lxvii
I.—State Railways worked by Government ...	lxix
II.—State Railways worked by Companies ...	lxx
III-V.—Branch line Companies' Railways ...	lxxiv
VI.—Companies' lines subsidized by Government	lxxviii
VII.—Companies subsidized by Local Govern- ments	lxxx
VIII.—Unassisted Companies' lines ...	lxxx
IX.—District Boards' lines	lxxxii
X.—Companies' lines subsidized by District Boards	lxxxiv
XI.—Indian State lines worked by States ...	lxxxvi
XII.— Ditto. worked by the main line ...	lxxxviii
XIII.—Companies' lines guaranteed by Indian States	xcvi
XIV.—Lines in foreign territory	xcviii
Index	ci-cxiv

Note.—Appendices II-XIV give dates of opening, Capital outlay, dividends earned, terms of contracts, working arrangements, etc., of each railway.

PREFACE.

THE subjects of Railway administration and Railway Economics are very large and will occupy a number of volumes of this size. I have written this book for the information of the Indian people, only touching briefly some of the elementary subjects and some of the matters which vitally affect the economic condition of the country at present. My object is to bring about a healthy reform in the administration of the Indian railways which are the largest and most vital among the national properties of the country. The book is especially interesting as it deals prominently with the question of State *versus* Company management, which has been occupying the public mind in India for more than a generation.

This is the first book of the kind, giving expression as it does, to the Indian view of the matter. It gives a very moderate account of Indian Railway economics, administration, finance and management including Rates and Fares, Constitution of the Companies, their working results, the economic effects they have produced, and the problems now facing the country.

In the Prefatory Note to his pamphlet on "Indian Railway Finance," 1912, the Hon'ble Sir Dinshaw Eduljee Wacha emphasized the "eminent necessity of a complete narrative of railway finance which shall inform us as to what the gain or loss there has been from year to year, with the causes which have led to it." The absence of such a book has been generally felt in India; it is hoped that that want will be fully met by this volume.

The financial narratives are supported by statistics giving the annual losses and gains to the State from different classes of the

Railways from 1848-49 to 1919-20, see appendices 2 to 8. These tables have been compiled for the first time and form an important record not easily obtainable.

The historical facts put together and compared with subsequent events in India and with corresponding practice of other countries, combined with the personal experience gained in the actual working, enable us to see the defects and draw-backs of the prevailing systems. With such lights, suggestions have been made for important reforms summarized at pages 538-40. Having fully discussed the matter of public wants, comforts and conveniences, requirements of trade, commerce and industries, efficiency of the service, and railway economics, I confidently hope that the book will meet the requirements of railway administrators as well as railwaymen, students of Indian economics, railway promoters, commercial men, leaders of political thought, investors of capital, members of the reformed Councils, and the public generally; while the Princes and officials of the Indian States will welcome it as a safe guide in organizing an economical administration for their own Railways.

Apart from the experience of actual working of railways, gained during an active service of over 37 years, on railways worked both by the Government and by one of the principal companies in India, I made a special study of the subject soon after the issue of the Report of the Select Committee of 1884. My first observations appeared in the first Hindi Daily—the late “*Hindusthan*” of Kalakankar, under the headings “Our Railways,” “Our Guaranteed Railways,” “Indian State Railways,” etc., during the years 1889 and 1890, under the distinguished Editorship of Pandit Madan Mohan Malaviya. I resumed the subject in 1915, when my contributions appeared in several Journals like the “*Leder*” of Allahabad, the “*Modern Review*” of Calcutta, the “*Servant of India*,” Poona, the “*Journal of the Indian Economic Society*,” Bombay.

It was intended to publish this book in 1919, and most of the Statistics previously compiled were revised in that year; but owing to unavoidable circumstances the narrative could not be completed till now. The facts and figures given herein are mostly for the period up to the year 1917-18, except where otherwise stated. In important places the figures for the two subsequent years have been added, making them complete for the whole period for which the accounts have been published by the Government of India.

It is difficult to give a continuous narrative of the State Railways, as many of them have been largely extended or amalgamated and their administrations have undergone important changes.

An effort has, however, been made to give the main epochs of the Railway History. The first epoch is narrated at pages 205-45, the second epoch from page 246, and the third epoch from page 331. But as the railways of one class overlapped the other classes and there were many changes and amalgamations among the individual lines or systems, it was not possible within the compass of this volume, to give a progressive account of individual lines.

Many of the railways, originally built and worked by the direct agency of the Government, have been subsequently leased to Companies; while several lines, taken over from the Companies, have been merged into the systems worked by the Government. These changes and interchanges have complicated the historical records and accounts of the individual lines.

Records for the old Guaranteed Companies' lines were, however, kept distinct for the whole period of their operations from 1848 to 1907. Their transactions, dealt with in Chapter III, form the worst record in the whole history.

The State-management, which followed the old Guaranteed Companies in 1869, did not have that chance which it deserved, as the best of the State Railways, after a successful working, were snatched away by the influential Companies from 1879 and

1885, leaving the unprofitable lines for the Government to manage. The accounts of *all* State Railways are, however, lumped together in the Finance and Revenue Accounts of the Government.

Moreover an accurate comparison of the different railways cannot well be made from the statistics alone, as the factors governing the costs of working differ considerably in the various parts of the country.

For these reasons I have not attempted to closely examine in detail the working results of the State railways entrusted to the Agency Companies. A comparison of some of the working results of the individual systems is, however, possible and may be useful ; but this would involve the compilation of elaborate statistics for each of the Companies' and the Government administrations for the whole period of over 66 years. Single-handed as I have worked, I could not possibly attempt that work. It is, however, hoped that such a comparison of the railway details may some day be completed by some energetic Railwaymen.

I had two main disadvantages to contend with. One with the language, which is not my mother tongue, and I have no pretension of having that command over the English language which is necessary to write an important book like this. But this difficulty could not be avoided, as English is the only medium between the people of the various provinces in India.

The second disadvantage is that I have not had at my disposal some of the material necessary for a complete history. In my humble way I have made an attempt to put together such facts and figures as I have come across and been able to collect. They cover most of the ground. There may, however, be some links missing. Readers will therefore make an allowance for these difficulties and will overlook any omission or inaccuracy in expression. Any errors pointed out to me will at once be noted for the next edition.

Railways are truly called the vital organs of industry and commerce and the very main-springs of material progress. If

properly worked and fully taken advantage of by the people, railways should transform the whole country; but unfortunately the people of India were not sufficiently educated to make full use of the railways for their benefit, and a good deal has been lost on that account. It is hoped, however, with the general enlightenment now spreading in the country and with the reforms suggested herein, the people of India will soon be able to make up for what they have lost in the past, and will take care to prevent any further losses in the future.

There are serious defects in the administrative machinery of the State Railways, resulting in losses both in costs and in the effects on general industries, trade and commerce of the country. Suggestions have therefore been put forward for a reorganisation of the whole system of administration and working, with special provision for a systematic training of railway officials and subordinates.—

- (1) To improve the status of the men and to ensure a maximum of efficiency with a minimum of labour and cost;
- (2) To utilize the railways to best advantage in supplying transportation and in mechanical training for Scientific Agriculture and manufacturing industries of all kinds, Chapter I, Section 8, and Chapter II-5.
- (3) To remodel the present system of working, so as to prevent the same work being done several times over, Chapter II-6.
- (4) To make retrenchments in the costs of working.

The agencies employed for the State Railways come under two heads, viz:—

- (1) Companies' administrations and
- (2) Government "

The main controversy is which of these two agencies is the better. The History of the Indian Railways is decidedly in favour of the Government agency and against that of companies, see Chapters II, III, VI and VIII. Wherever faults have been

found with the State-management, they are attributable to the system of government. As that system is being changed, the State-management under the reformed Councils will make headway and meet the public requirements satisfactorily. It is now recommended by the Railway Committee that this system will be adopted for all State railways as and when the existing contracts of the Companies fall in.

For nearly three quarters of a century the Railways in India have been exclusively under the direction and control of Englishmen. They have constructed a fine system of railways, based on the Socialistic principle of State ownership—a system in advance of the Company ownership still in force in England, but in many important respects they have ignored the requirements of the Indian people. To meet these requirements, the railways must be brought under the control of the people.

My best thanks are due to the administrative authorities of the Continental Railways for the courtesies shown to me during my travels over their lines in 1911 and 1914 and for the statistics they have been good enough to furnish me with. My thanks are also due to the Minister of the Japanese Government, to the Indian Railway Board, and the Financial Secretary to the Government of India for supplying me with certain publications.

It is far from my desire to cast reflections against any person. Deeply should I regret if a single expression of mine were found unfair or likely to wound just sensibilities.

My work is a labour of love in the Service of the Motherland. I have written it as a duty I owed to my fellow beings. My privilege is to work and the fruit belongs to Him, who rules the Universe. If the conditions under which millions of my country men and women are daily suffering, are remedied, my labours will be amply rewarded.

CHANDRIKA PRASADA TIWARI.

Ajmer, 26th September 1921.

P. S.—At pages 430 and 549, we have referred to average rates of passenger fares on the Japanese State Railways.

Since writing that we have received the Tariffs of those Railways. Their passenger fares as well as goods rates are on sliding scales. The ordinary 3rd class fares are calculated as follows:—

		Per mile.	
		Sen.	Pies.
For first 50 miles or under	...	2·5	equal to 7·200
„ 51 to 100 miles	...	2·1	„ 6·048
„ 101 to 200 „	...	1·7	„ 4·896
„ 201 to 300 „	...	1·4	„ 4·032
„ 301 to 400 „	...	1·2	„ 3·456
„ 401 to 500 „	...	1·1	„ 3·168
„ over 500 „	...	1·0	„ 2·880

They work out as under:—

	Rs.	a.	Pies per mile.
For 500 miles	11	9	4·435
„ 600 „	13	1	4·176
„ 700 „	14	9	3·991
„ 800 „	16	1	3·852
„ 900 „	17	9	3·744
„ 1,000 „	19	1	3·657

The second class ordinary passenger fares are twice, and the first class ordinary passenger fares are thrice, the 3rd class ordinary passenger fares.

A small extra charge is made for Express trains and for 1st class and 2nd class sleeping berths.

A reduction of 20 to 50 per cent. is made off 2nd and 3rd class fares for Schools and Colleges, for public meetings of corporations, etc., and of 10 to 60 per cent. for special and ordinary parties of 50 or more persons travelling together.

The goods tariff is very simple, occupying 79 pages of this size only, with Rules, Classification, and one general Rate List

for distances of 5 to 2,200 miles, for the five ordinary classes of goods. There are two sets of rates, one for small consignments, and the other for Car loads. For a haul of 1,000 miles, the Car load rates give the following charge per ton per mile :—

1st Class goods	8·8992	pies.
2nd „ „	6·6816	„
3rd „ „	5·2128	„
4th „ „	4·320	„
5th „ „	3·744	„

The following are the goods rates, per 100 *kin* of about 133 lbs. English, for smaller consignments, the last column giving the rate *per maund* for the *lowest class* :—

	1st Class.	2nd Class	3rd Class.	4th Class.	5th Class.	
					Sen per 100 kin.	Pies per maund.
For 100 Miles.	Sen. 70	Sen. 54	Sen. 43	Sen. 35		
„ 200 „	110	83	65	52	29	51
„ 300 „	143	108	84·5	67	42	75
„ 400 „	176	133	104	82	54	95
„ 500 „	206	156	122	95·5	66	118
„ 600 „	236	178	139	109	77	135
„ 700 „	266	201	157	123	88	155
„ 800 „	296	223	174	136	99	175
„ 900 „	324	244	190	149	110	196
„ 1000 „	352	265	206	161	120	213
„ 1300 „	436	328	254	199	130	231
„ 1600 „	520	391	302	236	160	285
„ 1900 „	604	454	350	274	190	337
„ 2200 „	688	517	398	311	220	392
					250	443

A Sen is equal to about 2·88 pies with exchange at 1s. 4d. per rupee.

11th October 1921.

C. P. T.

CORRIGENDUM.

Page.	Line	Incorrect.	Correct.
ii Preface	32	Leder	Leader.
7	15	Appendix 17	Appendix 16.
19	17	clause 4	clause 7.
24	20	Section 5	Section 5A
31	7	67,402,203	367,402,209.
42	14	go	goes.
43	Foot note.	Accounts No.	Account No.
44	19	periods	period.
135	9	land	laid.
137	31	recommendation	recommendation.
141	35	to the	to be,
148	8	qualification	qualification.
154	21	few and are	few and rare.
184	20	kind	kind.
292	11	cases	causes.
304	32	philanthropic	philanthropic.
"	34	principals	principles.
"	37	the avoid	to avoid.
299	5	Itatics	Italics.
316	16	such arduous	much arduous.
319	26	pressure.	pressure.
323	15	devolve.	Devolves.
327	29	Stch	such.
xliii	Heading	1920—21	1919-20.
391	10	160	1-60.
427	5	para. 435	page 435.
430	33	7. Average Coaching passengers per vehicle	7. Average number of passengers per vehicle.
434	17	3 pies to 3-61 pies	3 pies to 13-61 pies.
456	22	draw	drew.
473	14	belong	belonging.
490	34	Statutory	Statutory.
509	32	wite	with.
533	33	inconsiderable	in considerable.
79	15	Omit full-stop between "like" and "On," and change the capital O of "On."	
99	16	Insert semi-colon between "Railways" and "on."	
265	Foot notes	Exchange the star and dagger marks of the two foot-notes.	
xxviii	...	Delete "Rs." from columns 2 to 8.	
xxx	...	Ditto ditto ditto.	
xxxii	...	Ditto ditto 2 to 6.	
470	19 20	Transpose word "heard" from line 19 to line 20 between first and second words.	

APPENDIX 1.

ORIGIN OF RAILWAY IN ENGLAND.

THE story of the invention of the iron-road and of the Locomotive Steam Engine and the consequent development of the Railway system, with the wonderful changes, it has produced in the life of the people and conditions of the world, is of a deep interest to mankind. Before we give an account of the Indian Railways, it will be interesting to give a brief sketch of the early history of the rail-road and of the Locomotive in England and of the conditions which prevailed in that country before the advent of the Railway.

Prior to the invention of the railway in England, conditions in that country were much the same as in India, for human nature is much the same all over the world, although we find varying grades, styles, or forms of civilizations in different countries at the same or different times.

We take the following extracts from Volume I of "a History of the English Railway" by John Francis 1851, quoting its pages only from where the matter has been taken.

In the days of dark ages, roads in England were beset with danger and delay. Outlaws dwelling in forests, suddenly came on the traveller deprived him of his all and suddenly retreated with the booty they had won. Long journeys were necessarily performed on horse-back or by coaches which ran 20 miles a day. Markets were inaccessible for months together and fruits of the earth rotted in one place, while a few miles off the supply fell far short of the demand. Coal, manure and grain could only be carried on the backs of cattle (pages 2-5). The roads were also exceedingly tortuous. If the hill which crossed his path were

high, the passenger traversed its base; if the river were deep, he sought a shallower fording place; if the path were too rugged, he tried a longer but smoother passage. The travelling merchants . . . moved in company with their fellows. From town to town, through wood and through glade, they wandered in pleasant association, seeking in each other's society mutual aid and mutual protection. Pilgrims also availed themselves of the safety and society of the trader's convoy (pages 6-7).

Streets of London.—The kites, crows and other ravenous birds were the only scavengers of the busy streets. The traffic was comparatively so slight that the mud which collected in the uneven roads proved no inconvenience to shop-keepers. Holborn, the great artery of Modern Babylon, through which pours in quick succession one loud, busy, rattling stream of life and commerce, was not paved till the commencement of the fifteenth century (pages 7-8).

Some of the minor streets were scarcely passable. Narrow lanes, with hedges broken only here and there by a struggling house, were the primitive Wood-streets, Grays In-lanes, and Aldgate-streets of modern times: some would venture to traffic in them in the day but few would risk such perilous thoroughfares at night. Along such dangerous paths the traveller at night had to grope his way about town in total darkness, except he was near enough to be guided by the lanterns on the steeple of Bow Church, which served as the only land-mark to the bewildered stranger (pages 8-9).

London was a great myth to the villager. It was the place where kings reigned and ministers decreed justice, whence wars and rumours of war emanated. Queens died and new dynasties succeeded without the fathers of the village knowing or caring for the change. Their luxuries were from their own vineyard, and their own orchards; their necessities were the produce of their own farms. Their sons and daughters intermarried, children were

born to them, inheriting their prejudices along with their acres; and had it not been for the gradual improvement in the roads during the eighteenth and nineteenth centuries, the ignorance of the country would have remained unchanged, and the innocence of country life been still an article of faith (pages 12-13).

It was not until the sixteenth century that the roads of England were made the subject of legislative enactment. In the reign of Mary, it was decided that the various parishes should maintain their own roads. Surveyors were chosen, and by means of forced labour, the first step was taken in that fine system which has at once caused and increased the commerce of England (page 9).

In the seventeenth century, further but not very successful efforts were made to improve travelling, and the roads remained eminently bad. The charge of conveyance amounted in many instances to a prohibition (page 13).

Coal, even then, was rarely seen, save in the neighbourhood of the district which produced it. Pack-horses—strong, enduring animals, the breed of which is now extinct—were employed to carry the produce of the weaver's patient skill, the pottery of Staffordshire, and even the coals of New-Castle. Labouring along heavy roads, toiling beneath a burning sun, winding their way through bare, bleak moors, down steep descent, by dangerous rivers, on narrow tongues of land, between masses of mire and mud, so deep as to be dangerous if they entered (a leading horse bearing bells to intimate the approach of the party he heralded), the group formed a most picturesque accompaniment to the wild, weird scenes it enlivened. With such difficulties before them, few persons left their homes but those who were called by some most special reason. Travellers went in fear of their necks, dukes were obliged to walk in muddy roads; and the carriages of reigning princes were only saved from falling by their subjects' support (pages 13-15).

The serious difficulties which beset travelling produced stage coaches, and great was the innovation when in 1659, sanctioned by the doctors of the University of Oxford, the flying coach undertook to perform the journey from that place to London between the rising and the setting of the sun (page 15).*

In April 1706 a stage coach was established between London and York,† doing the single journey in four days. The journey to Cambridge about that period, and probably in a stage coach, was described by a passenger in the following terms:—

“I resolved, since the season of the year proved dry and pleasant to make a short journey to Cambridge. By the time I got to the place of starting, the country tub-driver began to be impatient, all the company, but myself, being already come, and had taken up their stations in the dirty, lumbering, wooden hovel, being more in shape like a tobacco hogs-head than a coach, belling out like the stern of a Dutch fly-boat, and was built more for burthen and the horses’ ease than to comode travellers. The rest of the company being most of them pretty burly, had made a shift to leave me a nook in the corner in the back part of the coach, not much wider than a chair for a jointed baby.” “In this tub drawn by half-a-dozen bony hacks,” the essayist proceeded, “stopping at Ware, twenty miles from London, to dine, and at Barley, thirty-seven miles off, to sup and sleep; from thence through Saffron Walden, at an ass’s gallop. (pages 17-18). He reached Cambridge, a place so abominably dirty that Old Street, in the Middle of a winter’s thaw, or Bartholomew fair after a shower of rain, could not have more occasion for a scavenger than the Miry Streets of this famous corporation, most of them so very narrow that should two wheelbarrows meet in their largest thoroughfare, they are obliged to stop half-an-hour before they can clear themselves of one another.”

* 77 Miles by L. & N. W. Ry., two hours journey by rail.

† Four hours journey by rail.

This was the mode of journeying by coach to and such was Cambridge about the beginning of the eighteenth century.

In 1712 a stage coach service was established between London and Edinburgh, passing Durham, New Castle and Berwick, with a fare of £4-10s. per passenger, the single journey taking 13 days (page 19).†

Highwaymen, another danger incidental to the infancy of locomotion, must not be passed over. Though night-fall saw the traveller duly housed, daylight was often no safeguard against the marauder. A crowded coach was a temptation to an Abershaw. Rash and daring, a bold and skilful horseman, it was no uncommon circumstance for the Claude Duval of the day to attack and rob, single-handed, a stage full of passengers. The arms of the riders were no alarm to him. The coachman stopped his cattle at his approach; the Postilion was often in his pay. He created tremor in the minds of all as they came near his reputed haunts. The gentleman thanked heaven if he escaped a visit on Finchley—common; the lady ejaculated her delight as she passed the confines of Hounslow; the wild heath which graces Shooter's hill was a terror to the traveller; and more fervent prayers were heard for safety on huge, desolate Salisbury-plain than were ever breathed in its fine cathedral" (page 26).

"Notwithstanding the establishment of turnpikes on roads in 1763," goes on the chronicler, "it is certain that by 1770 no great improvement had been effected. Language fails to describe the internal roads in Lancashire in that year . . . Ruts four feet deep, floating with mud, were common even in summer: being primitively mended by rolling in large loose stones, which jolted the carriage or broke the springs. It is noticeable that in 18 miles of execrable memory, a traveller passed three carts broken down through these and similar causes; and this was in that Lancashire which encouraged Watt, which enriched Arkwright, which gave the earliest important rail-road to the world, and

† 9. hours journey by Express train in 1911.

which is ever first and foremost in commercial enterprise (pages 27-28).

With the invention of Macadam in 1825 (page 29), the roads in England acquired that perfect condition in which they are found in that beautiful country in the modern days; but the unprecedented revolution in human affairs which is seen there now is not so much due to the improvements in the ordinary roads as to the introduction of the rail-roads, which the geniuses of England have brought about.

Necessity is the mother of invention. It was the requirements of the mining districts, which prompted the people to invent easy roads for the carriage of their mineral produce. Improvements were made gradually step by step. The heavy roads were made easy and smooth for carts by laying rails of timber, *i.e.*, by providing wooden tracks or tram-roads⁽¹⁾ between the years 1602 and 1676. The wooden tracks were replaced by iron-rails, first for the same cart traffic hauled by horses. Later on the steam engine was invented during the latter half of the eighteenth century. About the same time canals were provided for the carriage of goods by water. Among these canals, is the Manchester—Liverpool canal, the power for the construction of which was applied for by the Duke of Bridgewater in 1758 (page 34). About the year 1676 the Marquis of Worcester observed the expansive power of moisture rarified by heat; after many experiments he succeeded in constructing a rude steam engine, which he called a fire-water-work, and which he pronounced to be an admirable and most forcible instrument of propulsion. But the Marquis was suspected to be a madman and known to be a Papist; his invention therefore found no favourable reception (page 43).

(1) The timber wheel tracks obtained the name of trams or tramroads—supposed to have been a popular abbreviation of the name of a Mr. Outram who either originated or at an early date was extensively connected with their employment. Page 222 of "Ways and Works in India by C. W. MacGeorge 1894.

The revolution of 1688, which developed the resources of the English nation in a remarkable degree, was also indirectly the promoter of the rail-road. It gave an impulse to commerce and a security to property. The demand for the produce of the coal mines rendered quick transit important. By 1750 A.D., there was scarcely an important mine which had not its accompanying rail-road. It was tolerably certain that upto 1738 there was no other improvement in the tramroad than in the form or the quality of the wood. The iron way was not even thought of at the time (pages 44-45).

The precise origin of rail-roads is unknown, but the earliest approximation to the modern railway was the wooden tramroad. The first change was from the heavy road to the smooth tram, seeing that the rut of the common way rendered the work of the cattle easier, the people applied that principle to the reduction of labour, and took the initiative in the modern system of rail-roads. Acting on this inspiration, logs of wood, placed in a parallel line, bore the mineral product of the mine to its place of deposit. The idea, though simple was effective, as the horse which previous to this rude tramroad, could only draw 17 Cwts., was enabled after its formation to draw 42 Cwts., without extra fatigue. This change occurred between 1602 and 1649 or 1676. The manner of the carriage was by laying rails of timber, exactly straight and parallel, and bulky carts were made with four rowlets fitting these rails, whereby the carriage was so easy that one horse drew down 4 or 5 Chaldron of coals (pages 41-43).

In 1738 cast iron rails were first substituted for wooden ones, but owing to the old wagons continuing to be employed, which were too heavy for the cast iron, they did not completely succeed on the first attempt. However, about 1768, a simple contrivance was attempted, which was to make a number of smaller wagons and link them together, and, by thus diffusing the weight of one large wagon into many, the principal cause of the failure was removed, because the weight was more divided upon the iron (page 45).

The following description which evidently proves that wood was still in common use, was given of the wooden tramroad in 1765:— “When the road has been traced at six feet in breadth, and where the declivities are fixed, an excavation is made of the breadth of the said road, more or less deep according as the levelling of the road requires. There are afterwards arranged along the whole breadth of the excavation, pieces of Oakwood of the thickness of 4, 5, 6 and even 8 inches square, these are placed across and at the distance of two or three feet from each other; these pieces need only be squared at their extremities, and upon these are fixed other pieces of wood, well squared and sawed, of about 6 or 7 inches breadth, by 5 inches depth, with pegs of wood; these pieces are placed on each side of the road along its whole length; they are commonly placed at four feet distance from each other, which forms the interior breadth of the road” (page 46).

The first piece of wood, measuring six feet long by 4 to 8 inches square, served the purpose of modern sleeper, while the rails were made of 6 or 7 inches width and 5 inches depth, the interior of the road being 4 feet between the rails.

In 1765 the common rail-road was of wood, but from 1767 the idea of using iron rails was practically entertained. According to Robert Stephenson, cast iron rails were first made in the great iron works at Colebrook Dale in Shropshire and six tons of rails were cast there on the 13th November 1767 as an experiment. A claim to this novelty was made also by Curr, who said that the making and use of iron rail-roads were among his first inventions and were introduced into the Sheffield Colliery about the year 1776. (page 47).

By 1776 the discovery of steam had been variously applied, and reflective men were employed on that power which had been pioneered by Dr. Black's discovery of the power of latent heat, and which Watt rendered applicable by experiments which

attained an unintermitted supply of steam and a continuous rotary motion.

In 1759 he was engaged in forming an engine and in 1769 he expressly mentioned the possibility of applying the steam engine to domestic improvement. By 1787 the discovery had so far proceeded that Mr. Symington, who had claims to the invention of the steam-boat, exhibited the model of a steam carriage in Edinburgh, at the house of Mr. Gilbert Meason. In 1802 Mr. Trevithick took out a patent for an invention and brought into use a machine of this nature on the rail-road of Merthyr Tydvil in South Wales, and the first locomotive in England was then and there employed for a short time (pages 48—49).

The first locomotive therefore was first in use in 1804 on a Welsh Railway, drawing as many carriages as would contain ten tons of bar iron, at the rate of 5 miles an hour. The principle was perfect, the triumph was complete, a locomotive was in absolute work, and yet for years was the fallacy established in men's minds as fixedly as an article of faith that it could not draw heavy loads, that the adhesion of the smooth wheels of the carriage to the smooth rails of the iron must be so slight that though the wheels would move round, the carriage would not move with them. There was no doubt of this imaginary defect in the minds of scientific persons. Men published treatises, formed plans, made new discoveries, argued, wrote, pleaded and finally took out patents to overcome a difficulty which had no existence save in their own minds. Mr. Trevithick endeavoured to provide for it by certain projections in his wheels, Mr. Blenkinsop was granted a patent. One gentleman tried to form machinery which should imitate the action of the hind legs of a horse, while another was nearly successful in producing both the fore and hind legs, when in 1811 the important difficulty was partially overcome; and Mr. Blenkinsop of Middleton Colliery conveyed coals, by the aid of engines with toothed-wheels worked

into a tooth-rack. This plan was very objectionable but as it surmounted the fancied evil, great were the rejoicings. In only two years after, the evil itself was discovered to be a figment of the brain, and the efforts to overcome it a waste of time (pages 50—51).

To Mr. Blackett of Wylam Railway, the credit was due of destroying that theory. Being in possession of one of Trevithick's engines, he acted like a sensible man, formed another of greater power, similar to it, and then tested its capacity. To his delight he found that nature was not at fault but that, by virtue of one of her beautiful and unerring laws, the carriage actually moved rapidly along the road, however great the weight (pages 51—52).

Experiments were made in various places, the nature of the machinery was more perfectly comprehended; its operations were better understood. Constant experience suggested successive experiments, and on the Lillingworth railway, on 25th July 1814, with an engine constructed under the superintendence of George Stephenson, was the triumphant success of the principle proved, by a carriage moving on a slight ascent, drawing after it eight loaded carriages, all weighing 20 tons. The principal improvement made was the introduction of two cylinders instead of one, which acting at different portions of the wheels, produced a more regular motion and abolished a fly-wheel previously used. Lord Ravensworth was called a fool for advancing the money and Mr. Stephenson laughed at as a coxcomb, for attempting that which others in their superior wisdom declared impossible. Mr. Stephenson, however, declared that there was no limit to the speed of such an engine, provided the works could be made to stand. His first engine was named "My Lord" (pages 52-53).

The first railway opened for public traffic is the Liverpool-Manchester line, the first iron road on which the locomotive was used as the moving power for the carriage of passengers. Its

Engineer was Mr. Stephenson, its originator was Mr. Edward Pease (pages 53-54).

The first iron road was established in 1801 from Wandsworth to Croydon with a branch to Carshalton—about 9 miles in length. Upto 1825 there were 29 railways of short lengths with a total mileage of about 400 miles (pages 56-64).

In addition to the social advantages which accrued from increased communication, there were the development of commerce and the increased importance of the various places through which it passed. A new trade in lime arose; the price of coal fell from 18s. to 8s. 6d (page 56).

It is evident that the facilities of the tram-road were brought into use from the beginning of the seventeenth century; that the power of steam was known and applied in the eighteenth century and the iron road was commenced from about the middle of the latter century.

Each line diminished labour, increased profits and lowered prices.

Improvements in appliances have been continually made, enterprising men joined their capital together, money of the commercial man and the mind of the inventive genius were employed to produce the desired results. From the year 1830 every year and almost month, witnessed some improvement either in the road, in the carriages, the engines or safety appliances. Nor must it be imagined that a finality in railway improvements has even yet been achieved.

APPENDIX 2.

Direct Financial Results of the transactions connected with the old Guaranteed Railways in India from commencement to the year 1882-83 as per India Office Statement printed at page 706 of the Report of the Select Committee on Indian Railways of 1884, with 4 per cent. per annum simple interest.

Year.	Net Traffic Receipts.	CHARGES.			Net Charge (Cols. 5 minus 2.)	Simple interest at 4% per annum up to 31st March 1917 on column 6.	Number of years up to 31st March 1917.
		Interest on Capital, Surplus profits, Supervision, and cost of land.	Loss by Exchange on Capital transactions.	Total.			
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1848-49 ...	...	...	—1,22,485	—1,22,485	—1,22,485	—3,33,159	68
1849-50 ...	...	92,437	—1,66,122	—73,685	—73,685	—1,97,476	67
1850-51 ...	...	2,35,457	4,496	2,39,953	2,39,953	6,33,476	66
1851-52 ...	...	5,37,725	1,33,305	6,71,030	6,71,030	17,44,678	65
1852-53 ...	...	6,88,927	2,00,131	8,89,058	8,89,058	22,75,988	64
1853-54 ...	77,695	8,69,858	3,78,785	12,48,643	1,17,09,48	2,950,789	63
1854-55 ...	1,54,342	15,68,625	—3,34,722	12,33,903	1,07,95,61	26,77,311	62
1855-56 ...	6,52,658	36,62,464	12,47,768	49,10,232	4,25,75,74	1,03,88,480	61
1856-57 ...	12,68,520	60,43,560	16,25,140	76,68,700	6,40,01,80	1,53,60,432	60
1857-58 ...	16,39,658	72,43,770	22,89,948	95,33,718	7,89,40,60	1,86,29,982	59
					2,24,06,194		
1858-59 ...	21,31,200	92,72,446	31,95,343	1,24,67,789	1,03,36,589	2,39,80,886	58
1859-60 ...	43,96,985	1,53,23,376	42,21,645	1,95,45,021	1,51,48,036	3,45,37,522	57

1860-61	...	42,48,142	1,58,94,408	46,86,874	2,05,81,282	1,63,33,140	3,65,86,234	56
1861-62	...	42,67,222	1,91,51,299	41,67,274	2,33,18,573	1,90,51,351	4,19,12,972	55
1862-63	...	68,24,890	2,30,77,127	34,60,064	2,65,37,191	1,97,12,301	4,25,78,570	54
1863-64	...	89,62,340	2,68,55,799	27,74,279	2,96,30,078	2,06,67,738	4,38,15,605	53
1864-65	...	1,23,25,650	3,07,35,622	23,65,041	3,31,00,663	2,07,75,013	4,32,12,027	52
1865-66	...	3,12,65,630	3,14,48,577	29,78,677	3,44,27,254	31,61,624	644,9,713	51
1866-67	...	2,46,92,340	3,50,26,979	18,14,595	3,68,41,574	1,21,49,234	2,42,98,468	50
1867-68	...	2,25,04,540	3,82,29,623	9,68,084	3,91,97,707	1,66,93,167	3,27,28,607	49
1868-69	...	2,44,00,600	4,28,79,997	5,75,790	4,34,55,787	1,90,55,187	3,65,85,959	48
1869-70	...	2,93,70,400	4,42,38,214	13,18,013	4,55,56,227	1,61,85,827	3,04,29,603	47
1870-71	...	2,86,28,620	4,77,64,577	-6,34,674	4,71,29,903	1,85,01,283	3,40,42,361	46
1871-72	...	3,18,80,890	4,78,31,940	1,85,181	4,80,17,121	1,61,36,231	2,90,45,216	45
1872-73	...	2,86,03,770	5,09,88,120	-1,92,850	5,07,95,270	2,21,91,500	3,90,57,040	44
1873-74	...	3,61,31,140	5,18,69,740	-3,91,954	5,14,77,786	1,53,46,646	2,63,96,231	43
1874-75	...	4,13,15,640	5,48,18,850	-1,26,096	5,46,92,754	1,33,77,114	2,24,73,552	42
1875-76	...	4,25,93,200	5,43,54,760	9,73,164	5,53,27,924	1,27,34,724	2,08,84,947	41
1876-77	...	5,08,76,410	5,77,33,160	19,45,360	5,96,78,520	88,02,110	1,40,83,376	40
1877-78	...	6,59,34,590	6,18,07,210	-23,118	6,17,84,092	-41,50,498	-64,74,777	39
1878-79	...	5,20,13,060	6,60,96,890	12,63,839	6,73,60,729	1,53,47,669	2,33,28,457	38
1879-80	...	4,62,25,840	6,37,68,900	-11,14,474	6,26,54,426	1,64,28,586	2,01,74,297	37
1880-81	...	2,91,33,130	4,33,48,210	-1,28,469	4,32,19,741	1,40,86,611	2,02,84,720	36
1881-82	...	3,61,56,250	4,35,12,610	8,53,420	4,43,66,030	82,09,780	1,14,93,692	35
1882-83	...	3,58,20,460	4,63,39,340	-7,76,356	4,55,62,984	97,42,524	1,32,49,832	34
Total	...	70,44,95,812	1,04,33,10,597	3,96,14,896	1,08,29,25,493	37,84,29,681	71,92,85,611	...

NOTE.—1877-78 was the only year in which the Guaranteed Railways showed a profit, while in all the other years of their working, they incurred losses. In 1877-78 the extraordinary result was due to the large income made from the famine traffic and from traffic to and from the Delhi Durbar of 1877.

APPENDIX 3.

True Financial Results to the Revenues of India of the guarantees of interest upon the Capital of Guaranteed Railway Companies as per Table of Commercial and Financial Statistics appended to the annual Financial Statements of the Government of India, with 4 per cent. per annum simple interest.

Year.	Open Mileage at end of official year.	Gross Traffic Receipts.	EXPENDITURE.							Net loss to the State (columns 3 minus 10)	Simple interest at 4 per cent. per annum up to 31st March 1917 on net loss.	Number of years up to 31st March 1917.	Percentage of working expenses on gross traffic receipts.
			Working Expenses.	Guaranteed interest.	Companies' share of surplus profits.	Land and Supervision.	Interest on Revenue Balances	Loss by Exchange.	Total (columns 4 to 9.)				
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Miles.	In Thousands of Rupees.											
1883-84	4,636	7,83,60	4,14,79	4,04,72	56,99	6,73	19	8,67	8,92,10	1,08,49	1,43,28	33	52.86
1884-85	4,528 a	7,60,67	4,12,84	4,02,87	43,15	6,15	19	—	10,86,50	1,04,41	1,33,65	32	54.27
1885-86	3,921 b	7,80,95	4,08,45	4,23,17	39,71	6,96	14	4,80	8,84,23	1,03,27	1,28,06	31	52.30
1886-87	3,896	7,28,05	3,63,34	3,72,19	53,46	6,62	18	11,53	8,07,33	79,28	95,13	30	49.91
1887-88	3,912	7,24,15	3,60,48	3,85,29	66,26	5,14	23	7,87	8,25,27	1,01,13	1,17,31	29	49.78
1888-89	3,241	7,40,34	3,75,26	3,95,91	50,72	4,43	33	8,69	8,41,65	1,01,30	1,13,46	28	50.68
1889-90	3,243	6,53,46	3,36,59	3,39,53	44,19	3,10	...	14,27	7,37,68	84,23	90,96	27	51.50
1890-91	2,588	6,75,30	3,25,17	3,13,09	47,33	4,30	...	8,75	6,98,65	23,35	24,29	26	48.15
1891-92	2,588	6,84,64	3,35,33	3,06,94	73,77	1,93	...	13,20	7,31,16	46,52	46,52	25	48.98
1892-93	2,587	6,30,19	3,05,75	3,43,86	58,19	2,94	...	14,54	7,25,29	95,10	91,29	24	48.32
1893-94	2,587	6,46,10	3,07,72	3,55,75	57,13	3,40	...	13,35	7,37,35	91,25	83,95	23	47.63

1894-95	2,587	6,12,42	3,07,39	3,95,38	60,07	3,15	...	7,43	7,73,41	1,60,99	1,41,67	22	50-19
1895-96	2,587	6,25,51	2,97,99	3,80,67	50,15	2,88	...	8,73	7,20,68	1,14,90	96,52	21	47-64
1896-97	2,588	5,68,52	3,05,10	3,59,72	44,73	2,81	...	8,31	6,82,70	1,52,16	1,21,83	20	53-67
1897-98	2,588	5,41,46	3,21,32	3,37,71	11,03	1,59	...	11,05	7,13,02	1,41,24	1,07,34	19	59-34
1898-99	2,588	6,38,10	3,29,83	3,25,20	36,18	3,64	...	18,17	7,38,30	74,92	5,39,4	18	51-69
1899-00	2,612	6,26,02	3,39,93	3,25,85	42,04	9,47	...	21,02	4,45,76	1,12,30	76,36	17	54-30
1900-01	1,305	3,78,26	1,80,73	2,38,41	25,82	-16	...	97	2,99,43	67,50	43,20	16	47-78
1901-02	1,334	2,65,90	1,28,65	1,51,43	23,16	-1,01	...	-2,80	3,10,75	33,54	20,12	15	48-38
1902-03	1,349	2,82,67	1,40,74	1,54,03	13,34	-95,96	...	3,60	3,36,49	28,09	15,73	14	49-79
1903-04	1,408	2,99,01	1,57,79	1,54,92	15,28	3	...	8,47	3,43,94	37,47	19,49	13	52-77
1904-05	1,408	3,23,13	1,61,91	1,57,10	19,08	1,13	...	4,72	3,25,62	20,81	9,99	12	50-11
1905-06	904	2,81,37	1,43,08	1,57,94	17,73	1,20	...	5,66	1,92,81	44,25	19,47	11	50-85
1906-07	904	1,52,03	92,21	87,71	9,05	-2,80	...	6,63	1,92,81	40,77	16,30	10	60-65
1907-08	905	1,17,53	83,24	86,49	1,29	47	...	59	1,72,08	54,55	19,64	9	70-82
1908-09	...	4	18	...	1,83	86	...	4	2,14	2,10	67	8	...
1909-10	...	...	...	...	-97	...	...	...	-97	-97	-17	7	...
to 1913-14	...	...	...	...	...	...	...	...	...	...	...	...	...
Total 1883-84 to 1913-14.	...	1,35,19,43	69,35,81	73,55,89	9,67,03	74,23	1,25	2,08,16	1,55,42,38	20,22,95	18,29,94		
Total from 1848-49 to 1882-83.	...	70,44,96 ^a	*		1,04,33,11		...	3,96,15	1,08,29,25	3,78,4,29	71,92,85		
Grand Total for entire period.	...	2,05,64,39	...	...	...	...	...	...	2,63,71,63	58,07,24	90,22,79		

* The figure given in column 3 represents net traffic receipts after deduction of the working expenses from the gross traffic receipts.

(a) The Bellary Branch of the Madras Railway 33 miles, transferred to the S. M. Railway.

(b) The S. P. & D. Railway 691 miles, purchased by the State on 1st January 1886.

APPENDIX 3A:

Total loss borne by the Revenue of India on account of the old Guaranteed Railway Companies with 4 per cent. per annum Compound interest.

Year.	Net loss during each year as per Statements Nos. 2 & 3.	Interest at 4 per cent. per annum on the total loss at end of previous year.	Total loss including interest at end of each year.
1	2	3	4
	Rs.	Rs.	Rs.
1848-49	—1,22,485	.....	—1,22,485
1849-50	—73,685	—4,899	—2,01,069
1850-51	2,39,953	—8,043	30,841
1851-52	6,71,030	1,234	7,03,105
1852-53	8,89,058	28,124	16,20,287
1853-54	11,70,948	64,811	28,56,046
1854-55	10,79,561	1,14,242	40,49,849
1855-56	42,57,574	1,61,994	84,69,417
1856-57	64,00,180	3,38,777	1,52,08,374
1857-58	78,94,060	6,08,335	2,37,10,769
1858-59	1,03,36,589	9,48,431	3,49,95,789
1859-60	1,51,48,036	13,99,832	5,15,43,657
1860-61	1,63,33,140	20,61,746	6,99,38,543
	6,42,23,959	57,14,584	6,99,38,343
1861-62	1,90,51,351	27,97,542	9,17,87,436
1862-63	1,97,12,301	36,71,497	11,51,71,234
1863-64	2,06,67,738	46,06,849	14,04,45,821

XVI

INDIAN RAILWAYS.

1864-65	...	...	2,07,75,013	56,17,833	16,68,38,667
1865-66	...	...	31,61,624	66,73,547	17,66,73,838
1866-67	...	...	1,21,49,234	70,66,954	19,58,90,026
1867-68	...	...	1,66,93,616	78,35,601	22,04,18,794
			17,64,34,387	4,39,84,407	22,04,18,794
1868-69	...	...	1,90,55,187	88,16,752	24,82,90,733
1869-70	...	...	1,61,85,827	99,31,629	27,44,08,189
1870-71	...	...	1,85,01,283	1,09,76,327	30,38,85,799
			23,01,76,684	7,37,09,115	30,38,85,799
1871-72	...	...	1,61,36,231	1,21,55,432	33,21,77,462
1872-73	...	...	2,21,91,500	1,32,87,098	36,76,56,060
1873-74	...	...	1,53,46,646	1,47,06,242	39,77,08,948
1874-75	...	...	1,33,77,114	1,59,08,358	42,69,94,420
1875-76	...	...	1,27,34,724	1,70,79,776	45,68,08,920
1876-77	...	...	88,02,110	1,82,72,356	48,38,83,386
1877-78	...	...	-41,50,498	1,93,55,335	49,90,88,223
1878-79	...	...	1,53,47,669	1,99,63,528	53,43,99,420
1879-80	...	...	1,64,28,586	2,13,75,976	57,22,03,982
1880-81	...	...	1,40,86,611	2,28,88,159	60,91,78,752
			36,04,77,377	24,87,01,375	60,91,78,752
1881-82	...	...	82,09,780	2,43,67,150	64,17,55,682
1882-83	...	...	97,42,524	2,56,70,227	67,71,68,433
1883-84	...	...	1,08,49,220	2,70,86,737	71,51,04,390
1884-85	...	...	1,04,41,350	2,86,04,176	75,41,49,916
1885-86	...	...	1,03,27,390	3,01,65,997	79,46,43,303
Carried over	...	...	41,00,47,641	38,45,95,662	79,46,43,303

APPENDIX 3A.—(Continued.)

Total loss borne by the Revenue of India on account of the old Guaranteed Railway Companies with 4 per cent. per annum Compound interest.

Year.	Net loss during each year as per Statement No. 3.	Interest at 4 per cent. per annum on the total loss at end of previous year.	Total loss including interest at end of each year.
1	2	3	4
	Rs.	Rs.	Rs.
Brought forward ...	41,00,47,641	38,45,95,662	79,46,43,303
1886-87	79,27,520	3,17,85,732	83,43,56,555
1887-88	1,01,12,830	3,33,74,262	87,78,43,647
1888-89	1,01,30,360	3,51,13,746	92,30,87,753
1889-90	84,22,630	3,69,23,510	96,84,33,893
1890-91	23,35,260	3,87,37,359	1,00,95,06,512
	44,89,76,241	56,05,30,271	1,00,95,06,512
1891-92	46,51,880	4,03,80,260	1,05,45,38,652
1892-93	95,09,520	4,21,81,546	1,10,62,29,718
1893-94	91,24,870	4,42,49,179	1,15,96,03,767
1894-95	1,60,99,407	4,63,84,151	1,22,20,87,325
1895-96	1,14,90,185	4,88,83,493	1,28,24,61,003
1896-97	1,52,16,002	5,12,98,440	1,34,89,75,445
1897-98	1,41,23,676	5,39,59,018	1,41,70,58,139
1898-99	74,92,306	5,66,82,326	1,48,12,32,771

1899-1900	...	1,12,29,754	5,92,49,311	1,55,17,11,836
1900-01	...	67,50,285	6,20,68,473	1,62,05,30,594
		55,46,64,126	1,06,58,66,468	1,62,05,30,594
1901-02	...	33,53,635	6,48,21,224	1,68,87,05,459
1902-03	...	28,08,815	6,75,48,218	1,75,90,62,486
1903-04	...	37,47,247	7,03,62,499	1,83,31,72,232
1904-05	...	20,80,823	7,33,26,889	1,90,85,79,944
1905-06	...	44,24,354	7,63,43,198	1,98,93,47,496
1906-07	...	40,77,335	7,95,73,900	2,07,29,98,731
1907-08	...	54,54,854	8,29,19,949	2,16,19,73,534
1908-09	...	2,10,025	8,64,54,941	2,24,80,38,500
1909-10	...	—26,456	8,99,21,540	2,33,79,33,584
1910-11	...	—10,642	9,35,17,343	2,43,14,40,285
		58,07,84,116	1,85,06,56,169	2,43,14,40,285
1911-12	...	.....	9,72,57,611	2,52,86,97,896
1912-13	...	.....	10,11,47,916	2,62,98,45,812
1913-14	...	—59,707	10,51,93,832	2,73,49,79,937
1914-15	...	.....	10,93,99,197	2,84,43,79,134
1915-16	...	.....	11,37,75,165	2,95,81,54,299
1916-17	...	.....	11,83,26,172	3,07,64,80,471
1917-18	...	.....	12,30,59,219	3,19,95,39,690
		58,07,24,409	2,61,88,15,281	3,19,95,39,690
1918-19	...	.....	12,79,81,587	3,32,75,21,277
1919-20	...	.....	13,31,00,851	3,46,06,22,128
		58,07,24,409	2,87,98,97,719	3,46,06,22,128
Total	...	58,07,24,409	2,87,98,97,719	3,46,06,22,128

APPENDIX 4.—Purchase of old Guaranteed Railways by Government. See Section 6 of Chapter III.

Name of Company.	Length of line in miles.	Date of purchase.	Capital subscribed by Company.			Purchase Price for share Capital.	
			Share.	Debenture.	Rate p.c. on share capital.	Total Price.	How discharged.
	Miles.		Pounds.	Pounds.		Pounds.	Pounds.
East Indian ...	1,504	31-12-79	26,200,000	4,450,000	125	32,750,000	By India Stock 7,282,366
Eastern Bengal ...	160	1-7-84	2,255,480	1,023,658	150·38½	3,391,917	„ Annuity 25,467,634
S. P. & D. ...	737	1-1-86	11,075,320	.....	126·49	14,009,124	„ India Stock 542,070
Oudh & Rohilkhand	548	1-1-89	4,000,000	5,300,000	125·9012	5,036,049	„ Annuity 2,849,847
South Indian ...	655	1-1-91	3,208,280	1,495,000	131·0116	4,197,557	„ India Stock 4,911,216
					for 5% shares		„ Annuity 9,097,908(a)
					124·558½ for		„ 3% India Stock.
					¼% shares.		„ India Stock 3,197,557
G. I. P. ...	1,288	1-7-1900	20,000,000	5,922,350	174·296	34,859,218	„ Capital deposited by new Company 1,000,000
							By Annuity 33,109,218(b)
							„ New Company Stock 1,750,000
							in exchange for part of annuity of £67,047,17s. 9d.
B. B. & C. I. ...	461	31-12-05	3,745,056	2,391,300	133·625	11,685,581	By India Stock 9,685,581
							„ New Company Stock 2,000,000
Madras ...	905	1-1-08	10,257,630	2,144,600	124·977	12,319,558	By Annuity 11,319,558
							„ New Company Stock 1,500,000
Total ...	6,258	...	85,741,766	22,726,908	138·49	118,749,004	

(a) Annuity of £4-1-7-6393 per cent.

(b) Annuity of £568,516 payable up to 17th August 1948.

xx

APPENDIX 4

APPENDIX 5.

**Charges borne by General Revenues of India on account
of the Subsidized Railway Companies, *vide* Heads
H-40 and H-XXVIII, in the abstracts of Expen-
diture and Revenue of the Government
of India.**

APPENDIX

*Charges borne by General Revenues of India on account of the
in the abstracts of Expenditure and*

Year.	Cost of land, advances of interest, etc., Rs per Head H 40.			Repayment of advances, profits, etc.,	
	Imperial.	Provincial.	Total.	India.	Eng- Pounds.
	Rs.	Rs.	Rs.	Rs.	Pounds.
1881-82	1,56,506	...	1,56,506	...	...
1882-83	3,82,689	...	3,82,689	...	...
1883-84	8,55,000	...	8,55,000	...	...
1884-85	8,42,000	...	8,42,000	...	...
1885-86	2,72,760	1,68,490	4,41,250	1,190	...
1886-87	c. 3,06,800	1,45,630	4,52,430	16,160	...
1887-88	2,90,110	1,46,160	4,36,270	2,47,640	...
1888-89	1,36,320	1,44,390	2,80,710	4,27,680	...
1889-90	5,45,570	1,45,730	6,91,300	4,90,120	63
	37,87,755	7,50,400	45,38,155	11,82,790	63
1890-91	2,16,620	1,46,260	3,62,880	3,05,050	735
1891-92	1,89,240	1,42,060	3,31,300	3,15,670	£995 Rs 432
1892-93	1,23,830	1,66,430	2,90,260	1,78,830	...
1893-94	67,660	1,42,340	2,10,000	3,40,540	...
1894-95	26,050	1,40,890	1,66,940	4,16,940	...
1895-96	81,340	1,01,170	1,82,510	2,52,520	...
1896-97	7,49,570	1,00,630	8,50,200	2,40,520	...
1897-98	10,35,770	1,01,830	11,37,600	1,29,900	1,266
1898-99	9,42,140	1,01,910	10,44,050	4,37,150	296
1899-1900	5,31,339	40,094	5,71,433	3,95,755	1,023d
	77,51,314	19,34,014	96,85,328	41,95,665	4,810
1900-01	2,59,359	1,854	2,61,213	3,20,134	1,591
1901-02	1,99,562	2,049	2,01,611	4,85,876	1,361
1902-03	6,31,098	2,096	6,33,194	4,82,880	17,870
1903-04	4,49,953	7,537	4,57,490	4,88,845	7,222
1904-05	7,49,583	3,965	8,53,548	5,66,840	9,525
1905-06	4,59,489	99,495	5,58,984	3,71,618	17,853
1906-07	4,31,378	86,009	5,17,387	3,88,746	30,272
1907-08	2,03,408	17,323	2,20,731	2,08,839	38,683
Carried over	1,11,35,144	21,54,342	1,32,89,486	75,09,443	129,187

5.

*Subsidized Railway Companies, vide Heads H-40 and H-XXVIII,
Revenue of the Government of India.*

ces of interest, Surplus Head H-XXVIII.		Net charge.	Interest at 4 % per annum on balance outstanding.	Balance out- standing at end of each year.
land.	Total.			
Equi- valent in Rs				
Rs.	Rs.	Rs.	Rs.	Rs.
...	...	a. { 1,56,506	...	1,56,506
...	...	{ 3,82,689	6,260	5,45,455
...	...	{ 8,55,000	21,818	14,22,273
...	...	b. { 8,42,000	56,891	23,21,164
...	1,190	{ 4,40,060	92,847	28,54,071
...	16,160	4,36,270	1,14,163	34,04,504
...	2,47,640	1,88,630	1,36,180	37,29,314
...	4,27,680	-1,46,970	1,49,173	37,31,517
...	910	2,00,270	1,49,261	40,81,048
910	11,83,700	33,54,455	7,26,593	40,81,048
9,750	3,14,800	48,080	1,63,242	42,92,370
14,270	3,29,940	1,360	1,71,695	44,65,425
...	1,78,830	1,11,430	1,78,617	47,55,472
...	3,40,540	-1,30,540	1,90,219	48,15,151
...	4,16,940	-2,50,000	1,92,606	47,57,757
...	2,52,520	-70,010	1,90,310	48,78,057
...	2,40,520	6,09,680	1,95,123	56,82,860
19,790	1,49,690	9,87,910	2,27,315	68,98,085
4,450	4,41,600	6,02,450	2,75,924	77,76,459
15,345	4,11,100	1,60,333	3,11,059	82,47,851
64,515	42,60,180	54,25,148	28,22,703	82,47,821
23,865	3,43,999	-82,786	3,29,914	84,94,979
20,415	5,06,291	-3,04,680	3,39,799	85,30,098
2,68,050	7,50,930	-1,17,736	3,41,204	87,53,566
1,08,330	5,97,175	-1,39,685	3,50,143	89,64,024
1,42,875	7,09,715	43,833	3,58,561	93,66,418
2,67,795	6,39,413	-80,429	3,74,657	96,60,646
4,54,080	8,42,826	-3,25,439	3,86,426	97,21,633
5,80,245	7,89,084	-5,68,353	3,88,865	95,42,145
19,30,170	94,39,613	38,49,873	56,92,272	95,42,145

APPENDIX

*Charges borne by general revenues of India on account of the
in the abstracts of Expenditure and*

Year.	Cost of land, advances of interest, etc., as per Head H.-40.			Repayment of advances profits etc.	
	Imperial.	Provincial.	Total.	India.	Eng- Pounds.
	Rs.	Rs.	Rs.	Rs.	Pounds.
Brought forward...	1,11,35,144	21,54,342	1,32,89,486	75,09,443	129,187
1908-09	10,19,065	43,916	10,62,981	2,39,585	56,231
1909-10	5,87,818	18,359	6,06,177	2,20,641	43,587
	1,27,42,027	22,16,617	1,49,58,644	79,69,669	229,005
1910-11	3,79,498	44,616	4,24,114	2,03,920	25,751
1911-12	8,96,204	13,190	9,09,394	1,92,296	44,825
1912-13	4,91,071	14,031	5,05,102	2,35,088	57,501
1913-14	7,88,791	38,396	8,27,187	2,44,967	76,770
1914-15	14,69,850	...	14,69,850	3,50,940	47,295
1915-16	24,30,669	9,965	24,40,634	2,98,385	71,522
1916-17	24,23,158	13,603	24,36,761	4,37,631	69,560
1917-18	9,50,814	10,107	9,60,921	3,52,757	70,479
	2,25,72,082	23,60,525	2,49,32,607	1,02,85,653	692,698
1918-19	3,01,684	10,112	3,11,796	1,78,845	94,344
1919-20	3,61,973	10,112	3,72,085	1,93,470	218,088
Total ...	2,32,35,739	23,80,749	2,56,16,488	1,06,57,968	1,005,130

- a. Taken from page 706 of Report of Select Committee of 1884.
- b. See Section H, para. 120 of Appropriation Report on the Accounts of India for 1885-86.
- c. The figures for columns 2 to 8 have been extracted from the Annual Accounts of the Government of India. Column 9 represents the difference between columns 4 and 8. The figures in columns 10 and 11 have been worked out by the compiler.
- d. From 1899-1900 pounds were converted at Rs. 15 each.

5—(Continued.)

*Subsidized Railway Companies, vide Heads H-40 and H-XXVIII
Revenue of Government of India.*

ces of interest, Surplus Head H. XXVIII.		Net charge.	Interest at 4 per cent. per annum on balance outstanding.	Balance out- standing at end of each year.
land.	Total.			
Equi- valent in Rs				
Rs.	Rs.	Rs.	Rs.	Rs.
19,30,170	94,39,613	38,49,873	56,92,272	95,42,145
8,43,465	10,83,050	—20,069	3,81,686	99,03,762
6,53,805	8,74,446	—2,68,269	3,96,150	1,00,31,643
34,27,440	1,13,97,109	35,61,535	64,70,108	1,00,31,643
3,86,265	5,90,185	—1,66,071	4,01,266	1,02,66,838
6,72,375	8,64,671	44,723	4,10,674	1,07,22,235
8,62,515	10,97,603	—5,92,501	4,28,890	1,05,58,624
11,51,550	13,96,517	—5,69,330	4,22,345	1,04,11,639
7,09,425	10,60,365	4,09,485	4,16,466	1,12,37,590
10,72,830	13,71,215	10,69,419	4,49,504	1,27,56,513
10,43,400	14,81,031	9,55,730	5,10,261	1,42,22,504
10,57,035	14,09,792	—4,48,871	3,80,380	1,41,54,013
1,03,82,835	2,06,68,488	42,64,119	98,89,894	1,41,54,013
14,15,160	15,94,005	—12,82,209	5,66,160	1,34,37,964
32,71,320	34,64,790	—30,92,705	5,37,518	1,08,82,777
1,50,69,315	2,57,27,283	—1,10,795	1,09,93,572	1,08,82,777

APPENDIX 6.

Miscellaneous Railway Expenditure; Head H-41 in the Abstract of Expenditure of the Government of India.

Year.	Imperial.	Provincial.	Local.	Total.
	Rs.	Rs.	Rs.	Rs.
1883-84	26,75,370	(¹)-47,33,670	...	(²)-20,58,300
1884-85	37,77,110	10,74,330	...	(²) 48,51,440
1885-86	9,12,350	80,390	...	9,92,740
1886-87	8,12,700	1,31,290	...	9,43,990
1887-88	4,25,980	92,490	...	5,18,470
1888-89	5,43,980	1,62,360	...	7,06,340
1889-90	12,92,310	1,98,930	...	14,91,240
1890-91	11,90,800	3,01,170	...	14,91,970
	1,16,30,600	-26,92,710	...	89,37,890
1891-92	8,02,230	1,18,370	...	9,20,600
1892-93	1,08,600	.....	...	-1,08,600
1893-94	10,22,530	11,860	...	10,34,390
1894-95	10,11,040	-7,440	...	10,03,600
1895-96	7,16,230	260	...	7,16,490
1896-97	6,36,900	2,110	...	6,39,010
1897-98	1,54,750	7,540	...	1,62,290
1898-99	5,48,420	-5,050	...	5,43,370
1899-1900	6,34,671	4,571	...	6,39,242
1900-01	7,04,061	17,700	...	7,21,761
	1,77,52,832	-25,42,789	...	1,52,10,043
1901-02	10,72,997	1,12,773	...	11,85,770
1902-03	7,89,597	85,447	8,803	8,83,847
1903-04	7,21,235	85,285	9,096	8,15,616
1904-05	6,38,164	77,502	8,103	7,23,769
1905-06	4,89,263	19,639	23,819	5,32,721
1906-07	5,84,037	8,613	20,379	6,13,029
Carried over	2,20,48,125	-21,53,530	70,200	1,99,64,795

APPENDIX 6—(Continued.)

Miscellaneous Railway Expenditure, Head H-41 in the Abstract of Expenditure of the Government of India.

Year.	Imperial.	Provincial.	Local.	Total.
	Rs.	Rs.	Rs.	Rs.
Brought forward	2,20,48,125	—21,53,530	70,200	1,96,64,795
1907-08	12,10,766	16,197	105	12,27,068
1908-09	2,93,969	82,777	...	3,76,746
1909-10	5,40,198	20,601	...	5,60,799
1910-11	4,78,990	8,184	...	4,87,174
	2,45,72,048	—20,25,771	70,305	2,26,16,582
1911-12	2,62,400	10,100	...	2,72,560
1912-13	9,86,632	3,999	...	9,90,631
1913-14	—6,87,945	—465	...	—6,88,410
1914-15	13,08,375	.....	...	13,08,375
1915-16	2,55,889	14,424	...	2,70,313
1916-17	43,657	14	...	43,671
1917-18	7,95,692	297	...	7,95,989
	2,75,36,748	—19,97,342	70,305	2,56,09,711
1918-19	44,24,379	571	...	44,24,950
1919-20	80,64,357	1,059	...	80,65,416
	4,00,25,484	—19,95,712	70,305	3,81,00,077

(1) Writes-back of expenditure incurred up to 1882-83 upon four Provincial Railways which were subsequently classed as Productive.

(2) State Ry. -39 43,270
S. M. Ry. 8,55,680
Frontier
Railways 10,29,290
Total ...-20,58,800

(3) State Rys. 19,50,910
S. M. Ry. 15,13,530
Frontier
Railways 13,87,000
Total ... 48,41,440

STATEMENT 7.

Financial result from the working of the British Indian State Railways.

In Thousands of Rupees.

Year.	Gross Receipts.	Revenue Expenditure.					Net loss — Net gain +
		Working Expenses.	Surplus profits paid to Companies.	Interest on Capital.	Annuities.	Total.	
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1868-69	.....	4,10	...	...	...	4,10	—4,10
1869-70	81	3,88	...	...	...	3,88	—3,07
1870-71	76	5,22	...	...	...	5,22	—4,46
	1,57	13,20	...	...	...	13,20	—11,63
1871-72	38	6,85	...	...	...	6,85	—6,47
1872-73	1,65	11,30	...	...	...	11,30	—9,65
1873-74	3,99	22,35	...	...	...	22,35	—18,36
1874-75	13,10	37,05	...	...	...	37,05	—23,95
1875-76	29,28	60,35	...	...	...	60,35	—31,07
1876-77	38,07	81,67	...	...	...	81,67	—43,60

xxviii

INDIAN RAILWAYS.

1877-78	58,21	1,09,18	...	...	...	1,09,18	-50,97
1878-79	97,68	1,65,39	...	...	...	1,65,39	-67,71
1879-80	2,72,64	2,49,25	...	* ... 4,13	...	2,53,38	+19,26
1880-81	6,52,20	4,47,09	...	* 1,60,71	...	6,07,80	+44,40
	11,67,20	11,90,48	...	* 1,64,84	...	13,55,32	-1,88,12
1881-82	7,26,71	4,57,51	...	* 1,91,98	...	6,49,49	+77,22
1882-83	7,24,77	5,00,18	...	* 1,92,29	...	6,92,47	+32,30
1883-84	8,44,15	3,79,82	20,96	1,83,41	1,20,31	7,04,50	+1,39,65
1884-85	8,41,92	4,10,10	19,13	2,00,50	1,22,06	7,51,79	+90,13
1885-86	9,95,89	4,73,31	16,90	2,92,11	1,74,08	9,56,40	+39,49
1886-87	10,82,90	4,97,40	24,59	3,67,56	2,30,86	11,20,41	-37,51
1887-88	10,87,19	5,32,92	26,50	4,00,83	2,39,08	11,99,33	-1,12,14
1888-89	11,82,71	5,82,26	23,67	4,54,83	2,47,42	13,08,18	-1,25,47
1889-90	13,38,79	6,61,68	24,77	5,06,21	2,44,52	14,37,18	-98,39
1890-91	13,70,32	6,55,16	22,04	5,07,56	2,24,30	14,09,06	-38,74
	1,01,95,35	51,50,34	1,78,56	32,97,28	16,02,63	1,02,28,81	-33,46
1891-92	16,41,20	7,73,26	48,19	5,65,92	2,42,88	16,30,25	+10,95
1892-93	15,81,48	7,56,29	38,20	6,19,37	2,71,74	16,85,60	-1,04,12
1893-94	16,87,91	7,77,91	48,49	6,48,39	2,79,75	17,54,54	-66,63
1894-95	18,15,21	8,33,19	45,91	6,97,93	3,11,93	18,88,96	-73,75
1895-96	18,55,87	8,59,89	44,19	7,01,07	3,00,11	19,05,26	-49,39
Carried over	85,81,67	40,00,54	2,24,98	32,32,68	14,06,41	88,64,61	-2,82,94

* Include Surplus profits and Annuities.

STATEMENT 7.—(Continued.)

Financial result from the working of the British Indian State Railways.

In Thousands of Rupees.

Year.	Gross Receipts.	Revenue Expenditure.					Net loss — Net gain +
		Working Expenses.	Surplus profits paid to Companies	Interest on Capital.	Annuities.	Total.	
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought forward...	85,81,67	40,00,54	2,24,98	32,32,68	14,06,41	88,64,61	—2,82,94
1896- 97	17,63,96	8,43,66	38,30	7,07,24	2,84,43	18,73,63	—1,09,67
1897- 98	19,04,45	8,71,34	48,78	7,18,23	2,67,67	19,06,02	—1,57
1898- 99	19,61,39	9,45,64	52,89	7,30,98	2,57,45	19,86,96	—25,57
1899-1900	21,97,98	10,09,21	62,96	7,55,95	2,57,79	20,85,91	+1,12,07
1900- 01	25,43,07	12,16,59	53,27	7,96,73	3,53,56	24,20,15	+1,22,92
	1,89,52,52	88,86,98	4,81,18	69,41,81	28,27,31	1,91,37,28	—1,84,76
1901-02	28,91,28	13,76,49	47,36	8,44,87	4,49,67	27,18,39	+1,73,19
1902-03	28,70,64	14,30,04	44,04	8,78,94	4,49,88	28,02,90	+67,74
1903-04	30,86,49	15,07,11	49,61	9,11,92	4,50,69	29,19,33	+1,67,16

1904-05	34,35,06	16,40,84	53,48	9,49,51	4,51,39	30,95,22	+3,39,84
1905-06	35,44,43	16,87,61	62,85	10,00,26	4,52,07	32,02,79	+3,41,64
1906-07	38,73,19	19,31,18	59,45	10,45,14	4,52,75	34,89,15	+3,84,04
1907-08	41,01,51	22,01,05	64,54	10,85,41	4,53,51	38,04,51	+2,97,00
1908-09	40,19,98	24,88,83	48,14	11,49,59	5,14,14	42,00,70	-1,80,72
1909-10	43,38,61	24,32,15	48,37	12,03,22	5,28,44	42,12,18	+1,26,43
1910-11	45,94,46	24,48,55	69,60	12,41,25	5,29,34	42,88,74	+3,05,72
	3,67,55,95	1,91,44,48	5,47,44	1,03,10,11	47,31,88	3,47,33,91	+20,22,04
1911-12	50,36,87	25,89,46	72,30	12,73,51	5,30,25	44,65,52	+5,71,35
1912-13	55,02,96	28,02,31	1,06,45	13,38,99	5,31,32	47,79,07	+7,23,89
1913-14	56,31,92	29,35,91	66,13	13,88,34	5,35,69	49,26,07	+7,05,85
1914-15	54,15,77	29,52,87	1,03,64	14,84,80	5,33,58	50,74,89	+3,40,88
1915-16	57,26,42	29,53,00	90,57	15,23,17	5,34,99	51,01,73	+6,24,69
1916-17	62,94,69	29,96,86	1,15,57	14,83,02	5,52,19	51,47,64	+11,47,05
1917-18	68,92,13	31,35,81	1,49,16	15,62,87	5,53,67	54,01,51	+14,90,62
	4,05,00,76	2,03,66,22	7,03,82	1,00,54,70	37,71,69	3,48,96,43	+56,04,33
1918-19	76,25,70	37,07,67	1,89,64	15,71,68	5,40,07	60,09,06	+16,16,64
1919-20	79,09,94	45,46,75	2,00,92	16,35,90	5,41,99	69,25,56	+9,84,38
	5,60,36,40	2,86,20,64	10,94,38	1,32,62,28	48,53,75	4,78,31,05	+82,05,35
Grand Total	12,31,08,99	6,30,06,12	23,01,56	3,39,76,32	1,40,15,57	11,32,99,57	+98,09,42

APPENDIX

Charges borne by Indian Revenues
In Thousands

Year.	Loss on account of old Guaranteed Railways as per Statements Nos. 2 and 3.	Charges on account of Subsidized Companies as per Statement No. 5.	Misc. Expenditure on Surveys etc. as per Statement No. 6.	Construction of Protective Railways out of	
				Famine Insurance Fund.	Revenue.
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
1848-49 to } 1860-61 }	6,42,24	...	...	...	...
1861-62 to } 1067-68 }	11,22,10	...	...	...	...
1868-69 ...	1,90,55	...	...	...	...
1869-70 ...	1,61,86	...	...	...	58
1870-71 ...	1,85,01	...	...	...	79
Total decade	16,59,53	...	...	...	1,37
Total to date	23,01,77	...	...	...	1,37
1871-72 ...	1,61,36	...	...	...	28
1872-73 ...	2,21,92	...	...	...	1,08
1873-74 ...	1,53,47	...	...	...	3,28
1874-75 ...	1,33,77	...	...	...	10,52
1875-76 ...	1,27,35	...	...	...	6,63
1876-77 ...	88,02	...	...	...	2,73
1877-78 ...	—41,50	...	...	...	7,14
1878-79 ...	1,53,48	...	...	...	22,08
1879-80 ...	1,64,29	...	...	...	1,80,58
1880-81 ...	1,40,87	...	...	...	1,52,19
Total decade	13,03,01	...	...	...	3,86,51
Total to date	36,04,77	...	...	...	3,87,88
Carried over.					

8.

on account of Railways.
of Rupees.

Loss by Exchange on Capital Expen- diture in England for State Rys.	Add Loss + or deduct gain - from working of State Railways as per Statement No. 7.	Total charges as per columns 2 to 8.	Interest at 4 per cent. per annum on outstanding total at end of previous year.	Total of columns 9 and 10 to end of each year.
7	8	9	10	11
...	...	6,42,24	57,14	6,99,39
...	...	11,22,10	3,82,70	(a) 22,04,19
1,28	+ 4,10	1,95,94	88,17	24,88,29
26	+ 3,07	1,65,76	99,53	27,53,58
33	+ 4,46	1,90,60	1,10,14	30,54,33
1,87	+ 11,64	16,74,40	6,80,54	.....
1,87	+ 11,64	23,16,64	7,37,69	30,54,33
39	+ 6,47	1,68,50	1,22,17	33,45,01
1,65	+ 9,64	2,34,29	1,33,80	37,13,10
6,93	+ 18,36	1,82,04	1,43,52	40,43,66
9,44	+ 23,95	1,77,69	1,61,75	43,83,09
8,17	+ 31,07	1,73,21	1,75,32	47,31,63
10,52	+ 43,61	1,44,87	1,89,27	50,65,77
21,23	+ 50,97	37,84	2,02,63	53,06,23
14,71	+ 67,70	2,57,97	2,12,25	57,76,45
11,41	- 19,26	3,37,01	2,31,06	63,44,52
15,28	- 44,40	2,63,93	2,53,78	68,62,23
99,72	+ 1,88,12	19,77,35	18,30,55	.....
1,01,59	+ 1,99,76	42,93,99	25,68,24	68,62,23

APPENDIX

Charges borne by Indian Revenues

In Thousands

Year.	Loss on account of old Guaranteed Railways as per Statements Nos. 2 and 3.	Charges on account of, Subsidized Companies as per Statement No. 5.	Miscellaneous Expenditure on Surveys etc. as per Statement No. 6.	Construction of Protective Railways out of	
				Famine Insurance Fund.	Revenue.
1	2	3	4	5	6
1881-82 ...	82,10	1,56	...	61,46	1,06,54
1882-83 ...	97,43	3,83	...	-12,90	58,30
1883-84 ...	1,08,49	8,55	-20,58	62,65	-39,43
1884-85 ...	1,04,41	8,42	48,51	89,81	19,51
1885-86 ...	1,03,27	4,40	9,93	58,90	63,21
1886-87 ...	79,28	4,36	9,44	20,00	18,31
1887-88 ...	1,01,13	1,89	5,18	...	8,09
1888-89 ...	1,01,30	-1,47	7,06	...	2,24
1889-90 ...	84,23	2,00	14,91	...	50
1890-91 ...	23,25	48	14,93	...	48
Total decade	8,84,99	34,03	89,38	2,79,91	2,36,77
Total to date	44,89,76	34,03	89,38	2,79,91	6,24,65
1891-92 ...	46,52	1	9,21	48,48	...
1892-93 ...	95,10	1,11	1,09	98,45	33,95
1893-94 ...	91,25	-1,31	10,34	1,06,10	7,39
1894-95 ...	1,60,99	-2,50	10,04	...	1,96
1895-96 ...	1,14,90	-70	7,16	52,99	77
1896-97 ...	1,52,16	6,10	6,39	...	1,27
1897-98 ...	1,41,24	9,88	1,62	...	38
1898-99 ...	74,92	6,02	5,43	69,03	15

8.—(Continued.)

on account of Railways.
of Rupees.

Loss by Exchange on capital Expen- diture in England for State Railways.	Add Loss + or deduct gain - from working of State Railways as per Statement No. 7.	Total charges as per column 2 to 8.	Interest at 4 per cent. per annum on outstanding total at end of previous year.	Total of columns 9 and 10 to end of each year.
7	8	9	10	11
14,14	-77,22	1,88,59	2,74,49	73,25,31
-15,43	-32,30	98,91	2,93,01	77,17,23
... (d)	-1,39,65	-19,98	3,08,69	80,05,94
...	-90,13	1,80,54	3,20,24	85,06,72
...	-39,49	2,00,22	3,40,27	90,47,21
...	+37,51	1,68,89	3,61,89	95,77,99
...	+1,12,14	2,28,43	3,83,12	1,00,89,54
...	+1,25,47	2,34,61	4,07,48	1,08,31,63
...	+98,39	2,00,03	4,33,26	1,14,64,93
...	+38,74	77,01	4,58,60	1,20,00,53
-1,29	+33,46	15,57,25	35,81,05	.....
1,00,30	+2,33,22	58,51,24	61,49,29	1,20,00,53
...	-10,95	93,27	4,80,02	1,25,73,82
...	+1,04,12	3,31,64	5,02,95	1,34,08,42
...	+66,63	2,80,40	5,36,34	1,42,25,15
...	+73,75	2,44,24	5,69,01	1,50,38,40
...	+49,39	2,24,51	6,01,54	1,58,61,45
...	+1,09,67	2,75,59	6,34,58	1,67,74,62
...	+1,57	1,54,69	6,70,98	1,76,00,29
...	+25,57	1,81,13	7,04,01	1,84,85,43

APPENDIX

Charges borne by Indian Revenues

In Thousands

Year.	Loss on account of old Guaranteed Railways as per Statements Nos. 2 and 3.	Charges on account of, Subsidized Companies as per Statement No. 5.	Misc. Expenditure on Surveys, etc. as per Statement No. 6.	Construction of Protective Railways out of	
				Famine Insurance Fund.	Revenue.
1	2	3	4	5	6
1899-1900	1,12,30	1,60	6,39	...	35
1900-01 ...	67,50	—83	7,22	...	—12
Total decade	10,56,88	19,40	62,72	3,75,04	46,10
Total to date	55,46,64	53,43	1,52,10	6,54,95	6,70,75
1901-02 ...	33,54	—3,05	11,86	...	—10,01
1902-03 ...	28,09	—1,18	8,84	24	8,20
1903-04 ...	37,47	—1,40	8,15	14,49	3,98
1904-05 ...	20,81	44	7,24	14,57	94
1905-06 ...	44,24	—80	5,33	8,29	1,08
1906-07 ...	40,77	—3,26	6,13	52	13
1907-08 ...	54,55	—5,68	12,27	98	3
1908-09 ...	2,10	—20	3,77	1	6
1909-10 ...	—26	—2,68	5,61	1,80	19
1910-11 ...	—11	—1,66	4,87	5,54	12
Total decade	2,61,20	—19,47	74,07	46,44	4,72
Total to date	58,07,84	33,96	2,26,17	7,01,39	6,75,47
1911-12 ...	...	45	2,73	6,64	12
1912-13 ...	...	—5,93	9,91	6,21	64

8.—(Continued.)

on account of Railways.
of Rupees.

Loss by Exchange on capital Expen- diture in England for State Railways.	Add Loss + or deduct gain — from working of State Railways as per Statement No. 7.	Total charges as per columns 2 to 8.	Interest at 4 per cent. per annum on outstanding total at end of previous year.	Total of columns 9 and 10 to end of each year.
7	8	9	10	11
...	—1,12,07	8,58	7,39,42	1,92,33,43
...	—1,22,92	—49,15	7,69,34	1,99,53,62
...	+1,84,76	17,44,90	62,08,18	.....
1,00,30	+4,17,98	75,96,14	1,23,57,47	1,99,53,62
...	—1,73,19	—1,40,85	7,98,14	2,06,10,91
...	—67,74	—23,55	8,24,44	2,14,11,80
...	—1,67,16	—1,04,45	8,56,47	2,21,63,81
...	—3,39,84	—2,95,85	8,86,55	2,27,54,52
...	—3,41,64	—2,83,51	9,10,18	2,33,81,19
...	—3,84,04	—3,39,74	9,35,25	2,39,76,70
...	—2,97,00	—2,34,85	9,59,07	2,47,00,91
...	+1,80,72	+1,86,46	9,88,04	2,58,75,41
...	—1,26,43	—1,21,78	10,35,02	2,67,88,65
...	—3,05,72	—2,96,96	10,71,54	2,75,63,23
...	—20,22,04	—16,55,08	92,64,70	.....
1,00,30	—16,04,06	59,41,06	2,16,22,17	2,75,63,23
...	—5,71,35	—5,61,41	11,02,53	2,81,04,35
.....	—7,23,89	—7,13,05	11,24,17	2,85,15,47

APPENDIX

Charges borne by Indian Revenues
In Thousands

Year.	Loss on account of old Guaranteed Railways as per Statements Nos. 2 and 3.	Charges on account of, Subsidized Companies, as per Statement No. 5.	Misc. Expenditure on Servays, etc., as per Statement No. 6.	Construction of Protective Railways out of	
				Famine Insurance fund.	Revenue.
1	2	3	4	5	6
1913-14 ...	—60	—5,69	—6,88	1,29	21
1914-15 ...	...	4,09	13,08	—20	7
1915-16 ...	...	10,69	2,68	—3	19
1916-17 ...	...	9,56	44	—7	33
1917-18 ...	...	—4,49	7,96	...	—11
Total decade	—60	8,68	29,92	13,84	1,45
Total to date	58,07,24	42,64	2,56,09	7,15,23	6,76,92
1918-19 ...	...	—12,82	44,25	...	81
1919-20 ...	...	—30,93	80,65	...	1,04
Grand Total	58,07,24	—1,11	3,80,99	7,15,23	6,78,77

(a) As per Appendix No. 4.

(b) The figures for the years 1848-49 to 1882-83 have been taken from the Column 2, from column 11 of the India office Statement at page 706 of Column 3, from column 25 of the Indian office Statement at page 707 of Columns 5 and 6, from pages 744—45 of above mentioned Report.

Column 7, from columns 14, 22 and 26 at page 707 of the same Report.

(c) Column 4 for the above period is left blank, as the figures of above noted Summaries.

(d) Loss by Exchange on account of the State Railways for the years after

8.—(Continued.)

on account of Railways.
of Rupees.

Loss by Exchange on capital Expenditure in England for State Railways.	Add Loss + or deduct gain— from working of State Railways, as per Statement No. 7	Total charges as per columns 2 to 8.	Interest at 4 per cent. per annum on outstanding total at end of previous year.	Total of columns 2 and 10 to end of each year.
7	8	9	10	11
...	—7,05,85	—7,17,53	11,40,62	2,89,38,56
...	—3,40,88	—3,23,83	11,57,54	2,97,72,27
...	—6,24,69	—6,11,16	11,90,89	3,03,52,00
...	—11,47,05	—11,36,79	12,14,08	3,04,29,29
...	—14,90,62	—14,87,27	12,17,17	3,01,59,29
...	—56,04,33	—55,51,04	81,47,00	.....
1,00,30	—72,08,39	3,90,04	2,97,69,17	3,01,59,21
...	—16,16,64	—15,84,40	12,06,37	2,97,81,18
...	—9,84,38	—9,33,62	11,91,24	3,00,38,80
1,00,30	—98,09,41	—21,27,98	3,21,66,78	.....

following :—

Report of Select Committee of 1884.

Report of Select Committee of 1884.

Miscellaneous Expenditure on Surveys, etc., were not separately shown in the 1882-83 was not traceable.

APPENDIX

Progress in railways of all classes in India from

Year.	Mileage open to end of year.	IN THOUSANDS OF RUPEES.				Gross earnings per mile per week.
		Capital outlay on open lines.	Gross earnings.	Working expenses.	Net earnings.	
1853	20	37,96	90	41	49	87
1860	838	26,66,00	66,67	37,08	29,59	153
1870	4,771	90,00,50	6,66,67	3,63,15	3,03,52	269
1880	8,996	1,28,56,91	12,86,55	6,48,00	6,38,55	282
1881	9,858	1,40,80,80	14,32,31	7,07,12	7,25,19	285
1890	16,404	2,13,67,04	20,67,01	10,30,89	10,36,12	243
1900	24,752	3,29,53,34	31,54,32	15,09,31	16,45,01	245
1910	32,099	4,39,04,73	51,14,22	27,15,12	23,98,50	306
1914-15	35,285	5,19,22,13	60,42,01	32,74,10	27,67,91	329
1915-16	35,833	5,29,98,29	64,66,04	32,91,95	31,74,09	347
1916-17	36,286	5,35,27,97	70,68,42	33,40,32	37,28,10	375
1917-18	36,333	5,41,79,90	77,36,39	35,36,87	41,99,52	409
1918-19	36,616	5,49,74,45	86,28,68	41,80,17	44,48,51	463
1919-20	36,735	5,66,37,77	89,15,32	50,65,65	38,49,67	467

No. 9.

commencement and main results of their working.

Percentage of working expenses to gross earnings.	Percentage of net earnings on capital outlay.	PASSENGERS.			GOODS.		
		Number carried in thousands.	Earnings in thousands of rupees.	Average rate charged per mile in pies.	Quantity carried in thousands of tons.	Earnings in thousands of rupees.	Average rate charged per ton per mile in pies.
45·56	1·29	...	...	...	...	...	...
55·61	1·11	...	...	...	...	...	...
54·47	3·37	...	...	...	...	...	...
50·37	4·97	...	...	...	...	...	...
49·37	5·16	54,764	3,79,23	2·78	13,214	9,55,97	7·95
49·87	4·85	114,082	6,25,81	2·51	22,613	12,99,52	7·11
47·85	4·99	176,308	8,95,07	2·51	42,896	20,36,52	5·88
53·10	5·46	371,580	17,12,04	2·45	65,600	30,43,17	4·83
54·19	5·33	451,086	20,35,29	2·44	80,972	35,09,18	4·43
50·91	5·99	464,381	20,98,57	2·44	82,499	38,75,79	4·34
47·26	6·96	486,030	23,08,19	2·48	86,242	41,43,00	4·01
45·72	7·75	430,268	25,23,15	2·99	85,472	44,49,54	4·08
48·45	8·09	459,732	28,97,78	3·08	91,161	49,13,89	4·28
56·81	6·80	520,027	33,16,29	3·09	87,630	47,11,60	4·43

APPENDIX No. 10.—General results of Working of some of the Indian Railways for the two half-years of financial year 1915-16.

XIII

Railway.	Mean-mileage worked.	Capital outlay per mile open in 2nd-half year.	Total earnings per mile per week.		Percentage of total working expenses upon total earnings.		Percentage of net earnings on capital outlay.		Average cost of hauling a passenger one mile.	
			1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.
5 ft. 6 ins. Gauge.										
	Mile.	Rs.	Rs.	Rs.					Pies.	Pies.
Bengal-Nagpur	1,894·06	1,89,677	380	461	50·14	38·45	2·47	3·71	1·09	0·86
B. B. & C. I. Railway	1,343·06	2,09,063	555	670	53·25	40·47	3·09	4·77	1·42	1·06
Eastern Bengal	560·14	3,74,554	733	745	57·53	56·85	2·01	2·03	1·61	1·47
East Indian	2,772·50	2,65,373	730	771	38·75	35·94	4·25	4·71	0·78	0·72
G. I. P. Railway	3,142·23	2,16,631	505	681	65·02	48·99	2·03	4·04	1·99	1·70
M. & S. M.	1,043·02	1,70,702	472	487	49·97	49·41	3·33	3·45	1·16	1·16
Nizam's Guaranteed	354·70	1,55,423	346	408	49·77	57·74	2·88	2·82	1·50	1·86
North Western	5,043·11	1,73,862	365	353	52·39	55·97	2·40	2·12	1·27	1·34
Oudh and Rohilkhand	1,572·14	1,30,957	267	276	47·48	49·25	2·65	2·64	1·07	1·27
South Indian	445·94	1,57,225	352	381	48·47	44·11	2·91	3·33	1·06	0·98
8 ft. 3½ ins. Gauge.										
B. and N. W. Railway	1,055·46	84,476	165	192	39·38	35·17	2·91	3·64	0·78	0·69
Bhavnager State	247·95	52,516	127	127	48·23	47·07	3·10	3·22	1·35	1·30
B. B. & C. I. Railway	2,231·51	81,011	262	321	50·90	43·28	3·92	5·59	0·96	0·86
Barmah	1,598·46	1,30,768	251	278	59·47	55·29	1·90	2·32	1·67	1·53
Eastern Bengal	1,117·63	1,12,383	216	248	64·37	55·63	1·45	2·22	1·62	1·25
Gondal-Portbandar	219·75	46,240	122	137	46·40	48·94	3·56	3·72	1·49	1·37
Jodhpur-Bikaner	1,302·98	27,800	110	129	48·61	42·00	5·04	6·60	0·82	0·87
Rohilkhand and Kamaon.	567·13	63,303	120	133	53·10	42·19	2·31	3·06	1·31	1·14
South Indian	1,135·95	1,04,200	387	366	44·78	50·25	4·76	4·05	0·75	0·86
3 ft. 6 ins. Gauge.										
Gondia-Chanda and Extensions	621·95	64,535	62	65	91·93	92·03	0·20	0·20	2·23	2·39
Kalka-Simla	59·92	3,30,327	470	393	49·86	40·67	1·85	1·83	6·55	3·35

INDIAN RAILWAYS.

APPENDIX 10 A.—Duty performed by Carriage and Wagon Stock
on principal Railways during second half-year of 1920-21.

Railways.	Coaching vehicle units.			Goods vehicle units.			
	Number on line.	Vehicle units hauled one mile in thousands.	Average miles run per vehicle.	Number on line.	Vehicle units hauled one mile in thousands.	Average miles run per vehicle.	percentage of freight upon capacity hauled.
1	2	3	4	5	6	7	8
'5-6" Gauge.							
B. N.	1,415	27,010	19,099	16,198	108,682	6,709	53.83
B. B. & C. I.	1,361	38,090	27,987	9,946	66,098	6,645	49.84
E. B.	1,135	21,523	18,963	7,637	37,643	4,929	31.21
G. I. P.	2,905	79,522	27,374	36,320	346,774	9,548	46.45
M. & S. M.	2,967	82,978	27,967	19,568	165,275	8,472	51.08
N. W.	1,021	21,917	21,466	4,862	46,441	9,593	44.55
O. & R.	4,185	85,341	20,392	30,339	136,709	4,506	61.92
S. I.	1,325	26,476	19,982	8,206	29,871	3,640	61.86
	485	7,625	15,722	1,739	8,711	5,009	52.35
Total	16,799	13,90,485	23,899	134,755	946,404	7,023	...
Average run per day per vehicle			131.31	...	.....	38.58	...
Ditto. per hour			5.47	...	.....	1.60	...
Metre-Gauge.							
A. B.	681	12,523	18,389	4,259	18,345	4,307	43.69
B. & N. W.	1,400½	45,876	32,758	8,576	44,488	5,187	45.08
R. M.	2,150	48,142	22,391	10,139	82,610	8,147	48.82
Burma	1,546	29,832	19,296	8,322	58,888	7,076	52.10
E. B.	1,313	21,829	16,625	6,415	26,224	4,087	42.44
M. & S. M.	1,425	25,618	17,977	6,968	43,888	6,298	49.62
S. I.	2,225½	29,500	13,255	5,539	36,479	6,585	47.42
J. B.	365	10,827	29,800	2,421	16,405	6,776	41.42
R. & K.	322	5,777	17,941	2,057	7,889	3,835	47.42
Total	11,428	229,124	20,058	54,696	335,216	6,128	...
Average run per vehicle per day			110.20	...	.....	33.67	...
Ditto. per hour			4.59	...	.....	1.40	...

Notes.—Columns 6 and 7 include empty haulage.

APPENDIX

Coaching

1. Average earnings in pies per coaching
2. Average cost of hauling a coaching
3. Average profit on working a coaching

Name of Railway.	Item No. as per heading.	First Class Passenger.				Second Class Passenger.			
		1912.		1915-16.		1912.		1915-16.	
		1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.
5—6 th Gauge.—									
Bengal Nagpur Ry.	1	18-35	13-81	11-34	14-84	18-84	19-79	15-77	19-43
	2	16-01	16-00	18-02	14-64	16-01	16-00	18-02	14-64
	3	2-34	-2-19	-6-68	0-20	2-83	3-79	-2-25	4-79
B. B. & C. I. Ry. ...	1	17-52	18-24	13-47	18-67	21-24	18-82	19-29	23-92
	2	22-15	27-24	26-70	20-46	22-15	27-24	26-70	20-46
	3	-4-63	-9-00	-13-23	-1-79	-0-91	-8-42	-7-41	2-46
Eastern-Bengal Ry.	1	18-73	15-01	11-93	12-83	23-53	22-15	19-49	21-92
	2	24-93	27-48	20-13	24-68	24-93	27-48	20-13	24-68
	3	-6-20	-12-47	-8-20	-11-85	-1-40	-5-33	-0-64	-2-76
East-Indian Ry. ...	1	17-27	14-96	12-58	14-84	12-89	13-62	11-59	14-27
	2	12-66	12-57	13-07	11-37	12-66	12-57	13-07	11-37
	3	4-61	2-39	-0-49	3-47	0-23	1-05	-1-48	2-90
G. I. P. Ry. ...	1	14-38	13-84	10-55	13-27	18-76	19-13	25-32	27-48
	2	23-86	25-29	27-17	22-89	23-86	25-29	27-17	22-89
	3	-9-48	-11-45	-16-62	-9-62	-5-10	-6-16	-1-85	4-59
M. & S. M. Ry. ...	1	23-86	22-47	17-69	19-32	26-54	25-17	22-33	22-85
	2	26-73	26-81	26-87	26-27	26-73	26-81	26-87	26-27
	3	-2-87	-4-34	-9-18	-6-95	-0-19	-1-64	-4-54	-3-42
Nizam's Guaranteed State Ry.	1	16-34	14-02	12-09	13-78	20-00	20-13	20-76	23-49
	2	21-50	25-00	29-33	36-61	21-56	25-00	29-33	36-61
	3	-5-22	-10-98	-17-24	-23-83	-1-56	-4-87	-8-57	-13-12

(a) The administration Report has 95-34 but that is evidently wrong.

No. 11.

Traffic.

vehicle per mile items, 56-60 of Analysis.

vehicle with its load one mile, item 78 Analysis.

vehicle one mile, items 82-86 Analysis.

Third or Inter Class.				Fourth or Lowest Class.				Other Vehicles.				Remarks.
1912.		1915-16.		1912.		1915-16.		1912.		1915-16.		
1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	
14.36	20.26	20.36	24.84	54.14	57.55	56.83	57.44	78.05	63.50	55.51	66.43	
16.01	16.00	18.02	14.64	16.01	16.00	18.02	14.64	16.01	16.00	18.02	14.64	
-1.65	4.26	2.34	10.20	38.13	41.55	38.81	42.80	62.04	47.50	37.49	51.79	
...	...	...	...	52.83	48.76	53.77	55.02	57.22	60.57	44.89	53.34	
Not provided				22.15	27.24	26.70	20.46	22.15	27.24	26.70	20.46	
...	...	...	...	30.68	21.52	27.07	34.56	35.07	33.33	18.19	32.88	
29.56	32.40	25.24	30.15	61.64	49.17	40.26	56.67	45.39	49.65	29.30	33.54	
24.93	27.48	20.13	24.68	24.93	27.48	20.13	24.68	24.93	27.48	20.13	24.68	
4.63	4.92	5.11	5.47	36.71	21.69	20.13	31.99	20.46	22.17	9.17	8.86	
27.67	25.77	21.37	24.26	56.53	55.10	53.63	50.23	46.06	38.24	38.64	39.44	
12.66	12.57	13.07	11.37	12.66	12.57	13.07	11.37	12.66	12.57	13.07	11.37	
15.01	13.20	8.30	12.89	43.87	42.53	40.56	38.86	33.40	25.67	25.57	28.07	
30.36	41.01	35.67	34.64	71.48	45.34	42.67	40.16	63.32	63.96	76.96	88.58	
23.86	25.29	27.17	22.89	23.86	25.29	27.17	22.89	23.86	25.29	27.17	22.89	
6.50	15.72	8.50	11.75	47.62	20.05	15.50	17.27	39.46	38.67	49.79	65.69	
23.74	23.81	56.34	64.25	64.76	58.13	69.49	66.33	70.78	72.64	52.51	64.22	
26.73	26.81	26.87	26.27	26.73	26.81	26.87	26.27	26.73	26.81	26.87	26.27	
-2.99	-3.00	29.47	37.98	38.03	31.32	42.62	40.06	44.05	45.83	25.64	37.95	
...	...	...	...	56.67	58.05	69.67	68.78	96.91	83.72	86.06	91.22	
Not provided				21.56	25.00	29.33	36.61	21.56	25.00	29.33	36.61	
...	...	...	...	35.11	33.05	40.34	32.17	75.35	58.72	56.73	54.61	

APPENDIX

Coaching

1. Average earnings in pies per coaching
2. Average cost of hauling or coaching
3. Average profit on working a coaching

Name of Railway.	Items.	Item No. as per head, ing.	First Class Passenger.				Second Class Passenger.			
			1912.		1915-16.		1912.		1915-16.	
			1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.
N.-W. Ry. ...	5'-6" gauge	1	10.15	8.95	7.97	10.19	14.85	13.22	17.77	17.66
		2	19.54	21.07	22.64	23.16	19.54	21.07	22.64	23.16
		3	-9.39	-12.12	-14.67	-12.97	-4.69	-7.85	-4.87	-5.50
Oudh and Rohilkhand Ry.	5'-6" gauge	1	14.83	16.10	12.24	12.62	19.77	27.37	20.58	20.68
		2	17.18	21.36	18.97	20.11	17.18	21.36	18.97	20.11
		3	-2.35	-5.26	-6.73	-7.49	2.59	6.01	1.61	0.57
South-Indian Ry.	5'-6" gauge	1	26.14	19.05	22.53	20.57	34.75	27.35	30.97	28.22
		2	25.98	27.42	23.50	21.62	25.98	27.42	23.50	21.62
		3	0.16	-8.37	-0.97	-1.05	8.77	-0.07	7.47	6.60
R. & N.-W. Ry.	3'-3½" Gauge.	1	1.73	1.77	1.75	2.18	3.49	3.54	4.60	4.92
		2	7.25	6.41	8.52	8.12	7.25	6.41	8.52	8.12
		3	-5.52	-4.64	-6.77	-5.94	-3.76	-2.87	-3.92	-3.20
Rajp.-Malwa Ry.	5'-6" gauge	1	9.90	6.96	4.96	6.76	13.45	12.47	13.40	14.63
		2	13.04	15.57	15.67	13.28	13.04	15.57	15.67	13.28
		3	-3.14	-8.61	-10.71	-6.52	0.41	-3.10	-2.27	1.35
J.-B. Ry. ...	5'-6" gauge	1	5.79	6.77	4.66	8.41	12.51	14.06	14.28	14.66
		2	12.55	12.29	12.86	11.87	12.55	12.29	12.86	11.87
		3	-6.76	-5.52	-8.20	-3.46	-0.04	1.77	1.42	2.79
Rohilkhand and Kumaon Ry.	5'-6" gauge	1	15.19	14.02	14.74	9.19	29.69	28.87	20.66	16.84
		2	12.91	13.65	16.81	14.16	12.91	13.65	16.81	14.16
		3	2.28	0.37	-2.07	-4.97	16.78	15.22	3.85	2.18

No 11.—(Continued).

Traffic.

vehicle per miles.

vehicle with it load one mile.

vehicle one mile.

Third or Inter Class.				Fourth or Lowest Class.				Other Vehicles.				Remarks.
1912.		1915-16.		1912.		1915-16.		1912.		1915-16.		
1st half.	2nd half.	1st 2nd	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	
22-25	21-88	20-07	21-69	50-04	49-41	57-80	55-77	52-18	59-73	73-06	114-98	
19-54	21-07	22-64	23-16	19-54	21-07	22-64	23-16	19-54	21-07	22-64	23-16	
2-71	0-81	-2-57	-1-47	30-50	28-34	35-16	32-61	32-64	38-66	50-42	91-82	
27-74	28-62	38-18	31-91	62-41	70-20	57-68	52-67	47-13	48-75	37-26	37-08	
17-18	21-36	18-97	20-11	17-18	21-36	18-97	20-11	17-18	21-36	18-97	20-11	
10-56	7-26	19-21	11-80	45-23	48-84	38-71	32-56	29-95	27-39	18-29	16-97	
...	...	...	...	57-91	54-36	52-40	52-38	85-59	121-23	41-46	45-20	
} Not Provided				25-98	27-42	23-50	21-62	25-98	27-42	23-50	21-62	
...	...	...	...	31-93	26-94	23-90	30-76	59-61	93-81	17-96	23-58	
6-36	6-06	6-97	8-42	27-42	25-07	27-77	29-26	98-45	118-55	108-47	98-52	
7-25	6-41	8-52	8-12	7-25	6-41	8-52	8-12	7-25	6-41	8-52	8-12	
-0-89	-0-35	-1-55	0-30	20-17	18-66	19-25	21-14	91-20	112-14	99-95	90-40	
63-63	...	...	...	34-66	33-40	35-87	33-92	44-83	42-00	46-84	48-29	
13-04	} Discontinued			13-04	15-57	15-67	13-28	13-04	15-57	15-67	13-28	
50-59	...	...	...	21-62	17-83	20-20	20-64	31-79	26-43	31-17	35-01	
18-50	20-76	17-98	15-39	37-26	31-64	38-46	35-46	53-05	60-36	48-41	44-73	
12-55	12-29	12-86	11-87	12-55	12-29	12-86	11-87	12-55	12-29	12-86	11-87	
5-95	8-47	5-12	3-52	24-71	19-35	25-60	23-59	40-50	48-07	35-55	32-86	
10-64	10-84	18-76	14-47	39-03	37-63	32-63	31-58	89-58	83-99	96-81	72-75	
12-91	13-65	16-81	14-16	12-91	13-65	16-81	14-16	12-91	13-65	16-81	14-16	
-2-27	-2-81	1-95	0-31	26-12	23-98	15-82	17-42	76-67	70-34	80-00	58-59	

APPENDIX

Goods

1. Average sum in pies received
2. Average cost in pies of hauling
3. Average profit in pies on working

Name of Railway.	Item 1 as per heading.			
	1912.		1915-16.	
	1st half.	2nd half.	1st half.	2nd half.
5'-6" Gauge.				
Bengal-Nagpur	Pies. 3-93	Pies. 3-53	Pies. 3-17	Pies. 3-37
B. B. & C. I.	6-10	5-39	5-71	5-81
Eastern Bengal	6-02	7-08	6-49	6-14
East Indian	3-14	3-02	2-88	2-81
G. I. P.	5-51	4-54	4-27	4-68
M. & S. M.	5-92	5-58	4-88	4-75
Nizam's Guaranteed	5-86	5-96	5-77	5-99
North-Western	4-92	4-54	4-31	4-08
Oudh and Rohilkhand	4-74	4-75	4-71	5-12
South Indian	6-41	6-43	6-23	6-11
3'-3$\frac{3}{8}$" Gauge.				
B. & N. W.	5-38	5-40	5-29	5-84
Rajputana-Malwa	5-73	5-50	5-68	6-41
Jodhpur-Bikaner	6-51	6-35	5-13	6-03
Rohilkhand and Kumaon	5-49	6-05	6-17	7-25
South Indian	7-14	6-91	6-35	6-18
Bhavnagar State	9-33	8-48	7-83	7-33
Gondal-Porbandar State	10-07	8-61	8-37	7-49
Jamnagar State	13-52	12-92	12-54	14-44
Junagadh State	10-73	6-29	8-90	9-12
2'-6" Gauge.				
Kalka-Simla	30-66	29-89	9-64	11-57
Gondia-Chanda & its Extensions	6-56	4-66	5-46	5-61

(a) Doubtful but the figures are.

No. 12.

Traffic.*for carrying a ton one mile, item 93 of Analysis.**one ton one mile, item 115 of Analysis.**one ton one mile, item 118 of Analysis.*

Item 2.				Item 3.			
1912.		1915-16.		1912.		1915-16.	
1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.	1st half.	2nd half.
Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
1.79	1.81	1.76	1.41	2.14	1.72	1.41	1.96
2.50	2.92	2.81	2.23	3.52 _a	2.47	2.90	3.58
3.73	3.91	3.36	3.31	2.29	3.17	3.13	2.83
1.22	1.25	1.28	1.13	1.92	1.77	1.60	1.68
2.44	2.69	2.79	2.22	3.07	1.85	1.48	2.46
3.04	3.07	2.58	2.47	2.88	2.51	2.30	2.28
2.25	2.71	2.77	3.33	3.61	3.25	3.00	2.66
3.37	2.42	2.45	2.60	1.55	2.12	1.86	1.48
1.90	2.54	2.52	3.67	2.84	2.21	2.19	2.45
2.92	2.96	2.45	2.21	3.49	3.47	3.78	3.90
1.91	1.87	2.27	2.23	3.47	3.53	3.02	3.61
2.71	3.10	3.10	2.82	3.02	2.40	2.58	3.59
3.08	3.28	2.94	2.66	3.43	3.07	2.19	3.37
2.51	3.07	3.77	3.34	2.98	2.98	2.40	3.91
3.61	4.36	3.32	3.50	3.53	2.55	3.03	2.68
4.54	5.19	4.22	3.75	4.79	3.29	3.61	3.58
4.99	5.33	4.13	4.05	5.38 _a	3.28	4.24	3.44
8.40	8.68	7.63	8.04	5.12	4.24	4.91	6.40
5.33	5.21	5.40	4.85	5.40	1.08	3.50	4.27
36.59	23.69	8.86	12.56	-5.93	6.20	0.78	-0.99
4.82	4.39	5.37	5.16	1.75	0.27	0.09	0.45

from the Railway Board's Report.

APPENDIX No. 13.

State Railways worked by the State—Establishment employed on 30th June 1912.

Service.	Items.	Minimum and maximum monthly pay.	Europeans and Anglo-Indians.		Indians.	
			No.	Monthly pay.	No.	Monthly pay.
Superior Officers.						
	Permanent Engineers ...	1750--2750	9	29,250	...	...
	Permanent Engineers ...	250—1,500	153	1,08,746	15	10,300
	Temporary Engineers ...	200—1,100	54	26,850	11	4,400
	Management ...	1750—3000	6	13,375	...	...
	Traffic Department ...	1100—2000	21	28,200	...	...
	Traffic Department ...	200—1,000	66	35,275	12	5,525
	Locomotive ...	400—2,000	52	40,300	...	...
	Carriage and Wagon ...	300—1,750	14	9,800	...	...
	Stores Departments ...	200—1,100	18	10,250	1	950
	Miscellaneous officers ...	350—1,900	30	20,662	...	...
	Examiners of Accounts	700—1,800	21	26,250	} 3	3,750
	Deputy Examiners of "	400—600	8	4,000		
	Travelling Auditors ...	200—300	3	750			... 1,500
	Total Superior Officers...	...	455	3,53,708	45	26,425
Upper Subordinates.						
	Sub-Engineers ...	250—400	8	2,700	12	3,400
	Supervisors ...	150—200	14	2,400	17	3,000
	Overseers ...	60—100	1	100	14	1,100
	Management Department	250—700	5	1,720	3	1,400
	Permanent Way Inspectors	250—500	43	15,642	4	1,325
	Signal Inspectors ...	300—500	13	4,445	...	...
	Traffic Inspectors ...	250—550	69	22,810	5	1,750
	Locomotive Foremen ...	230—600	150	50,965	...	...
	Carriage and Wagon ...	230—500	41	13,105	...	...
	Stores and Miscellaneous	250—600	9	3,050	2	650
	Medical ...	...	11	(a) 2,200	...	...
	Accountants and Travel- ling Inspectors ...	80—450	61	(a) 16,165	107	28,355
	Total upper Subordinates	...	425	1,35,302	164	40,980

(a) Pay was not given in the Classified List. Figures given here are approximate.

APPENDIX No. 14.

Superior Establishment on Railways worked by Companies and Indian States on 30th June 1912.

Items. Service.	Minimum and maximum. pay.	Officers.			
		European and Anglo-Indian.		Indian.	
		No.	Monthly pay.	No.	Monthly pay.
<i>Railways.—</i>	Rs.		Rs.		Rs.
Assam-Bengal Ry. ...	250—2,500	43	31,687	...	...
B. & N. W. Ry. ...	300—2,750	70	47,575	...	...
Bengal-Nagpur Ry. ...	250—3,000	129	99,759	7	3,362
B. B. & C. I. Ry. ...	250—3,500	135	1,08,175	3	1,275
Burma Ry. ...	325—3,000	96	71,580	1	325
East Indian Ry. ...	250—3,500	184	1,54,695	4	1,595
G. I. P. Ry. ...	150—3,500	183	1,47,107	3	1,350
H. H. Nizam's Gd. Ry.	400—2,850	34	29,505	2	1,235
M. & S. M. Ry. ...	250—3,500	108	86,845	6	2,300
R. & K. Ry. ...	150—1,800	20	11,800	...	...
South Indian Ry. ...	250—3,000	86	70,075	2	850
Total Companies ...		1,088	8,58,803	28	12,292
<i>Departments.—</i>	Rs.		Rs.		Rs.
Agency ...	350—3,500	41	63,362	3	1,800
Engineering ...	150—2,500	439	3,15,952	6	2,667
Traffic ...	150—2,500	233	1,69,049	5	1,995
Loco. & Carriage ...	300—2,500	178	1,53,481	...	...
Stores ...	250—1,750	42	27,677	1	325
Medical ...	250—1,750	43	37,340	3	900
Audit and Accounts...	250—2,500	84	71,902	10	4,605
Collieries, Jetty, Marine, Printing & Electrical.	350—1,800	28	20,040	...	...
Total principal Coys.		1,088	8,58,803	28	12,292
Minor Companies ...	250—2,500	19	13,207	3	1,250
Barsi Light Ry. Coy.	...	4	...	...	...
J. B. Ry. ...	300—1,500	16	10,895	1	450
Other Indian States...	75—1,050	16	10,090	10	2,730
Grand Total ...		1,143	8,92,995	42	16,722

APPENDIX No. 16.

Railway Administrations in India and original names of Railways comprised in each administration on 31st March 1918.

111

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route-miles on 31st March 1918.				Total.
			5'-6" Gauge.	3'-3 $\frac{3}{8}$ " Gauge.	2'-6" Gauge.	2'-0" Gauge.	
	I.—GOVERNMENT ADMINISTRATIONS.	I					
1	<i>Eastern-Bengal State Railway</i> :—						
	Eastern Bengal	(a) I	413·57	.....	.....	.....	.....
	Calcutta and South-Eastern	(a) I	28·00	.....	.....	.....	.....
	Bengal Central	(f) I	127·69	.....	.....	.....	.....
	Sara-Sirajganj	(e) IV	53·12	.....	.....	.....	.....
	Northern Bengal	(b) I	.....	977·72	.....	.....	.....
	Cooch Behar	(c) XII	.....	33·09	.....	.....	.....
	Mymensingh-Jamalpur-Jagannathganj.	(e) IV	.....	56·05	.....	.....	.....
	Ranaghat-Krishnagarh	(f) I	.....	.....	20·25	.....	.....
	Teesta-Kurigam	(b) I	.....	.....	14·85	.....	.....
			622·38	1,066·86	35·10	.....	1,724·34
2	Jorhat (Assam Provincial Administration).	(b) I	.....	.....	.....	32·50	32·50
3	<i>North-Western State Railway</i> :—	I					
	S. P. and D.	(a) I	737·00	.....	.....	.....	.....
	Panjab Northern	(b) I	420·00	.....	.....	.....	.....
	Indus Valley	(b) I	653·00	.....	.....	.....	.....

INDIAN RAILWAYS.

Sindh-Sagar	...	...	(b) I	342-91	.....	.....	.....	.....
Sindh-Pishin	...	...	(b) I	336-75	.....	.....	.....	.....
Amritsar-Pathankot	...	...	(b) I	66-70	.....	.....	.....	.....
Other extensions and branches	...	...	(b) I	1,133-91	.....	.....	.....	.....
Jammu-Kashmir	...	...	(c) XII	16-01	.....	.....	.....	.....
Rajpur-Bhatinda	...	...	(c) XII	108-04	.....	.....	.....	.....
Amritsar-Patti	...	...	(e) IV	54-26	.....	.....	.....	.....
Mandra-Bhaun	...	...	(e) IV	46-38	.....	.....	.....	.....
Jullandhar Mukerian	...	...	(e) IV	44-81	.....	.....	.....	.....
Khanpur-Chachran	...	...	(c) XII	22-02	.....	.....	.....	.....
Ludhiana-Dhuri-Jakhal	...	...	(c) XII	78-65	.....	.....	.....	.....
Phagwara-Rahon	...	...	(e) IV	45-21	.....	.....	.....	.....
Sialkot-Narowal	...	...	(e) IV	38-16	.....	.....	.....	.....
Southern Panjab—Main line	...	...	(e) IV	425-92	.....	.....	.....	.....
Jullundar-Doab Extension	...	...	...	130-19	.....	.....	.....	.....
Ludhiana Extension	...	...	...	152-04	.....	.....	.....	.....
Jacobabad-Kashmor	...	...	(e) IV	.....	.....	76-70	.....	.....
Kohat-Thal	...	...	(b) I	.....	.....	61-75	.....	.....
Nowshera-Dargai	...	...	(b) I	.....	.....	40-40	.....	.....
Trans-Indus (Kalabagh-Bannu)	...	...	(b) I	.....	.....	135-38	.....	.....
Kalka-Simla	...	...	(f) I	.....	.....	59-92	.....	.....
				4,851-96	.....	374-15	.....	5,226-11
4 Oudh and Rohilkhand State Railway:—			I					
Oudh and Rohilkhand	...	...	(a) and (b) I	1,509-77	.....	.....	.....	.....

APPENDIX No. 16.—(Continued).

Railway administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route-miles on 31st March 1918.				
			5'-6" Gauge.	3'-3 $\frac{3}{8}$ " Gauge.	2'-6" Gauge.	2'-0" Gauge.	Total.
	Hardwar-Dehra	(e) III	32·04	.....	.....	.....	.....
			1,541·81	.....	.....	.....	1,541·81
	Total head I ...		7,016·15	1,066·86	409·25	32·50	8,524·76
	II.—INDIAN STATES' ADMINISTRATIONS.	XI					
5	Bhavnagar Durbar—Bhavnagar State Railway	(c)	.....	206·31	} .....	.....	249·02
	Dhrangadhara State Railway	(c)	.....	42·71			
6	Cutch Durbar—Cutch State Railway ...	(c)	.....	36·78	.....	.....	36·78
7	Dhoulpur Durbar—Dhoulpur-Bari State Railway	(c)	.....	.....	} 36·38	.....	51·63
	Mohari-Barauli	(c)	.....	.....				15·25
8	Gondal-Porebunder Durbars—Gondal-Porebunder State Railway	(c)	.....	148·01	} .....	.....	231·44
	Jetalsar-Rajkot State Railway	(c)	.....	46·21			
	Khijadia-Dhari	(c)	.....	37·22			
9	Gwalior Durbar—Gwalior Light Railway	(c)	.....	.....	.....	249·96	249·96

10	<i>Jodhpur Bikaner Durbars—Jodhpur</i>						
	State Railway	(c)	.....	608-75	.....	.....	} 1,355-57
	Bikaner State Railway	(c)	.....	497-66	.....	.....
	Pipar-Bilara	(c)	.....	.....	.....	25-25	
	Jodhpur-Hyderabad	(b) II	.....	123-98	.....	.....
	Mirpurkhas-Jhudo	(e) VI	.....	50-43	.....	.....
	Mirpurkhas-Khudro	(e) VI	.....	49-50	.....	.....
11	<i>Junagarh Durbar—Junagarh State Ry...</i>	(c)	.....	120-90	.....	.....	120-90
12	<i>Morvi Durbar—Morvi State Railway ...</i>	(c)	.....	73-94	18-89	.....	92-83
13	<i>Mysore Durbar—Kolar District Railway.</i>	(c)	.....	.....	63-51	.....	} 231-80
	Tarikere-Narsimha Rajpura	(c)	.....	.....	.....	26-60	
	Bangalore-Chik Ballapur Light Railway.	(e) XIII	.....	.....	38-74	.....
	Mysore-Arsikere	(c)	.....	102-95	.....	.....
14	<i>Navanagar Durbar—Jamnagar State Ry.</i>	(c)	.....	54-22	.....	.....	54-22
15	<i>Udaipur Durbar—Udaipur-Chitorgarh...</i>	(c)	.....	67-30	.....	.....	67-30
	Total head II ... ..	...	.....	2,266-87	172-77	301-81	2,741-45
	III.—COMPANIES ADMINISTERING RAILWAYS ON BEHALF OF GOVERNMENT.	II					
	A. OLD GUARANTEED COMPANIES WITH REVISED CONTRACTS.						
16	<i>East Indian Railway Company—</i>	II					
	East Indian Railway	(a) II	2,340-53	.....	.....	.....	.....
	Nalhati Railway	(f) II	27-23	.....	.....	.....	.....
	Patna-Gaya State Railway	(b) II	57-68	.....	.....	.....	.....
	Dildarnagar-Ghazipur	(b).II	12-00	.....	.....	.....	.....

APPENDIX No. 16.—(Continued).

Railway administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route-miles on 31st March 1918.				Total.
			5'-6" Gauge.	3'-3 $\frac{3}{8}$ " Gauge.	2'-6" Gauge.	0'-0" Gauge.	
	Tarkessur	(f) II	22·21	.....	.....	.....	.....
	Delhi-Umbala-Kalka	(e) VI	206·40	.....	.....	.....	.....
	South-Bihar	(e) IV	79·19	.....	.....	.....	.....
	Jind-Panipat	(c) XII	25·90	.....	.....	.....	.....
	Devghur Branch	(f) II	4·12	.....	.....	.....	.....
	Total		2,775·26	.....	.....	.....	2,775·26
17	<i>South Indian Railway Company—</i>	II					
	Great Southern of India	(a) II	} 445·94	881·49	.....	.....	.....
	Carnatic Railway	(a) II					
	Indian Tramway Company	(f) II					
	Nilgiri Railway	(f) II					
	Peralam-Karaikkal	(e) XIV	.....	28·96	.....	.....	.....
	Podanur-Pollachi	(g) IX	.....	14·65	.....	.....	.....
	Pondicherry	(r) XIV	.....	25·04	.....	.....	.....
	Shoranur-Cochin	(c) XII	.....	7·85	.....	.....	.....
	Tanjore District Board Railway	(g) IX	.....	64·75	.....	.....	.....
	Tinnevely-Quilon (Travancore)—British Section	(b) II	.....	111·94	.....	.....	.....
			.....	50·41	.....	.....	.....

	Travancore State	(c) XII	.....	95.96	.....	.....	.....
	Morapur-Hosur	(d) II	.....	.....	73.40	.....	.....
	Tirupattur-Krishnagiri	(d) II	.....	.....	25.38	.....	.....
	Surmangalam-Salem	(g) IX	3.86	.....	.....	.....	.....
	Total		449.80	1,281.05	98.78	.....	1,829.63
18	<i>G. I. P. Railway Company—</i>	II					
	G. I. P. Railway	(a) II	1,536.32	.....	.....	.....	.....
	Dhond-Manmad	(b) II	145.44	.....	.....	.....	.....
	Khamgam-Amraoti	(b) II	13.46	.....	.....	.....	.....
	Wardha Coal State Railway	(b) II	45.39	.....	.....	.....	.....
	Sindhia State Railway	(b) II	76.49	.....	.....	.....	.....
	Bhopal-Itarsi—British Section	(b) II	12.66	.....	.....	.....	.....
	Bhopal State Section	(c) XII	44.56	.....	.....	.....	.....
	Indian Midland	(d) II	736.03	.....	.....	.....	.....
	Agra-Delhi Chord	(b) II	125.88	.....	.....	.....	.....
	Baran-Kotah	(b) II	40.29	.....	.....	.....	.....
	Bhopal-Ujjain	(c) XII	113.28	.....	.....	.....	.....
	Bina-Guna-Baran	(c) XII	147.07	.....	.....	.....	.....
	Cawnpore-Banda	(b) II	75.71	.....	.....	.....	.....
	Dhond-Baramati	(e) IV	.....	.....	27.26	.....	.....
	Ellichpur-Yeotmal	(e) IV	.....	.....	117.66	.....	.....
	Matheran Light Railway	(e) VI	.....	.....	.....	12.61	.....
	Pulgaon-Arvi	(e) IV	.....	.....	21.83	.....	.....
	Total		3,112.58	.....	166.75	12.61	3,291.94

APPENDIX No. 16.—(Continued).

Railway Administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route—miles on 31st March 1918.				Total.
			5'—6" Gauge.	3'—3 $\frac{3}{8}$ " Gauge.	2'—6" Gauge.	2'—0" Gauge.	
19	<i>B. B. & C. I. Railway Company:—</i>	II					
	B. B. & C. I. Railway	(a) II	391·30	39·05	.....	.....	.....
	Patri State Railway	(b) II	22·12	.....	.....	.....	.....
	Godhra-Rutlam-Nagda	(b) II	141·14	.....	.....	.....	.....
	Nagda-Muttra	(b) II	339·10	.....	.....	.....	.....
	Bayana-Agra	(b) II	50·61	.....	.....	.....	.....
	Baroda-Godhra Chord	(b) II	43·67	.....	.....	.....	.....
	Nagda-Ujjain	(c) XII	32·51	.....	.....	.....	.....
	Petlad-Cambay:—	(c) XII					
	Baroda-State ... ..	...	21·42	.....	.....	.....	.....
	Cambay State ... ..	...	12·36	.....	.....	.....	.....
	Tapti-Valley Railway	(e) IV	155·72	.....	.....	.....	.....
	Rajputana-Malwa State Railway	(b) II	9·18	939·90	.....	.....	.....
	Holkar-State Railway	(b) II	.....	86·89	.....	.....	.....
	Sindhia-Neemuch	(b) II	.....	156·48	.....	.....	.....
	Western Rajputana	(b) II	.....	82·36	.....	.....	.....
	Rewari-Fazilka	(b) II	.....	262·45	.....	.....	.....
	Cawnpore-Achnera including Muttra-Hathras Light Railway, and Cawnpore-Farukabad State Railway	(b) II	.....	254·48	.....	.....	.....

1711

INDIAN RAILWAYS

Palanpur-Deesa	...	...	...	(b) II	.....	17-28	.....	.....	.....
Ahmedabad-Dholka	...	...	...	(e) IV	.....	33-54	.....	.....	.....
Ahmedabad-Prantelj	...	...	...	(e) IV	.....	88-70	.....	.....	.....
Gaekwar's Mehsana	...	...	...	(c) XII	.....	162-63	.....	.....	.....
Jaipur State Railway	...	...	...	(c) XII	.....	108-04	.....	.....	.....
Vijapur-Kalol-Kadi	...	...	...	(c) XII	.....	46-11	.....	.....	.....
Billimora-Kalamba	...	...	...	(c) XII	.....	.....	34-93	.....	.....
Broach-Jambusar	...	...	...	(b) II	.....	.....	29-69	.....	.....
Gaekwar's Dabhoi	...	...	...	(c) XII	.....	.....	153-94	.....	.....
Kosamba-Zankhvav	...	...	...	(c) XII	.....	.....	26-10	.....	.....
Bodeli-Chhota Udaipur	...	...	...	(c) XII	.....	.....	22-56	.....	.....
Petlad-Vaso	...	...	...	(c) XII	.....	.....	19-25	.....	.....
Rajpipla State Ry.	...	...	...	(c) XII	.....	.....	39-24	.....	.....
						1,219-13	2,277-91	325-71	3,822-75
						7,556-77	3,558-96	591-24	12-61	11,719-58
Total head III A								
III. B.—NEW COMPANIES FORMED AFTER 1882.										
20	Madras and S. M. Railway Company—			II						
	Madras Railway	(a) II	1,031-73
	Kolar Gold Fields	(c) XII	9-88
	Tenali-Repali	(g) IX	21-50
	Southern Marhatta	(d) II	1,518-13
	Bezwada-Masulipatam	(g) IX	51-80
	Birur-Shimoga	(c) XII	37-92

APPENDIX 16.

112

APPENDIX No. 16.—(Continued).

Railway Administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route-miles on 31st March 1918.				Total.
			5'-6" Gauge.	3'-3 $\frac{3}{8}$ " Gauge.	2'-6" Gauge.	2'-0" Gauge.	
	Dhone-Kurnool	(b) II	.....	32-00	.....	.....	.....
	Hindupur	(c) XII	.....	51-35	.....	.....	.....
	Kolhapur State Railway	(c) XII	.....	29-27	.....	.....	.....
	Mysore-Nanjangarh	(c) XII	.....	15-80	.....	.....	.....
	Mysore State Railway	(c) II	.....	296-28	.....	.....	.....
	Sangli State Railway	(c) XII	.....	4-90	.....	.....	.....
	W. I. Portuguese Railway	(e) XIV	.....	51-10	.....	.....	.....
	Total ... ..	...	1,063-11	2,088-55	.....	.....	3,151-66
21	<i>Bengal Nagpur Railway Company—</i>	II					
	Nagpur-Chhattisgarh	(b) II	145-26	.....	.....	.....	.....
	Katni-Umaria	(b) II	35-88	.....	.....	.....	.....
	East-Coast, Northern Section	(b) II	321-55	.....	.....	.....	.....
	Bengal-Nagpur	(d) II	1,385-95	.....	.....	.....	.....
	Gondia-Chanda Extension	(d) II	.....	.....	217-25	.....	.....
	Jubbulpur-Gondia Extension	(d) II	.....	.....	311-81	.....	.....
	Mourbhanj State Railway	(c) XII	.....	.....	32-41	.....	.....
	Nagpur-Chhindwara	(d) II	.....	.....	97-20	.....	.....

	Parlaki Medi Light Railway	(c) XII	.....	.....	24·62	.....	.....
	Purulia Ranchi Branch	(d) II	.....	.....	115·30	.....	.....
	Raipur-Dhamtari Branch	(d) II	.....	.....	56·94	.....	.....
	Tumsar-Tirodi Light Railway	(b) II	.....	.....	.....	51·10	.....
	Total ... ..	...	1,888·64	.....	855·53	51·10	2,795·27
22	<i>Assam-Bengal Railway Company—</i>	II					
	Assam-Bengal Railway including						
	Noakhali Branch	(d) II	.....	869·41	.....	.....	.....
	Mymensingh Bhairab Bazar	(e) V	.....	87·93	.....	.....	.....
	Total ... ..	...	.....	957·34	.....	.....	957·34
23	<i>Burmah Railways Company—</i>	II					
	Burmah Railways including Rangoon						
	and Irrawadi Valley State Railway.	(b, d) II	.....	1,341·85	.....	.....	.....
	Extensions	(d) II	.....	186·93	.....	.....	.....
	Southern Shan States Railway	(d) II	.....	69·68	.....	.....	.....
	Total ... ..	...	.....	1,598·46	.....	.....	1,598·46
	Total head III B ... ..	...	2,951·75	4,644·35	855·53	51·10	8,502·73
	Total head III ... ..	...	10,508·52	8,203·31	1,446·77	63·71	20,222·31

APPENDIX No. 16.—(Continued).

Railways Administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of administration and of Railways comprised in each system.	Classified head.	Route—miles on 31st March 1918.				Total.
			5'—6" Gauge.	3'—3½" Gauge.	2'—6" Gauge.	2'—0" Gauge.	
	IV.—COMPANY GUARANTEED BY AN INDIAN STATE.						
	<i>The Nizam's Guaranteed State Railway Company—</i>						
	N. G. State Railway	(c) XIII	330·13	.....	.....	.....	.....
	Bezwada Extension	(b) II	21·47	.....	.....	.....	.....
	Hingoli Branch	(c) XII	.....	50·31	.....	.....	.....
	Hyderabad-Godawari Valley Ry.	(e) XIII	.....	391·13	.....	.....	.....
	Secunderabad-Gadwal	(c) XII	.....	103·30	.....	.....	.....
	Total ... ..	...	351·60	544·74	.....	.....	896·34
	V.—SUBSIDIZED COMPANIES WORKING STATE RAILWAYS JOINTLY WITH THEIR OWN LINES.						
25	<i>B. & N. W. Railway Company—</i>						
	B. & N. W. Railway	(e) VI	.....	1,241·65	.....	.....	.....
	Tirhut State Railway	(b) II	.....	785·28	.....	.....	.....
	Sagauli-Raxaul	(f) II	.....	18·72	.....	.....	.....

1211

INDIAN RAILWAYS.

	Cawnpore-Burhwal	...	...	(b) II	.....	80·34	.....	.....	.....
	Oudh and Rohilkhand	...	...	(b) II	.....	2·18	.....	.....	.....
	Total	...	...	...	.....	2,128·17	.....	.....	2,128·17
26	<i>Rohilkhand and Kumaon Railway Co.—</i>								
	Rohilkhand and Kumaon Railway	...	...	(e) VI	.....	258·72	.....	.....	.....
	Lucknow-Bareilly	...	...	(b) II	.....	312·43	.....	.....	.....
	Powayan Light Railway	...	...	(e) VI	.....	.....	38·86	.....	.....
	Total	...	...	...	.....	571·15	38·86	.....	610·01
	Total head V	...	...	...	.....	2,699·32	38·86	.....	2,738·18
	VI.—COMPANIES ADMINISTERING THEIR OWN RAILWAYS—								
27	Ahmadpur-Katwa Railway Company	...	...	(e) III	.....	.....	32·26	.....	32·26
28	Arrah-Sasaram	...	...	(e) X	.....	.....	65·16	.....	65·16
29	Assam Railways and Trading Co.—								
	Dibru-Sadiya	...	...	(e) VII	.....	86·02	.....	.....	.....
	Ledo and Tikak Margherite Colliery	...	...	(e) VIII	.....	5·50	.....	.....	91·52
30	Bakhtiarpur-Behar	...	...	(e) X	.....	.....	33·00	.....	33·00
31	Bankura-Damoodar	...	...	(e) III	.....	.....	59·95	.....	59·95
32	Baraset-Basirhat	...	...	(e) X	.....	.....	52·24	.....	52·24
33	Barsi Light Railway	...	...	(e) VI	.....	.....	117·50	.....	117·50

APPENDIX No. 16.—(Concluded).

Railway administrations in India and Railways comprised in each administration on 31st March 1918.

Serial No.	Name of Administration and of Railways comprised in each system.	Classified head.	Route—miles on 31st March 1918.				Total.
			5'—6" Gauge.	3'—3 $\frac{1}{2}$ " Gauge.	2'—6" Gauge.	2'—0" Gauge.	
34	Bengal Doars Railway Company ...	(e) X	.....	36·40	.....	.....	.....
	Extensions	(e) VI	.....	116·56	.....	.....	152·96
35	Bengal Provincial Railway Coy.—	VIII	.....	.....	33·27	.....	.....
	Dasghara-Jamalpur Ganj	(e) III	.....	.....	8·31	.....	41·58
36	Burdwan-Katwa	(e) III	.....	.....	32·52	.....	32·52
37	Darjeeling-Himalayan	(e) VII	.....	.....	.....	51·00	.....
	Extension	(e) IV	.....	.....	.....	95·44	146·44
38	Dehri-Rohtas	(e) VI	.....	.....	23·83	.....	23·83
39	E. I. Distilleries Sugar Factories Limited,						
	Madras	(e) VIII	.....	.....	.....	18·00	18·00
40	Guzerat Railways Company:—						
	Champaner-Shivrajpur—Pani Light						
	Railway	(e) IV	.....	.....	32·40	.....	.....
	Godra-Lunavada	(e) IV	.....	.....	25·45	.....	.....
	Nadiad-Kapadvanj	(e) IV	.....	.....	28·01	.....	85·86
41	Howrah-Amta	(e) X	.....	.....	.....	43·87	43·87
42	Howrah-Sheakhala	(e) X	.....	.....	.....	19·75	19·75
43	Jagadhri Light Railway	(e) VIII	.....	.....	.....	3·31	3·31
44	Jessore-Jhenida	(e) X	.....	.....	36·75	.....	36·75
45	Kalighat-Falta Railway Company ...	(e) III	.....	.....	25·33	.....	25·33

131

INDIAN RAILWAYS.

46	Madaya Light Railway	...	...	(e) VIII	.....	.....	16-00	.....	16-00
47	Shahdara-Saharanpur	...	...	(e) VI	.....	.....	92-50	.....	92-50
48	Tezpore-Balipara	...	...	(e) X	.....	.....	20-10	.....	20-10
	Total head VI	...	...		.....	244-48	734-58	231-37	1,210-43
	Grand Total I to VI	...	...		17,876-27	15,025-58	2,802-23	629-39	36,333-47
49	Calcutta Port Commissioners' Ry.	...	...		15-34	.....	.....	.....	15-34
50	Bombay Post Trust Railway	...	...		6-00	.....	.....	.....	6-00
					17,897-61	15,025-58	2,802-23	629-39	36,354-81

(a) Old Guaranteed Companies' lines purchased by Government with or without extensions made by Government.

(b) State Railways constructed by Government.

(c) Indian State Railways.

(d) State Railways constructed through Agency Companies.

(e) Other Companies' lines under classified heads.

(f) " " " purchased by Government.

(g) District Boards' Railways.

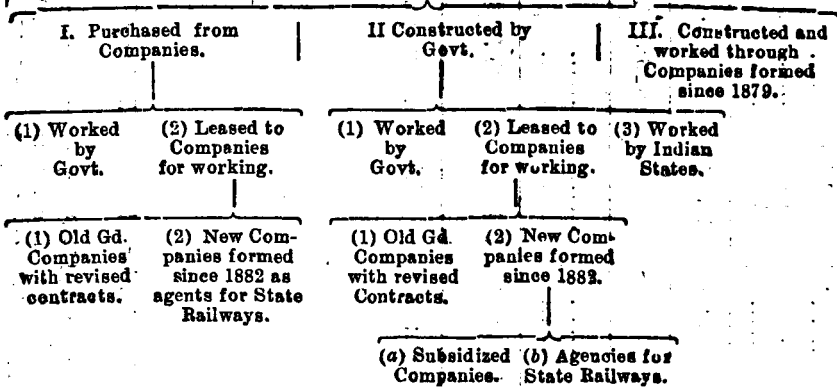
a, b, d, f, are State Railways.

NOTE 1.—The Roman figures in Column 3 indicate the head of classification by the Railway Board as shown in Appendix 17.

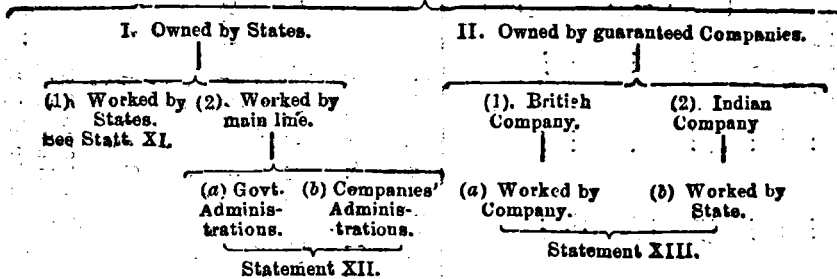
NOTE 2.—424 Miles of open line track were dismantled during the year 1917-18, in order to provide rails for the war. The lines dismantled were the whole of the Sutlej Valley Railway and small portions of N. W., E. I., M. & S. M. and O. & R. Railways (Administration Report, Vol. I page 29 for 1917-18 and page 14 for 1919-20).

APPENDIX 15.

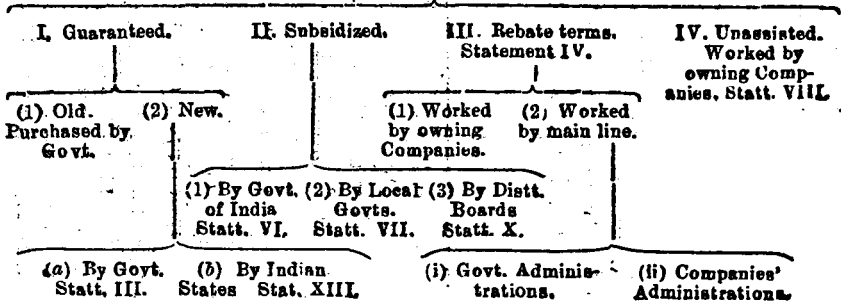
I.—British Indian State Railways.



II.—Indian State Railways.



III.—Companies' Railways.



APPENDIX 17.—Mileage and Capital cost of Indian Railways on 31st March 1918.

Classification of Railways.	Open mileage.	Capital liability for State Railways & capital cost in thousands of rupees provided by—				REMARKS.
		Government and Local Bodies.	Indian States.	Companies.	Total.	
I. State Rys. worked by State	7,112·07	1,61,47,14	1,61,47,14	(a) Total of Appendix 5 to Ry. Board's Administration Report ... 367,438,689 Less share of Travancore State... 461,557 £366,977,132 = = Rs 5,50,46,56,980
II. Ditto. worked by Companies	19,071·37	2,97,86,49	.....	91,12,94	3,88,99,43
III. Companies under guarantee	26,183·44	4,59,33,63	.....	91,12,94	5,50,46,57
IV. " on Rebate Terms	190·41	..	.....	1,23,28	1,23,28
V. " on guarantee and Rebate ...	1,828·04	...	.....	614,22,01	14,22,01
VI. Companies subsidized by Government of India ...	87·93	...	.....	99,23	99,23
VII. Companies subsidized by Local Governments ...	2,208·56	...	.....	16,08,87	16,08,87
VIII. Unassisted Companies ...	137·02	...	.....	1,63,45	1,63,45
IX. District Board Railways ...	76·08	...	.....	33,50	33,50
X. Companies subsidized by District Boards ...	214·14	1,07,61	.....	...	1,07,61
XI. I. S. Rys. worked by I. S.	307·27	1,46,51	1,46,51	Totals of heads III to XIV given in Appendix 4 to Railway Board's Administration Report for 1917-18 = Rs. ... 66,04,58,000 Add South Behar Company included in (b) ... 1,19,77,000 Add Share of Travancore State included in (c) ... 1,67,42,000 68,91,77,000 Add (a) 5,50,46,56,980
XII. " worked by Main Line.	2,478·80	...	9,50,29	...	9,50,29	
XIII. Companies guaranteed by Indian States ...	1,788·18	...	11,61,35	...	11,61,35	
XIV. Rys. in foreign territories worked by British Companies ...	760·00	...	.....	8,68,27	8,68,27
	73·60	2,07,40	2,07,40	
Total ...	36,333·47	4,60,41,24	21,11,64	1,37,85,46	6,19,38,34	Total 6,19,38,33,980

APPENDIX 17.

Lxvii.

APPENDIX I.

State Railways worked by the State.

Name of Railway.	Mileage open on 31st March 1918.	Capital liability on 31st March 1918.	Percentage of net earnings on capital outlay for last three years.
1. Eastern Bengal—		£	
Broad-gauge ...	569·26	25,745,757	{ 4·04 4·34 3·57 3·67 5·25 5·08
Metre-gauge ...	977·72		
2'-6" Gauge ...	35·10		
	1,582·08		
2. North Western—		60,878,448	{ 4·41 5·94 7·90
Broad-gauge ...	3,690·27		
2'-6" gauge ...	297·45		
	3,987·72		
3. Oudh & Rohilkhand.		18,851,052	{ 5·28 7·02 8·21
Broad-gauge ...	1,590·77		
Metre-gauge ...	Shown in Appd. II.		
4. Jorhat (Assam Provincial Ry.)		74,150	{ 5·04 5·62 2·07
2'-0" gauge ...	32·50		
Miscellaneous Expenditure ...	.....	
		2,472,791	
Total ...	7,112·07	£107,647,626	
Equivalent in rupees at £1 = Rs.15.		= Rs. 1,61,47,14,390	

APPENDIX II.—State Railways worked by Companies

RAILWAY.	Open mileage 31st March 1918.	Gauge.	CAPITAL LIABILITY IN THOUSANDS OF POUNDS.		Working Company.		
			Total.	Subscribed by Company.			
E. I. Ry. System	2,464	5'-6"	55,844	D.18,500	E.I.Co.		
S. I. Ry. System	{ 446 881 25	{ " " 3'-3 $\frac{3}{8}$ " " 2'-6" "	} 12,672	{ S. 1,000 D.2,766	S. I. Co.		
Tinnevely-Quilon	50	3'-3 $\frac{3}{8}$ "				117	D. 114	Do.
Nilgiri ...	29	"	287	.....	Do.	
Dharampuri- Hosur	73	2'-6"	142	.....	Do.	
G. I. P. Railway	} 2,553	5'-6"	{ 57,232 3,243	S. 2,575 D. 3,500	G. I. P. Co.		
Indian midland						126	5'-6"	991	.....	Do.
Agra-Delhi-Chord	40	"	328	.....	Do.	
Baran-Kotah ...	13	5'-6"	273	.....	Do.	
Itarsi- Hoshangabad	76	"	533	.....	Do.	
Cawnpore-Banda	{ 997 1,822 17	5'-6" 3'-3 $\frac{3}{8}$ " " " "	} 35,724	{ S. 2,000 D.1,000	B. B. & C. I. Company.		
B. B. & C. I. Ry. Syst.						30	2'-6"
Palanpur-Dessa						30	2'-6"
Broach-Jambusar	1,032 1,518	5'-6" 3'-3 $\frac{3}{8}$ "	} 30,290	{ S. 5,000 D.4,825	M. & S. M. Company		
M. & S. M. Ry. System						296	"	1,200	D. 1,200	Do.
Mysore State Ry.	32	"	68	.....	Do.	
Dhone-Karnool Railway ...							
B. N. Ry. System	1,889	5'-6"	} 28,499	{ S. 2,995 D.7,874	B. N. Co.		
Tumsar-Tirodi...	798	2'-6"					
	51	2'-0"					

with Boards in London, vide Section 6 (a) of Chapter VI.

Dates of principal Contracts.	FIXED INTEREST ON CAPITAL		SURPLUS PROFITS.		Expiry of Contract.	REMARKS.
	of Government.	of Company.	Government Share.	Company's Share.		
22-12-1879 14-11-1899	4%	4%	$\frac{4}{13}$	$\frac{1}{13}(a)$ $\frac{1}{13}(b)$	31-12-1924	a. Profits up to 25 lakhs b. Excess beyond 25 lakhs. Chairman—Lt. Col. R. Gardiner
24-11-1890 2-3-1909 21-12-1910 ...	$3\frac{1}{2}\%$	Guarantee $3\frac{1}{2}\%$ plus $\frac{1}{2}\%$ surplus in 1911 to 1913	In proportion to Capital subscribed by each		31st December 1945	Chairman—Sir. H. Kimber, Bart. M. P. Managing Director—Mr. N. Priestley.
21-12-1900 5-2-1909 19-3-1909	3%	3%	$\frac{19}{20}$	$\frac{1}{20}$	30th June 1945 30th September or 31st March in any year.	Chairman—Col. F. Fitzbruce R.E.
21-12-1900 8-5-1914	..... .....	..... .....	... ...	... ...	30-6-1925 30th September or 31st March in any year.	
1-4-1907 24-10-1913	4% if earnings admit of it	3 per cent., guaranteed with 1 per cent. extra if earnings admit of it.	In proportion to capital subscribed by each		31-12-1941 or any succeeding 5th year		Chairman—Major A.D. Shelley.
1-6-1882 26-6-1908 ...	..... ..... .....	$3\frac{1}{2}\%$ guarantee in gold.	Do.		31-12-1937	Chairman—Col. W. V. Constable R.E.
15-9-1911	.....	.....	whole	Nil.	30th June or 31st December of any year.	See Section 6 of Chapter VI.
9-3-1887 5-11-1912	$3\frac{1}{2}\%$	$3\frac{1}{2}\%$	$\frac{3}{4}$	$\frac{1}{4}$	31-12-1950	Chairman—Robt. Miller Esqrs., Managing Director—Sir. P. R. Wynne K.C.S.I. K.C.I.E.

APPENDIX II.—(Contd.)—State Railways worked by Companies

RAILWAY.	Open Mileage on 31st March 1918.	Gauge.	Capital liability in thousands of £		Working Company.
			Total.	Subscribed by Company.	
Assam-Bengal Ry.	869	3'-3 $\frac{3}{8}$ "	10,637	{ S 1,500 D. 906 }	A. B. Co.
Burma Railway ...	1,342	"	11,685	{ S 3,000 D 1,250 }	Burma Rys. Company.
Burma Railway Extensions	187	3'-3 $\frac{3}{8}$ "	} 2,491	.....	Do.
Southern Shan States Railway	69	3'-3 $\frac{3}{8}$ "			
Tirhut State Ry.	804	3'-3 $\frac{3}{8}$ "	5,341	.....	B. & N. W. Ry. Coy.
O. & R. Railway Cawnpore-Burhwal	80	"	} Included in Appendix I.	}	} Do.
Benares Cantt. to City ...	2	"			
Lucknow—Bareilly State Railway	312	"	1,347	{ D. 547 S. 200 }	R. & K. Ry. Company
Jodhpur-Hyderabad British Section ...	124	"	301	.....	J. B. Ry.
Bezwada Extension ...	21	5'-6"	83	.....	N. G. S. Ry. Company.
Total ...	19,071	...	259,329	{ 18,270 42,483 60,753 }	Shares Debentures.
Thousands of Rs.	...	...	3,88,99,43	91,12,94	

with Boards in London, vide Section 6 (a) of Chapter VI, p. 344-50.

Dates of principal Contracts	Fixed interest on Capital		Surplus profits.		Expiry of Contract.	Remarks.		
	of Government.	of Company.	Government Share.	Company's Share.				
26-4-1892	3 p.c.	3%	In ratio of Capital expended by each.		31-12-1921	Chairman Sir F. R. Upcott, K.C.V.O., C.S.I. Chairman— Col. A., G. Begbie. Managing Director— W. Home Esq., C.I.E.		
9-3-1897	2½ per cent. on assumed Capital of £5,750,000	2½ per cent. on £3,000,000 Share Capital			3		1	31st December 1928.
22-2-1907 7-4-1913	3½ p.c.	...						Up to ten lakhs ¾ths | ½th Excess beyond ten lakhs. 1¼ths | 1½th	31st December 1919.
Contract	not published.	...	...	...	...
18-2-1890 14-12-1905	5%	...	...	...	31st December 1919.	
21-2-1902	...	...	...	...	...	See page 356.
8-9-1890 5-2-1901	4%	4%	In ratio of their respective shares of capital	...	31st December 1932.	See Chapter VI, Section 6 (a)		
22-12-1900	1st April or 1st October in any year.
6-4-1909	...	...	whole	...	1 January or 1st July in any year on six months' notice from either side	

APPENDIX III.—*Railway Companies under new
see Section 6 (c) of Chapter VI, page 361.*

NAME OF COMPANY.	Contract date.	First opening	Length Miles	Gauge.	Capital Cost in Thousands of rupees.	Dividend per cent. earned.
Hardwar-Dehra (1) ...	26-3-97	1900	32	ft. in. 5—6	30,40	9-15
Burdwan-Katwa ...	1-12-15	1917	33	2—6	17,98	3-75
Ahmadpur-Katwa ...	.....	1917	32	2—6	19,50	2-33
Bankura-Damodar River	.....	1916	60	2—6	35,57	2-31
Kalighat-Falta ...	.....	1917	25	2—6	17,37	5-03
Dasghara-Jamalpur-ganj	.....	1917	8	2—6	2,46	5-38
Total ...	.....	...	190	...	1,23,28	...

IV.—*Railway Companies under Rebate Terms, vide Section 6*

South Bihar ...	7-8-95	1899	79	5—6	1,19,77	4-38
	11-12-06					
Southern Panjab—						
Main line ...	13-8-95	1897	426	5—6	2,73,85	11-20
Ludhiana Extension	4-10-05	1905	152	5—6	93,30	5-37
Sutlej valley ...	24-6-09	1910	208	5—6	1,53,12	5-77
Jullundar-Doab ...	9-7-12	1912	130	5—6	1,32,44	5-82
Mymensing-Jamalpur Jagannathganj (2)	6-1-97	1898	56	3—3½	26,80	11-35
Darjeeling-Himalayan Extension	25-4-14	1914	95	2—0	53,77	3-09
Central Provinces Ry. Co.						
Elichpur-Yeotmal	27-3-16	1913	118	} 2—6	83,86	3-76
Pulgaon-Arvi	.....	1917	22			
Dhond-Baramati ...	.....	1914	27	2—6	11,62	5-03
Carried over ...	.....	...	1,313	...	9,48,53	...

guarantee from Government of India. For further particulars,
Land given free by Government in all cases.

Working agency,	Working Expenses p. c. of gross Receipts	Rebate per cent. of gross Receipts.	Guaranteed interest per cent.	Surplus profits,		Expiry of Contract.	Purchase Price,	Agents or Chairman,
				Government Share,	Company's Share,			
O.&R.Ly.	50	...	3	1	1	31-12-19	25 times average yearly net earnings for preceding 3 years, subject to a Maximum of 100 and Minimum of 100 per cent of Capital expenditure.	(1) Messrs. Gillanders, Arbuthnot & Co., Calcutta.
Owning Company.	3 1/2 to 5	1 1/2 to 1	1 1/2 to 1	31-3-46		
	Contracts not published.		published.			
						
						
						

(d), Chapter VI, p 362-68 Land given free by Government in all cases.

E. I. Ry.	45	30	4	Nil.	whole	30-6-19	£ 684,580 as subscribed Capital.	Sir H. S. Cunningham, London.
N. W. Ry.	52	As much as whole.	3 1/2	1	1	31st Decce. 1929, or 1934, or 1944, or 1954. (a)	Same as in appendix III, average of 5 years, instead of 3. (a) Capital expenditure only.	Sir Bradford Leslie K.C.I.E., London.
			3 1/2	1	1			
			3 1/2	1	1			
			4 1/2	1	1			
E. B. Ry.	45	As much as whole.	3 1/2	Nil.	whole	31-12-19	Same as in Appendix III.	(2) Domicile transferred from Calcutta to London in 1919.
D. H. Ry. Coy.	50		5	1/2	1/2	31-3-46		
G.I.P. Ry.	45		6	1/2	1/2	31-3-45		
G.I.P. Ry.	...	...	Contract	not	not	published.		
.....	

APPENDIX IV.—(Continued)—Railway Companies under
Chapter VI, pages 362-68. Land

NAME OF COMPANY.	Contract date,	First opening.	Length. Miles	Gauge Ft. inch	Capital Cost in thousands of rupees.	Dividend per cent. earned.
Brought forward ...	.....	...	1313	...	9,48,53	...
Ahmedabad-Prantelj	13-3-96	1897	89	3—3 $\frac{3}{8}$	37,23	9.50
	24-11-10					
Tapti Valley ...	28-8-96	1898	156	5—6	1,32,37	8.50
	1-3-21					
Ahmedabad-Dholka...	25-3-02	1903	34	3—3 $\frac{3}{8}$	11,18	6.20
	12-11-08					
Amritsar-Patti ...	22-5-05	1906	54	5—6	34,06	7.75
Guzrat Rys. Company						
Godhra-Lunavada	30-4-14	1913	25	2—6	12,97	0.95
Nadiad-Kapadvanj	30-4-14	1913	28	2—6	14,89	7.92
Champaner-Shivrajpur-Pani	1-4-15	1911	33	2—6	16,25	2.15
Mandra-Bhon ...	15-10-14	1915	46	5—6	23,97	4.75
Sara-Sirajganj (3) ...	14-4-16	1915	53	5—6	86,49	...
Upper Sind Light Ry.						
Jacobabad-Kashmor	29-7-16	1914	77	2—6	21,85	4.53
Hoshiarpur Doab Ry.						
Jallundar-Mukerian	2-2-17	1915	45	5—6	28,89	2.28
Phagwara-Rahon	2-2-17	1915	45	5—6	25,76	4.87
Sialkot-Narowal ...		1915	38	5—6	27,57	4.87
Total ...	.....	...	2036	...	14,22,01	...
Deduct Sutlej Valley dismantled in 1917-18	.....	...	208	5—6	.....	...
Total ...	.....	...	1828	...	14,22,01	...

* Guzrat Rys. Co.—23 times the average net earnings of the last preceding 3 years.

V.—Branch line Companies under

Mymensingh-Bhairab Bazar	1917	88	3—3 $\frac{3}{8}$	99,23
--------------------------	-------	------	----	-------------------	-------	-------

Rebate Terms. For further particulars, see Section 6 (d) of given free by Government in all cases.

Working agency.	Working Expenses p. a. of gross Receipts	Rebate per cent. of gross Receipts.	Guaranteed interest per cent.	Surplus profits.		Expiry of Contract.	Purchase Price.	Agents.
				Government Share.	Company's Share.			
B. B. & C. I. Railway	44	10	5	31-12-30	25 times the average yearly net earnings during last preceding 5 or 3 years, Maximum: 120, Minimum 100% of total Capital outlay.*	Messrs. Killick Nixon & Co., Bombay.
	55	10	8	Nil.	Whole.	31-12-31		
	44	45	4			30-6-22		
N. W. Ry.	45	45	5	1/2	1/2	31-12-35		
Owning Company	...	as much as whole.	5	1/2	1/2	31-12-44		
	N. W. Ry.		50	5	1/2	1/2			31-3-47
E. B. Ry.	50		5	1/2	1/2	31-3-46		
N. W. Ry.	45		5	1/2	1/2	31-3-45		
N. W. Ry.	50		5	1/2	1/2	31-3-46		
N. W. Ry.	Contract		not published.					
.....	
.....	
.....	

or 115 per cent. of the total capital expenditure, whichever may be greater.

Guarantee and Rebate combined.

A. B. Ry. Company	Contract	not	published.			
-------------------	-----	-----	----------	-----	------------	--	--	--

Appendix VI.—Companies' Railways subsidized by the Govern-

NAME OF COMPANY.	Date of contract.	Year of first opening.	Length.		Capital Thousands of Rupees.	Dividend earned. per cent. on Capital.
			Miles.	Ft. In.		
R. & K. ...	12-10-82	1884	259	3-3 $\frac{3}{8}$	1,68,16	7.42
B. & N. W. ...	12-12-82 22-2-86	1884	1242	3-3 $\frac{3}{8}$	9,78,24	6.81
D. U. K. ...	12-2-89 9-6-97	1891	206	5-6	1,95,27	9.67
Powayan ...	18-12-89 1-7-01	1890	39	2-6	8,95	4.47
Barsi Light Ry.	1-8-95	1897	118	2-6	86,03	4.83
Bengal Doars Extension ...	2-3-98 6-7-16	1901	116	3-3 $\frac{3}{8}$	1,08,54	7.15
Shahdara-Sahranpr	11-10-05	1907	92	2-6	44,63	8.31
Dehri-Rohtas ...	13-10-07	1911	24	2-6	6,70	20.77
Matheran ...	30-10-09	1907	13	2-0	11,43	2.32
Sind Light Ry— Mirpur-Khas Jhudo	13-7-11	1909	50	3-3 $\frac{3}{8}$	7,32	11.21
Do. Khadro	9-6-13	1912	50	3-3 $\frac{3}{8}$	8,23	6.22

ment of India, see Section 6 (b) of Chapter VI, pages 350—61.

Government aid.	Working Agency.	Working expenses per cent. of Gross receipts.	Fixed interest per cent.	Surplus Profits.		Expiry of Contract.	Purchase price.
				Government Share.	Company's Share.		
Land free and Subsidy	Owning Company	...	6	$\frac{1}{2}$	$\frac{1}{2}$	31-12-32	25 times the average yearly net earnings less Government share of Surplus 3 or 5 years preceding purchase. Chairman—Alex. Lat Esq., C.I.E.
Land free	Owning Company	...	6	$\frac{1}{2}$	$\frac{1}{2}$	31-12-32	
Land free	E. I. Ry.	48	$3\frac{1}{4}$	Nil.	whole	31-12-26	25 times ditto. See Kalka Simla Ry. page 360.
Free use of Govt. road.	R. & K. Ry	60	...	...	whole	31-12-27	Value of property as a dividend earning investment, with an additional bonus of 20 per cent. over such value.
Land mostly free.	Owning Company	...	...	...	whole	1-1-44	Par value in British territory; 5 per cent. in excess of capital expenditure in Nizam's territory. Chairman—G. A. Anderson, Esqr.
Land free	"	...	...	...	...	31-12-19 30-6-26	25 times annual average earnings. Maximum 120, Minimum 100 per cent. of capital outlay. Chairman—Robt. Miller Esqr.
Land and portion of local road free.	"	...	4	$\frac{1}{2}$	$\frac{1}{2}$	15-10-18 15-10-25	Ditto. Maximum 125. Agents—Messrs. Martin and Co. Calcutta.
Free use of road.	"	...	...	...	whole	13-10-28	20 times ditto. Maximum 125. Agents—Messrs. Octavius Steel & Co., Calcutta.
Govt. land free	G.I.P.Ry.	Actual expenses	...	...	"	On six months' Notice. 31-12-28	25 times ditto. No Maximum or Minimum.
} Land free	} J.B.Ry	40	...	...	"	} 1-1-33	} 25 times ditto. Maximum 120.

Appendix VII.—Companies subsidized by

Name of Company.	Date of Contract.	Year of first opening.	Length. Miles	Gauge.	Capital cost in thousands of Rupees.	Dividend earned.	Government aid.
Darjeeling Himalayan ...	8-4-79	1890	51	Ft. In. 2-0	46,07	6-48	Land free & cash Subsidy.
Dibru-Sadiya ...	26-5-80 28-10-14	1882	86	3-3½	1,17,38	8-97	Do.
Total ...	...	...	137	...	1,63,45	...	.....

VIII.—Unassisted Companies.

Ledo and Tikok Margherita Colliery Ry. ...	30-7-81 26-2-03	1884	5½	3-3½	16,94	2-13	Mines and premises leased to the Coy. at a fixed rental.
Bengal Provincial Ry.	16-10-90	1894	33	2-6	11,98	8-78	Part of land allowed free.
Jagadhri State Ry. ...	15-12-09	1911	3-3	2-0	1,12	1-40	.....
Kulasekara-patnam-Light Railway ...	19-6-14	1915	18	2-0	3,46	15-82	Government land at annual rental of Rs. 10 per mile.
Madaya Light Ry. ...	13-2-06	1912	16	2-6	...	...	Land rented at Rs. 250 annually per track-mile for 3 years and Rs. 400 per mile thereafter.
Total ...	...	...	76	...	33,50	...	.....

Local Governments. Every one working its own Railway.

Fixed interest per cent.	Surplus profits.		Expiry of Contract.	Purchase price.	Agents.
	Govern- ment share.	Com- pany's share.			
5	...	whole.	4-5-09 or at intervals of 10 years thereafter.	20% in excess of the value as a dividend paying investment.	Messrs: Gillanders Arbuthnot & Co., Calcutta.
5	½	½	5-2-21 or ditto.	Ditto.	Assam Rys. and Trad- ing Coy., London.
...

Every one working its own Railway, pages 368-69.

...	...	whole.	Not specified.	Fair value.	Assam Railways and Trading Company.
...	...	do.	After 4 January 1917.	2/5ths in excess of capital outlay.	
...	...	...	11-8-82.	25 times average an- nual net earnings. Maximum 120 Minimum 100 per cent. of capital outlay.	
...	...	whole.	19-6-1964.	.....
...	...	do.	13-2-1948.	Fair market value.	
...	

Appendix IX.—Railways belonging to District

Name of Board and Railway.	Date of first opening.	Length, Miles.	Gauge. Ft. In.	Capital cost in thousands of rupees.	Dividend per cent 1915-16 1916-17.	WORKING-	
						Agency.	Date of Agreement.
TANJORE DISTRICT.							
Mayavaram-Arantangi ...	2.4.94	112	3-3½	66.21	7.35 6.58	S. I. Ry. Co.,	22.7.97
KISINA DISTRICT.							
Bezwaḍa-Masulipatam ...	4.2.08	52	3-3½	22.29	10.40 9.45	M & S M Ry. Co.,	4.2.08 26.6.08
GUNTUR DISTRICT.							
Tenali-Repali ...	18.3.16	21	5-6	14.86	0.13 3.75	"	...
SALEM DISTRICT.							
Surmangalam Salem ...	1.6.17	4	5-6	4.72	...	S. I. Ry.	...
COIMBATORE DISTRICT.							
Podanur-Pollachi ...	15.10.15	25	3-3½	11.37	3.08 7.82	"	...
Total ...	...	214	...	1,19,45	...	...	...
Calcutta Port Commissioners' Railway ...	1.11.75	15	5-6	...	...	...	...
Bombay Port Trust Ry. ...	1.1.15	6	5-6	...	...	...	...

Boards and Port Trusts.

ARRANGEMENTS.		Remarks.
Terms for working.	Expiry of Agreement.	
Working expenses charged at the same percentage on gross receipts as is incurred on S. I. Ry. plus cost of any damage, plus 5 per cent. of gross receipts for use of rolling stock.	31st December in any year, on 12 months' previous notice.	Half of the funds have been provided by the Madras Government from Provincial sources and the other half by the District Board by enhancing the local land cess from 9 to 12 per rupee and by debenture, loan at 4 per cent. interest.
Working expenses charged at 45 per cent. of the gross earnings, plus cost of New Minor Works. Rebate up to 10 per cent. of the Main Line earnings from traffic interchanged with the Branch, to make up a return of $8\frac{1}{2}$ per cent. on capital outlay.	31st December 1937 or any succeeding fifth year.	Government gave the land free of cost, reserving their right to acquire the railway after 30 years at a price of 25 times the average net earnings, not exceeding 120, nor less than 100 per cent. of capital cost.
Contract not published.		
" " "		
" " "		
Owned and worked by the Port Trust. Calcutta Trust pays a quit rent of Rs. 37,292 per annum for the land.		
Owned and worked by the Port Trust.		

Appendix X.—Railway Companies subsidized by

Name of District Board and Railway.	Date of Contract	Date of First opening	Length.		Capital Cost in thousands of Rupees.	Dividend per Cent. last 3 years.	Subsidy.
			Miles	Ft. In.			
JALPAIGURI DIST. Bengal Doars ...	27.4.91	15.1.91	36	3-3½	33,15	7.07 7.37 7.15	Free land and annual Subsidy of Rs. 4,000.
Howrah-Amia ...	26.3.95	1.7.97	44	2-0	26,52	9.68 10.15 10.40	Free use of roads for 20-21 years and cash Subsidy to make up 4 per cent. per Annum.
Howrah-Sheakhala	26.3.95	2.8.97	20	2-0	7,64	8.06 8.56 8.55	
TEZPORE DISTRICT. Tezapore-Balipara Steam Tramway	1.6.95	9.8.94	20	2-6	4,87	9.12 9.55 6.16	Land mostly free, free timber from Govt. forests for sleepers for first construction, Subsidy of Rs. 5,000 yearly up to 1914.
24 PARAGANAS. Baraset-Basirhat ...	14.12.97	1.2.05	52	2-6	93,85	6.40 5.69 3.89	Free use of District Road & Cash Subsidy to make up 4 per cent. on Capital.
PATNA DIST. Bakhtiarpur-Bihar	21.8.99	1.7.03	33	2-6	13,84	8.03 4.57 6.09	Ditto.
SHAHABAD DIST. Ara-Sasaram ...	15.10.09	6.3.11	65	2-6	22,67	3.46 4.42 6.01	Ditto.
JESSORE DISTRICT. Jessore-Jhenidah ...	26.5.13	1.10.13	37	2-6	13,97	...	Ditto.
Total ...	...	...	307	...	1,46,51	...	.....

District Boards, Each Company working its own line.

Fixed rate of interest per cent.	Surplus profits.		Expiry of Contract.	Purchase Price.	Agents.
	District Board's Share.	Company's Share.			
5	...	...	31-12-19	1 $\frac{1}{2}$ ths of invested Capital.	Board in London.
4	$\frac{1}{2}$	$\frac{1}{2}$	26th March 1916 or at end of every seven years thereafter.	Value as a dividend earning investment with a bonus of 20 per cent. thereon. Value of whole line plus a bonus of 20 per cent., by District Board, Howrah; if purchased by D. B. Hooghly, 15 per cent. bonus.	Messrs: Walsh Lovett & Co., Agents of Bengal District Roads Tramway Company.
	$\frac{1}{4}$	$\frac{3}{4}$			
...	Nil.	Whole	1 9 09 there after at terms of 7 years each.	Same as Howrah Amta Railway.	.....
4	$\frac{1}{2}$	$\frac{1}{2}$	15-5-24	Twenty times the average annual net profits during 4 years preceding purchase, with a bonus of 20 per cent. thereon.	Messrs: Martin & Co., Calcutta.
4	$\frac{1}{2}$	$\frac{1}{2}$	25-6-22	Ditto.	Ditto.
4	$\frac{1}{2}$	$\frac{1}{2}$	8-9-34	Ditto. average of 8 years.	Ditto.
4	$\frac{1}{2}$	$\frac{1}{2}$	31 3 43	Ditto. Ditto.	.....
...		

Appendix XI.—Indian State Railways worked by Indian

Name of Railway.	Date of first opening.	Length. Miles.	Gauge. Ft. In.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.
Morvi State Railway	11-3-80	74	3-3½	53,77	9.15
	24-3-87	19	2-6		
Bhavnagar State Railway	20-12-80	206	3-3½	1,23,62	6.45
Dhrangadhra State Railway	1-6-98	43	"	14,12	5.13
Gondal-Porebandar	19-6-81	148	"	76,48	7.21
Jetalsar-Rajkot	12-4-93	46	"	16,53	14.18
Jodhpur State Railway	24-6-82	609	"	2,04,44	13.07
Pipar-Bilara	25-11-10	25	2-0	2,90	4.80
Bikaner State Railway	9-12-91	498	3-3½	1,21,04	8.66
Junagad State Railway	1-9-88	121	"	73,58	5.33
Udaipur-Chitorgarh	1-8-95	67	"	22,84	6.77
Jamnagar State Railway	8-4-97	54	"	24,26	6.08
Gawalior State Railway	2-12-99	250	2-0	75,92	3.42
Cutch State Railway	18-5-05	37	2-6	11,43	4.82
DHOLEPUR STATE RAILWAYS.					
Dholpur-Bari	2-42-08	36	2-6	12,93	2.44
Mohari-Barauli	10-2-17	15			
BARODA-STATE.					
Khijadiya-Dhari	1-3-13	37	3-3½	19,54	0.14
MYSORE STATE RAILWAYS.					
Kolar District	15-12-13	64	2-6	18,74	0.87
Tarikere-Narsimharajapura	15-1-15	27	2-0	5,14	...
Mysore-Aasikere	3-1-18	103	3-3½	81,12	...
Total	• ...	2,479	...	9,58,40	...

States—the owning States except where otherwise remarked.

REMARKS.

Originally constructed on 2 ft.—6 in. gauge; converted to 3 ft. 3½ in. on 4th March 1905.

Worked by the Bhavnagar Durbar.

Worked by the Gondal—Porebandar States.

Constructed and worked jointly by the two Durbars under agreements dated 13th and 30th July 1889 between the Government of India and the Durbars (Appendices M and N to the Administration Report for 1889—90, Part II).

Worked by the G. P. Ry. for 35 to 40 per cent. of gross earnings (subject to a biennial revision) plus actual expenditure on maintenance of Way, Works and Stations, Police charges, joint expenses at Khajadia Junction, and 5 per cent. of gross earnings for hire of Rolling Stock.

Owned jointly by the Mysore Durbar and the Kolar District Board.

Appendix XII.—Indian State Railways worked

Name of State and of Railway.	Date first opening.	Length.		Gauge.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.	Working Agency.	Date of Working Agreement.
		Miles.	Ft. In.					
1 BARODA STATE.								
Dabhoi Railway ...	8-4-73	153.94	2-6	} 62.60	5.17	} B. & C. I. Ry. Company.	1-1-97	
Bodeli-Chhota—Udaipur ...	1-12-17	22.56	„		„			
Kosamba-Zankhvav ...	1-5-12	26.10	„	13.29	Loss.	} B. & C. I. Ry. Company.	6-12-15	
Petlad-Vaso ...	10-12-14	19.25	„	9.00	1.67		17-11-14	
Bilimora-Kalamba ...	23-7-14	34.93	„	15.53	0.22	} B. & C. I. Ry. Company.	17-6-15	
							23-10-14	
Mehsana lines ...	21-3-87	162.63	3-3½	69.04	5.75	„	17-6-93	
Vijapur-Kalol-Kadi ...	10-6-02	46.11	„	16.32	5.21	„	17-6-93	
Petlad-Cambay (Anand-Tarapur) ...	5-5-90	21.42	5-6	12.84	11.52	„	5-5-90 16-5-10	
2 MYSORE STATE.								
Mysore-Nanjangad ...	1-12-91	15.80	3-3½	6.61	6.85	} M. & S. M. Ry. Company.	14-12-99	
Birur-Shimoga ...	1-12-99	37.92	„	24.38	„		2-12-99	
Hindapur (Yeshwantpur) ...	15-12-92	51.35	„	25.26	„	} M. & S. M. Ry. Company.	2-12-90	
Kolar Gold Fields ...	1-6-94	9.88	5-6	12.13	5.80		1-7-02	
3 BHOPAL STATE.								
(a) Bhopal-Itarsi ...	1-6-82	44.56	5-6	50.00	6.86	} G. I. P. Co.,	16-9-80	
							30-6-87	
							2-12-90	
							21-12-00	
(b) Bhopal-Parbati Section of Bhopal-Ujjain Railway ...	11-11-95	31.28	5-6	* 79.00	* 6.39	„	4-8-96 31-1-11	

by the Main Line.

Terms for Working.	Termination of Working Agreement.	Remarks.
<p>The Company work the lines for actual cost <i>plus</i> 10 per cent. of total working expenses but not less than Rs. 1,100 per mensem in the half-year for Superintendence.</p>	<p>30th September or 31st March in any year on one year's notice.</p>	
<p>Excepting cost of extraordinary damages which is chargeable to capital, for maintenance and working including hire of Rolling Stock, the lines are debited with the same percentage of their gross earnings as may be incurred in the half-year on the entire system of B. B. & C. I. Ry. 5 ft. 6 in. & 3 ft. 3½ in. gauges, and with cost of New Minor Works costing Rs. 2,000 or less.</p>	<p>Do.</p>	
<p>With certain reservations, the working expenses for these lines are calculated at the same ratio to their gross earnings as the working expenses of the entire system of the company bear to the total gross earnings of that system.</p>	<p>On 1st January or 1st July in any year on 6 and 12 months' notice.</p>	
<p>For working and stocking the line, the G. I. P. Company receive a sum which bears same proportion to total working expenses of company's undertaking as the gross earnings of the Bhopal State Ry. bear to the gross earnings of that undertaking.</p>	<p>30th June 1925.</p>	<p>Of the capital 50 lakhs were contributed by the Bhopal State and the balance by the Govt. of India. The net earnings or losses are divided by the State and the Govt. in proportion to the capital contributed by each.</p>
<p>Do. do. do.</p>	<p>On 30th June or 31st December of any year on 12 month's notice by either party.</p>	<p>* For the whole line of 113.27 miles from Bhopal to Ujjain.</p>

Appendix XII Continued.—Indian State Railways

Name of State and of Railway.	Date first opening.	Length. Miles.	Gauge. Ft. In.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.	Working Agency.	Date of Working Agreement.
4 SCINDIA (GWALIOR) STATE.							
(a) Ujjain-Parbati ...	11-11-95	82-00	5-6	Included in 8 (b)		G. I. P. Co.	{ 4-8-96 20-3-11
(b) Bina-Guna-Chhabra ...	23-9-95	110-07	"	1,00,54	* 2-50	"	{ 15-7-96 20-3-11
() Nagda-Ujjain ...	15-7-96	32-51	"	22,55	8-29	BB & CI Ry. Co.	15-7-96
5 PATIALA STATE.							
Rajpura-Bhatinda ...	1-11-84	108-04	"	75,78	11-04	N. W. Ry.	30-1-98
6 JAMMU & KASHMIR STATE.							
State frontier to Tawi River ...	15-3-90	16-01	"	10,60	5-76	"	21-4-13
7 KOLHAPUR STATE.							
Miraj-Kolhapur ...	21-4-91	29-27	3-3½	23,26	6-72	M & S M Co.	17-7-91
8 Cooch Bihar State ...	15-9-93	33-09	"	19,77	7-18	E. B. Ry.	25-2-07

Worked by the Main Line.

Terms for Working.	Termination of Working Agreement.	Remarks.
<p>Worked for 50 per cent. of gross earnings, except Guna Chhabra Section which is charged same percentage of its gross earnings as the working expenses of the whole system of the Company bear to the gross receipts of that system.</p>	<p>30th June or 31st December in any year on 12 months' notice.</p>	<p>* For whole line of 146 miles from Bina to Baran. See item 10.</p>
<p>The State is debited with a share of the working expenses of the Company's system in proportion to the total earnings, of the Nagda-Ujjain Railway in each half-year.</p>	<p>31st March or 30th September in any year on 12 Months' notice.</p>	
<p>The Railway is managed, maintained, stocked and worked for 52 per cent. of its gross earnings.</p>	<p>On 1st January or 1st July in any year on 6 months' notice.</p>	
<p>Ditto for 55.50 per cent. ditto. The N. W. Ry. allow a rebate out of their own earnings from traffic interchanged with the Branch to make up, together with its net earnings, a dividend of 3½ per cent. per annum.</p>	<p>Terminable on six months' notice after 1st January 1917.</p>	
<p>Same as in the case of Mysore State Railways No. 2 above.</p>	<p>Six months' notice from either party.</p>	
<p>For management, working and maintenance, the E. B. Ry. retains 40 per cent. of the gross earnings, except when stock of E. B. Ry. is used on the Branch, the E. B. Ry. takes upto 45 per cent. of the gross earnings obtained from the use of such stock.</p>	<p>Do.</p>	

Appendix XII. Continued.—Indian State Railways

Name of State and of Railway.	Date first opening.	Length.		Gauge.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.	Working Agency.	Date of Working Agreement.
		Miles.	Ft. In.					
9 RAJPIPLA STATE.								
Anklesvar-Nandod ...	1-7-97	89-24	2-6	17,13	3-99	BB & CI Ry. Co.	19-3-00	
10 KOTAH STATE.								
Chhabra-Baran ...	15-5-99	87-00	5-6	Included in 4 (b)		G. I. P. Co.	20-2-99 20-3-11	
11 PARLAKIMEDI								
Nanpada-Parlaki-medi ...	1-4-00	24-62	2-6	7,67	0-11	B. N. Ry. Co.	24-1-05	
12 JHIND STATE AND MALER KOTLA STATE.								
(a) Ludhiana-D h u r i - Jakhod ...	10-4-01	78-65	5-6	43,17	10-26	NW Ry.	6-9-99	
(b) Jhind-Panipat ...	1-11-16	25-90	„	16,74	...	E. I. Ry. Co.	Under consideration	
13 CAMBAY STATE.								
Tarapur-Cambay ...	20-6-07	12-36	„	8,81	4-07	BB & CI Co.	17-5-02 10-5-10	
14 COCHIN STATE.								
Shoranur-Ernakulam ...	16-7-02	64-75	3-3½	71,08	4-55	S. I. Ry. Co.	1-1-08	
15 MOURBHANJ STATE.								
Rupsa-Baripada ...	20-1-05	32-41	2-6	7,27	2-24	B. N. Ry. Co.	10-3-05	

Worked by the Main Line.

Terms for Working.	Termination of Working Agreement.	Remarks.
Actual cost of working plus 2½ per cent on total working expenses (not less than Rs. 800 per mensem nor more than Rs. 800 per mensem) in the half-year for supervision.	At end of any financial year on one year's notice.	
Worked for the same percentage of its gross receipts as the working expenses of the whole system of the G. I. P. Railway bear to the gross receipts of that system.	31st March or 30th September in any year on 12 months' notice.	
Worked for actual working expenses.	31st December in any year on 8 months' notice.	
Worked for 52 per cent. of its gross earnings and the balance is paid to the Jhind and Maler-Kotla Darbars in the ratio of ⅔th and ⅓th respectively.	1st January or 1st July in any year on 6 months' notice.	
Managed, maintained, stocked and worked as part of the B. E. & C. I. Railway system.	At any time on 12 months' notice.	
Working expenses are made up of actual cost of renewals plus gross earning proportion of non-renewal expenses incurred, for whole system. Net earnings in excess of 2 p. c. on capital cost in any year are deemed "surplus profits" divisible ⅔ to the Darbar and ⅓ to the Company.	12 months' notice expiring on 30th September or before 31st March in succeeding year.	
Actual working expenses including cost of maintenance are deducted from gross receipts and the balance is paid to the State.	On 31st December in any year on 3 months' notice.	

Appendix XII. Continued.—Indian State Railways

Name of State and of Railway,	Date first opening.	Length.	Gauge.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.	Work ing Agency.	Date of Work- ing Agreement.
		Miles.	Ft. In.				
16 JAIPUR STATE.							
(a) Sanganer—Sawai Madhopur ...	10-11-05	72.84	3-3½	40.97	4.58	B. B. & C. I. Co.	11-9-06
(b) Jaipur—Reengus ...	19-12-16	35.20	3-3½				
		108.04					
17 SANGLI STATE.							
Miraj—Sangli ...	1-4-07	4.90	3-3½	1.83	11.46	M. & S. M. Co.	17-7-07
18 BAHAWALPUR STATE.							
Khanpur—Chachran ...	2-7-11	22.02	5-6	14.00	1.17	N. W. Ry.	21-8-12
19 NIZAM'S STATE.							
(a) Hingoli Branch ...	15-5-12	50.31	3-3½	32.08	1.82	N. G. S. Ry. Co.	1-3-10
(b) Secunderabad—Gadwal ...	1-2-16	103.30	3-3½	82.85	...	Ditto.	...

worked by the Main Line.

Terms for Working.	Termination of Working Agreement.	Remarks.
<p>Managed, maintained, stocked and worked as part of B. B. & O. I. Ry. system. Rebate up to 10 per cent. of net earnings of B. B. & C. Ry, 3—3½ gauge from traffic interchanged with Jaipur State Railway allowed to make up, together with net earnings of J. S. Ry, a return of 3½ per cent. per annum on Capital cost.</p>	<p>Upon opening of extensions, it is open to Government to terminate the arrangement on six months' notice.</p>	<p>The following extensions were under construction:— 1. Reengas to Sikar 31 miles. 2. Sikar to Jhunjhuno 40 miles.</p>
<p>Worked for same percentage of working expenses upon gross receipts as is incurred on Company's system, actuals being charged in both cases for New Minor Works and Government Supervision.</p>	<p>At end of any year upon six months' notice.</p>	
<p>The railway is managed, maintained, stocked and worked for 50 per cent. of its gross earnings. Rebate is allowable from main line net earnings to make up 3 per cent. on Capital outlay.</p>	<p>After 1935.</p>	
<p>The line is worked for the same percentage of its gross earnings as is incurred on the Company's Metre gauge system, PLUS 5 per cent. of the gross receipts of the Branch for use of Rolling Stock, PLUS any extraordinary maintenance charges due to causes other than wear and tear.</p>	<p>30th June or 31st December in any year on 12 months' notice.</p>	
<p>Terms not published.</p>		

Appendix XII.—Indian State Railways

Name of State and of Railway.	Date first opening.	Length.		Gauge.	Capital cost in thousands of Rupees.	Dividend per cent. in 1915-16.	Work- ing Agency.	Date of Work- ing Agreement.
		Miles.	Ft. In.					
20 TRAVANCORE STATE.								
Tinnevely—Quilon Ry. ...	1-6-04	95.96	3-3½	1,67.42	2.12	S. I. Ry. Co.	27-6-91 21-12-10	
Total ...	...	1,788	...	11,61.85	...			

Appendix XIII—Companies' lines

Nizam's Gd. St. Ry. ...	9-10-74	330.13	5-6	5,34.24	5.87	N. G. S. Ry. Co.	27-12-83	
Hyderabad Godavari Valley Railway ...	21-10-99	391.13	3-3½	3,22.46	6.55	Ditto.	16-3-97	
Bangalore-Chick Light Railway Company ...	5-9-14	38.74	2-6	11.57	1.81	Mysore State Ry.	...	
Total ...	...	760	...	8,68.27	...			

Worked by the Main Line.

Terms for Working.	Termination of Working Agreement.	Remarks.						
<p>The line is worked for the same proportion of its gross receipts of each half-year as obtains on the whole of the Company's undertaking. The net earnings after meeting interest on debentures, etc., are treated as surplus divisible between the Govt. and the Company in proportion of assumed capital as in the case of S. I. Ry. The Durbar has underwritten the guarantee of interest on capital cost of portion of line in its territory and it has been agreed that the surplus obtained by the Govt. of India, shall be divided between them in proportion to the respective lengths of the British and State Sections of line, and that the share of any deficiency attributable to the State Section shall be borne by the Durbar, while that attributable to the British Section may be recovered from the Company's share of surplus due from the S. I. Ry. for the same or next half-year.</p>	<p>31st December 1945 or at end of any succeeding fifth year.</p>	<p>Debentures raised by the company:—</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>3½ per cent.</td> <td>£ 29,517</td> </tr> <tr> <td>4½ "</td> <td>£ 418,274</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">£ 447,791</td> </tr> </table>	3½ per cent.	£ 29,517	4½ "	£ 418,274		£ 447,791
3½ per cent.	£ 29,517							
4½ "	£ 418,274							
	£ 447,791							
<p>guaranteed by Indian States.</p>								
<p>Indian company with 4 per cent. guarantee by the Mysore Durbar. Railway constructed and worked by the State.</p>	<p>1st January 1934.</p> <p style="text-align: center;">Ditto,</p>	<p>See Chapter V, pages 283-85.</p> <p style="text-align: center;">Ditto.</p>						

Appendix XIV.—Indian Railway Lines in

Name of Railway.	Date of contract.	Date of first opening.	Length of line open on 31st March 1918	Capital cost on 31-3-1918.	Percentage of net yearly earnings on capital outlay for 1915-16 & 1916-17.	GOVERN-
						Land.
GAUGE 3 ft.—3½ in. Pondicherry Railway Company	30th Decr. 1890.	15th Decr. 1879.	7.85	5.69	9.26 8.34	Not Specified.
West of India Portuguese Railway Co., London ...	18th April 1881. 9th Decr. 1892.	17th January 1887.	51.10	1,94.47	1.69 1.51	Free by Portuguese Govt.
Peralam-Kereikkal Railway belonging to French Colonial Government ...	27th March 1902.	14th March 1898.	14.65	7.24	8.18 8.06	Free by both Governments
Total ..	...	...	78.60	2,07.40	...	...

foreign territory worked by British Companies.

MENT AID.		PURCHASE BY GOVERNMENT.		Remarks.
Subsidy.	Working terms by Main-line.	Date of expiry of contract.	Price payable to the Company.	
Nil.	Worked by S.I. Ry. Co., at the same percentage of working expenses on gross earnings as is incurred on S. I. Railway.	On six months' notice by either party.	Nil.	French territory. Head office of the Company is in England.
Guarantee of interest at 5p.c. per annum on company's capital by Portuguese Govt. in consequence of cessation of annual subsidy of 4 lakhs of rupees which was formerly paid by the British Govt.	Worked by the M. & S. M. Railway working expenses are divided in proportion to respective gross earnings. Net earnings belong entirely to the West of India Portuguese company surplus profits in any year are to be divided equally between the Portuguese Govt. and the W. I. P. Coy.	1 At any time by six months notice by either party. 2 After 30 years from date of first opening.	1 Portuguese Govt. to pay to the company full capital cost of Railway and works plus 10 per cent. and the value of rolling stock, machinery, etc. 2 Ditto less 10 per cent. if the company surrender. If Portuguese Govt. take over, the market value of shares, debentures & stock of the company during the three preceding years is to be paid.	
Nil.	Constructed and worked by S. I. Ry. Co. Working expenses are charged at the same proportion of gross earnings as obtains on S. I. Ry., plus cost of repairing extraordinary damages and of New Minor Works & 5p.c. for use of rolling stock & 5 p.c. per annum on Rs. 30,000 for use of workshops, etc.	3 After 99 years. On twelve months' notice by either party, expiring on 30th June or 31st December of any year.	3 After 99 years the line becomes the property of the Portuguese Government but the rolling stock and movable machinery, etc. have to be paid for at their fair value. Purchase not stipulated.	The line is partly in British & partly in French territory.

INDEX.

THE NUMERALS INDICATE PAGES.

A.

Accidents.....132, 188, 491.
 Accounts.....46, 395-98.
 Accounts Department.....119.
 Act. Indian Railways.....16, 209, 439,
 464-75.
 Aoworth, Sir, W. M.....492, 527.
 Administration of Railways.....15, 20, 99,
 123, 490, 507, 538.
 Administration Reports of Railways.....
 144, 347, 423.
 Administrations.....lii.
 Advantages from railways.....40-41.
 Advertisement of appointments.....149, 165.
 Afghan War.....51, 297.
 Agency Companies.....5, 8, 9, 19, 296, 308,
 274, 344-50, 331, lxx.
 Agency Department.....140.
 Agents of Companies. Insufficient
 Control over.....499, 503, 504.
 Agra-Delhi Chord.....345, lvii, lxx.
 Agriculturists.....53, 59, 173, 305.
 Ahmadpur-Katwa Ry.....lxiii, lxxiv,
 Ahmedabad-Dholka Ry.....lix, lxxvi.
 Ahmedabad-Prantaj Ry.....lix, lxxvi.
 Ajmer Technical School.....180, 185.
 Ajmer Workshops.....170.
 Alcoholic drinks.....98.
 Ali Imam, Hon'ble Syed.....478.
 Allotment of funds.....350, 373.
 Amalgamation of Companies.....210, 462.
 American railways.....517, 528 30.
 American rates for goods.....458, 460, 461
 Amritsar-Pathankot Railway.....liii.
 Amritsar-Patti Railway.....liii, lxxvi.
 Anglo-Indians.....64, 134, 154.
 Annuities of railway Companies.....238.
 Analytical costs.....429.
 Appointments.....34, 133, 138, 149, 156,
 i, li.
 Apprentice Mechanics.....138, 166, 177.
 Argyll, Duke of.....248.
 Army, Strength of.....34.
 Arrah-Sasaram Railway.....lxiii, lxxxiv.

Assam.—

Provincial Ry.....5, lii, lxxix.
 Bengal Ry. Coy.....275, 309, lxi, lxxii,
 Railways & Trading Coy.....lxiii, lxxx.
 Association. Right of employes.....199.
 Association of the people in railway
 working.....258.
 Audit Department 119, 158.
 Auditors.....45.
 Autocracy.....162, 536.

B.

Bahawalpur State Railway.....xciv.
 Bakhtiarpur-Behar Ry.....lxiii, lxxxiv.
 Bangalore.....64.
 Bangalore Chikballapur Ry.....xcvi, lv.
 Bankura Damoodar Ry.....lxiii, lxxiv.
 Baran-Kotah Ry.....345, lvii, lxx.
 Baraset-Basirhat Ry.....lxiii, lxxxiv.
 Baring, The Hon'ble Major Sir Evelyn.....
 322, 508.
 Barnes, Sir George.....96, 198.
 Baroda-Godhra Chord.....lviii.
 Baroda State.....278, lxxxvi, lxxxviii.
 Barsi Railway.....359, lxiii, lxxviii
 Bavarian Ry. Organisation.....191, 194.
 Bayana-Agra Railway.....lviii.
 Bedding.....91.
 Bed-rock Rates.....462.
 Belgian Railways.....426, 529.
 Bell, Mr. Horace.....419.
 Bengal—
 and N. W. Railway Company.....333,
 354, lxii, 524, lxxviii.
 Central Railway.....352, lii.
 Doars Ry.....353, lxiv, lxxviii, lxxxiv.
 Nagpur Railway Company.....333, 302,
 346, lx, lxx,
 Provincial Railway.....lxiv, lxxx.
 Berars State Railways.....273.
 Berniers' Travels.....66.
 Bezwada Extension.....lxii, lxxii.
 Bezwada Masulipatam Ry.....lix, lxxxii.
 Bharucha, Mr. B. F.....91.
 Bhavnagar State Ry.....285, liv, lxxxvi,

- Bhopal State Ry. Lease of—to I. M. Coy. 10, lvii, lxxxviii.
- Bikaner Railway.....293, lxxxvi.
- Bins Guna Railway.....lvii.
- Bishnu Dutt Shukul, the Hon'ble.....194.
- Bilimora-Kalamba Railway.....lxxxviii.
- Birur-Shimoga Ry.....lix, lxxxviii.
- Blankets for passengers.....91.
- Block rates 462, 478, 488, 501.
- Board-allowance to Apprentices 178.
- Boards of Directors.....99, 311, 313, 317, 482, 491.
- Bodeli-Chhota Udaipur Railway.....lix, lxxxviii.
- B. B. & C. I. Railway—
First Contract... ..210.
Purchase price & Premium.....27, 28.
Lease to.....333, 346.
Lines comprised in.....lviii, lxx.
- Bombay Port Trust Railway.....4, lxxv.
- Booking Clerks.....189.
- Borrowing—
Maximum limit of.....46, 318, 329, 373.
In India.....29, 261, 320, 328.
In England.....329.
- Bonghey, Col. G. F. O.—R. E.....518.
- Brahmaputra-Sultanpur Ry.....360.
- Branth Rys.5, 291, 362 68.
- Bribery.....96, 402.
- Broach-Jambusar Railway.....lix, lxx.
- Budget debates.....96.
- Budget Estimates.....395-98.
- Budget lapses.....377
- Burdwan-Katwa Railway.....lxiv, lxxiv.
- Burma Ry. Coy.....333, 347, lxi, lxxii.
- C.**
- Caird, Sir James.....114, 520-21.
- Calcutta & S. E. Ry.....210, 228, lii, 524.
- Calcutta Port Commissioners' Ry.....4, lxxv.
- Cambay State Railway.....xcii, lviii.
- Campbell, Sir George.....314-17, 521-25.
- Canals.....245, 318, 322, 522-23.
- Canvassing for traffic.....526.
- Capital—
Account of State Railways.....24, 513.
Cost per mile of Railways... ..217.
Expenditure.....264, 373, 395-98, 513, xl.
- Capital—
Opinion of Lord Lawrence....222, 512-13.
Raised through Agency Companies 27, 28, 381.
- Capitalism.....201.
- Capitalized value of railways.....338.
- Carnatic Railway Company.....210, 216, lvi.
- Carriage & Wagon Department.....120.
- Carriage & Wagon Officers.....138, 143.
- Carriage stock.....76.
- Carriages. Carrying Capacity of.....78.
- Carriages. Improvement in.....77.
- Case Register.....192.
- Cast iron rail first made.....viii.
- Cattle run over by trains.....61.
- Cawnpore Achnera Railway.....lviii.
- Cawnpore Farukhabad Railway.....lviii.
- Cawnpore Banda Railway.....345, lvii, lxx.
- Cawnpore Buthwal Railway.....lxiii.
- Central Provinces Ry. Coy.....lxxiv.
- Chambers of Commerce.....42, 207, 326, 484.
- Champaner Shivrampur Pani Railway.....lxiv, lxxvi.
- Chargemen.....161.
- Chaubal, Sir M. B.....168, 482.
- Chirol, Sir V.....165.
- Chittagong Port276.
- Chronology of Indian Railways.....18.
- Claims.....189, 311.
- Clark, Hon'ble Mr.....478.
- Classes of passengers.....78.
- Classification of Goods.....442-45, 449-57.
- Classification of Railways.....4, lxxvii.
- Classified List of Officers.....133, l, li.
- Clearing House arrangements.....436, 439.
- Clerks.....122, 162, 130.
- Coal Company.....523.
- Coal rates.....445-47, 529.
- Cochin State Railway.....xcii, lvi.
- Code Open Line.....163.
- Coimbatore District Board Railway.....lxxxii, lvi.
- Coinage profits.....374.
- College for Railway Officials.....190.
- Colours of tickets.....411.
- Combination of railways.....462.
- Comforts and Conveniences of passengers.....72.

- Commercial—**
 Bodies.....42, 369.
 Policy of Government.....55.
 Department.....123.
 Railways.....300.
 Management of Railways.....496.
- Commission—**
 for promoting railways.....363, 365.
 for settling disputes.....475, 490.
- Committees of Enquiry.....63, 342-44, 536.**
- Committee for Selection of candidates.....**
 138, 148, 162.
- Companies—**
 As mere Agents.....313.
 Bad Management of.....249.
 Bold in enterprise.....581.
 Branch lines.....362-68, 394.
 Chief duties of.....364.
 Capital raised by.....27, 28, 381.
 Concessions made to.....526.
 Control over.....347.
 Forms of assistance given to.....22.
 General tendency of.....227, 489, 522-25.
 Independent action of.....111, 250, 499.
 Newly formed.....331, 344, 394, lxx.
 Position compared with Govern-
 m e n t.....250.
 Profitable Railways leased to.....300,
 513, 328.
 Retired Officers and.....313, 394.
 Reintroduction of.....296, 327, 392.
 Opinion of Lord Lawrence.....247-52.
 Opinion of Parliamentary Committee.....
 244-45.
 Purchasing State Railways.....334.
 Powers of.....334, 347.
 Conflict with public interest.....335-36.
 Responsible for raising salaries of
 higher officials150, 309, 495.
 Unreasonable attitude of.....499.
- Companies' railways.....4, 6, 7, 489, lxxiv-
 lxxx, lxxxiv.**
- Company-Worked Railways—**
 Mileage of.....6-7.
 Service Rules for.....137.
 Financial Results.....274.
 Percentage of State Railways.....5-
**Company Management. Disadvantages
 of.....498.**
- Comparison of railway results.....510-12,
 528-29.**
- Compensation to Workmen.....132.**
- Competition on railways.....72, 434,
 459-463, 497, 531.**
- Competitive examinations.....148.**
- Competitive Rates.....436.**
- Complaints of public.....72, 91, 502.**
- Concessions to public. Withdrawal of...423.**
- Conclusion.....536.**
- Conference of Railwaymen.....203.**
- Construction of railways.....12-14, 103,
 390, 394, 503-505.**
- Consulting Engineers.....105, 335.**
- Contracts of Railway Companies.....8, 110,
 347, 465-69.**
- Contracts for Stores.....110.**
- Control of Railways.....15, 16, 99-116, 208,
 251, 335, 347, 405, 437, 488, 490,
 504, 535.**
- Control of Railways by public.....258.**
- Cooch Behar Railway.....lii, xc.**
- Coolie class passengers.....401, 414.**
- Cooling of Railway Carriages.....96.**
- Cooper's Hill Engineers.....330.**
- Co-operative Industries.....58.**
- Coronation in London.....74.**
- Costs, Analytical.....429.**
- Cotton Manufacture.....58.**
- Cotton rates.....463.**
- Council Bills.....384.**
- Council debates.....96.**
- Councils.....200, 343.**
- Customs Duties.....48.**
- Cuteh State Railway.....liv, lxxxvi.**
- D.**
- Dabhoi Railway.....lxxxvii, lix.**
- Dalhousie, Lord.....16, 208.**
- Danvers, Sir Juland.....61, 314.**
- Darjeeling Himalayan Railway.....352,
 lxiv, lxxiv, lxxx.**
- Dark ages in England.....i.**
- Dasghara Jamalpur Ganj Railway.....lxiv,
 lxxiv.**
- Debentures of Railway Companies.....27,
 28, 374.**
- Debentures, Provincial.....253.**

- Debt. Public Debt of India.....29, 304, 323, 516.
- Dehri-Rohtas Railway.....lxiv, lxxviii.
- Delay in office work.....187.
- Delhi Umbala Kalka Railway..... 357, lvi, lxxviii.
- Delhi traffic competition.....461-63.
- Democratization of railway administration.....96, 527.
- Deoghur Railway.....356, lvi.
- Depreciation Account.....46.
- Dharmpur-Hosur Railway.....lvii, lxx.
- Dhond Manmad Railway.....lvii.
- Dhond Baramati Railway.....lvii, lxxiv.
- Dhone-Kurnool Railway.....346, lx, lxx.
- Dhoulpur Bari State Ry.....liv, lxxvi.
- Dhrangadhra State Railway.....lxxvi.
- Dibru Sadiya Railway.....352, lxiii, lxxx.
- Dickens, Col. C. H.....247.
- Dining Cars.....85.
- Dildarnagar Ghazipur Railway.....lv.
- Director-General of Railways.....104.
- Directors of State Railways.....15, 104.
- Directors of Companies.....99, 311, 313, 317, 482, 491.
- Discipline among passengers.....90.
- Discriminations.....63, 164.
- Dismantled Railways.....lxv.
- District Board Railways.....19, lxxxii, lxxxiv.
- Distrust of Indians.....165.
- Dividend earning period of railways.....36.
- Dividends.....427, lxxiv—xcix, xli.
- Dogs.....404, 418.
- Doraswami, Mr. V. S.....277.
- Draft Writing.....188.
- Drawing Classes.....144, 183, 190.
- Drivers.....163.
- Duplication of work.....186.
- Dutt, Mr. R. C.....54, 64.
- E.**
- Earnings. Period in which Railway begins to earn.....36.
- Earnings of Railways.....xxx, xl.
- East Coast Railway.....346.
- East Indian Railway—
Original Contract.....210.
New Contract8, 9, 332, 491.
- East Indian Railway—
Annuity.....8, 238
High cost of.....221.
Lines comprised in.....lv, lxx.
Future Working of.....491.
Advantageous position of.....511.
High charges for famine traffic.....625.
- Eastern Bengal Railway.....5, 210, 274, lii, lxix.
- E. I. Distilleries Sugar Factories Co. Madras.....lxiv, lxxx.
- Eastern Widom.....201.
- Economic effects of Railways.....XI, 50, 381.
- Economy in System of working.....496.
- Education. Need for National.....182.
- Efficiency of staff.....189.
- Efficiency of Railway.....275.
- Ellichpur Yeotmal Ry.....lvii, lxiv.
- Elliot, Sir Charles.....80.
- Empty haulage.....391.
- Engines.....76.
- Engineering Department.....120, 159.
- Engineering College.....182.
- Engineers.....330.
- Engineer Apprentices.....181.
- England. Scholarships in.....145.
- English Chambers of Commerce.....42, 207, 326.
- English Railway and Canal Traffic Act.....469-71.
- English Railways, Origin of.....i.
- English Railways. Comparison with.....72, 75, 416, 458.
- Enterprise and State.....301, 522, 535.
- Epochs of Indian Railway History.....let 205, 2nd 216, 3rd 331.
- Equal pay.....164.
- Enquiry Committees.....23, 63, 305, 342-44.
- Errors in freight charges.....189.
- Establishment employed on Railways.....1, li, 123, 127-204.
- Estimates for Works.....319.
- Europe. Gain to—from raw produce of India.....56.
- European Commercial bodies.....42, 56.
- European officials.....63, 193, 154.
- Europeans. Discriminations between.....and Indians 164.

- Europeans appointed in India.....157.
 Exactions from passengers.....94.
 Exchange. Loss by.....31, 229, 242.
 Exchange. Fixed rate of.....211.
 Exchange. Effects of borrowing in England
 383-87, 504.
 Excise Duty.....48.
 Expenditure—
 Total—on Railways from Revenue.....
 81-32.
 Limit of—on Rys. from Revenue.....46,
 260, 318, 320.
 Lavish —on Railways.....62, 217.
 In Workshops.....120.
 Further—on railways.....390-94.
 Budget heads of.....395-98.
 Curtailement of.....501.
 Expenses of railways.....29, xxviii, xl, 529,
 532.
 Expiry of Contracts.....8, lxx to xcix.
 Exploitation of India.....381.
 Exports.....53, 62, 154, 384, 450.
 Express trains.....89.
 Extension of railways.....393.
 Extraordinary expenditure.....261.
- F.**
- Fairs traffic.....74, 89-90.
 Famine Commission.....306.
 Famine Insurance Fund...31, 265-72, 322-23,
 329.
 Famine-Works.....319.
 Famines in India.....52.
 Fares—
 American law.....441.
 For passengers.....412-32.
 Compared with England.....416.
 Fixing of.....464-75.
 For 3rd class.....75, 401, 415-16, 419.
 Reductions followed by increases in
 receipts 401, 416-18, 427.
 Maxima and Minima.....400-405,
 418-19.
 Enhancements in 1917-20.....420-25.
 Need for general reduction.....415-31.
 Feeder Railways.....362-68.
 Fencing. Railways opened without.....61.
 Finance Department.....119, 158.
- Financial Policy....259-72, 318-26, 371-398.
 Financial Results of Railways in India 35,
 xxxii.
 Financial results of Guaranteed Railways.
 241, xiv.
 Financial results of State Railways.....273,
 xxviii.
 Finney, Sir S.....518.
 First Locomotive.....ix.
 First Railway.....x.
 Forecast.....328, 350.
 Foreign Capital.....381-83.
 Foreign trade.....305, 209, 449-50.
 Foremen.....161, 130, 177.
 Franchise.....200.
 Fraternity.....202.
 Freeland, Genl. Sir H. F. E.....45.
 Freight charges.....189, 457.
 French railways.....122, 528-30.
 Frontier railways.....258.
 Functions of railways.....11.
 Funds, Provision of.....350, 377, 390.
- G.**
- Gaekwar of Baroda.....278.
 Gaekwar's Rys.....lix, lxxxvi, lxxxviii.
 Gandhi, Mahatma M. K.....87.
 Ganges River Traffic.....65.
 Gainers from Indian Rys.....56.
 Gauges of railways.....69, 255, 327.
 General Rules.....17, 464.
 General results of working Railways.....35,
 xxxii, xlii.
 German railways.....122, 528.
 Glassware rates.....477
 Godhra—Lunavada Railway...lxiv, lxxvi.
 Godhra—Rutlam Ry.....lviii.
 Gokhale, Hon'ble Mr. G.K.....341, 476.
 Gondal Porebandar Ry.....liv, lxxxvi.
 Gondia—Chanda Ry.....lx.
 Goods classification.....442-45, 450.
 Goods Clerks.....189.
 Goods Rates.....433-74.
 Goods Tariffs.....450-57.
 Goods Traffic profits.....xlvi, xli.
 Goods tonnage carried.....xli.
 Gordon, Major L. Conway R. E.....426,
 503-7, 516.

- Government and Ry. Enterprise.....297, 369.
- Government Director.....348.
- Government Inspectors.....107.
- Government-worked Rys.....5, lxix.
- Government of India, Control by England, 251.
- Grain Export.....53.
- Grain rates.....461, 463, 508.
- G. I. P. Ry.....210, 275, 345, lvii, lxx.
- Great Southern of India Ry.....210, lvi.
- Guarantee—
- Original plan of.....206.
- Evils of.....223, 251, 522.
- Substitute for.....259.
- Revised terms for.....262, 299, 361, 507.
- Undesirability of.....370, 522.
- Guaranteed Railways—
- General account of.....18, 205-45.
- Annual losses.....xii, xix.
- Contracts.....205.
- Financial Results.....241, xiv.
- Opinion of Parliamentary Committee 244.
- Purchase of.....235, xx.
- Rates and Fares.....214.
- Waste of capital.....251.
- New Companies.....361.
- Guards.....163.
- Guntur District Ry.....lix, lxxxii.
- Guzrat Rys. Co.....lx, lxiv, lxxvi.
- Gwalior State Rys.....liv, lxxxvi, xc.
- H.**
- Hardwar, Dehra Ry.....361, liv, lxiv.
- Hartington, Lord.....46.
- Haste in the provision of railways.....61.
- “Heads, I win; tails, you lose” policy of Companies.....522, 525.
- Heat. Power of latent.....viii.
- Heat. Protection from.....96.
- Hepper, Major Sir H. A. L.....481.
- High Salaries.....152, 153.
- Hindusthan of Kalakankar.....80.
- Hindupur Ry.....lx, lxxxviii.
- Hingoli Branch.....lxii, xciv.
- Hire of rolling stock.....392.
- Holkar State Railway.....280, lviii,
- Holland, Sir Thomas.....201.
- Home charges.....384.
- Hope. The Hon'ble Sir T. C.....324.
- Horses.....404, 418.
- Hoshiarpur Doab Ry. Co.....liii, lxvii.
- Hot season, cooling of carriages.....96.
- Hotel keepers.....91.
- Houldcroft, Mr. A. T.....167.
- Hours of work.....126, 132.
- Howrah Amta Ry.....358, lxiv, lxxxiv.
- Howrah Sheakhala Ry.....lxiv, lxxxiv.
- Hunter, Sir W. W.....62, 208.
- Hyderabad Godawari Valley Ry.....lxii, xcvi.
- I.**
- Ibrahim Rahimtulla, Hon'ble Sir.....478, 479, 490.
- Imperial Service.....147.
- Imports.....384, 450.
- Importance of Railways.....82.
- Improvements of open lines.....3, 872, 517.
- Inadequacy of train service 74, 430.
- Income tax.....48.
- Inchcape, Lord.....336, 341.
- Incomplete railways opened to traffic.....61, 510.
- India. Industrial insufficiency of.....181.
- India. Control by Secretary of State.....251.
- India recruited services.....156.
- India stock.....374.
- Indian Art.....64.
- Indian Civil Service compared with Ry. Service.....34.
- Indian Midland Ry.....10, 11, 302, 333, lvii, lxx.
- Indian officers on Rys.....133, 138.
- Indian Railway Conference Association.....201, 390.
- Indian Railways Act...16, 209, 439, 464-475.
- Indian State Rys.....4, 6, 278-95, lxxxvi, xcvi.
- Indianising of higher officials.....89, 330.
- Indian Tramway Coy.....lvi.
- Indians. Disposition of—to travel 88, 401.
- Indians. Eligibility of—to Ry. appointments.....139, 330.

Indians—
 Proportion of—in Ry. service 164.
 Posts generally held by.....161.
 Discriminations between—and Euro
 peans.....164.
 Distrust of—165.
 Insufficient inducement to—apprentices
 177.
 Industrial training.....52, 57, 153, 184.
 Industrial Insufficiency of India.....181.
 Industrial Commission.....450.
 Industries. Loss of Indigenous... 52, 55, 62.
 Industries. Development of..... 457, 491,
 477.
 Indus Valley State Ry.....lii, 253.
 Inspection of railways.....108, 124.
 Inspectors.....161.
 Insurance.....404.
 Intermediate class.....78, 423.
 International Labour Office.....198.
 Interest on railway losses.....38, 44, 243,
 432.
 Interest on Capital...208, 311-317, 390.
 Interest during construction.....362, 366.
 Invention of Railway in England.....i.
 Inventions.....53.
 Invoices for goods.....457.
 Iron ore Mines.....523.
 Iron rail. Invention of.....vi.
 Iron and steel rates.....463.
 Irrigation Companies.....245, 522-23.
 Italian Railways.....74, 529.
 Itarsi Hoshangabad Ry.....345, lvii, lxx.

J.

Jacobabad—Kasmor Ry.....liii, lxxvi.
 Jagadhri Light Ry.....lxiv, lxxx.
 Jaipur State Ry.....lix, xciv.
 Jalpaiguri District Ry. lxxxiv.
 Jammu—Kashmir Ry. liii, lxxxvi, xo.
 Japanese State Rys. 134, 151, 429—31, 534.
 Jessore—Jhenida Ry.....lxiv, lxxxiv.
 Jetalsar Rajkot Ry.....liv, lxxxvi.
 Jind—Panipat Ry.....lvi, xcii.
 Jinnah, Hon'ble Mr. M. A.....490.
 Jodhpur Bikaner Rys.....293, lv, lxxxvi.
 Jodhpur-Hyderabad Ry.....lv, lxxii.
 Jones, Mr. W. R. S.....581.
 Jorhat State Ry.....lii, lxix.

Jubbulpur—Gondia Ry.....lx.
 Jullandhar—Mukerian Ry.....liii, lxxvi.
 Junagadh State Ry.....lv, lxxxvi.
 Justice.....202.

K.

Kalabagh—Bannu Ry.....liii.
 Kalighat—Falta Ry.....lxiv, lxxiv.
 Kalka—Simla Ry.....360, liii.
 Karwar.....290.
 Kashmir.....67.
 Kathiawar Rys.....285, lxxxvi.
 Katni Umaria Ry.....lx.
 Kerosine oil rates.....463.
 Khangaon—Amraoti Ry.....255, 278, lvii.
 Khanpur—Chachran Ry.....liii, xciv.
 Khijadia—Dhari Ry. liv, lxxxvi.
 Khus Cool r for carriages.....96.
 Kimberley, Lord.....47.
 Kistna District Board Ry.....lix, lxxxii.
 Kosamba, Zankhvav Ry.....lix, lxxxviii.
 Kohat—Thal Ry.....liii.
 Kolar Gold Fields Ry.....lix, lxxxvi,
 lxxxviii.
 Kulasekara Patnam Light Ry. Co.....lxiv,
 lxxx.
 Kotah State Ry.....lvii, xcii.

L.

Labour Organisation.....198.
 Labour. Working hours.....126, 132, 201.
 Labour. Rise in wages.....305.
 Land. Free grant of—for railways.....362,
 365.
 Land Revenue smaller than Ry. Gross
 earnings.....33.
 Lapses of Budget Grant.....377.
 Latrine in 3rd class carriages.....79.
 Lawrence, Lord.....48, 221, 247-52, 308,
 369, 509, 512, 519.
 Leader of Allahabad.....480.
 League of Nations.....198.
 Leases to Companies. Dates of expiry
 of.....8.
 Leases to Companies 331.....lxx to lxxiii.
 Leases to Companies. Period to be fixed.....
 12, 312, 367, 372.
 Leases to Companies. Extension of.....
 336, 339.

- Leases to Companies. Lease of Rajputana
Malwa Railway.....526-27.
- Ledo and Tikak Margherite Colliery.....
lxiii. lxxx.
- Legal rights promised by Govt.....439.
- Legislative Provisions.....464-75.
- Leslie, Sir Bradford.....439, 517-18.
- Loading of Wagons.....391.
- Loans for railways.....29-31, 261-70, 320,
323, 329, 373, 380, 397, 516.
- Local Governments.....105, 113, 258, 297,
402.
- Locomotive Department.....120.
- Locomotive Engine. Invention of.....i, ix.
- Locomotive Officials.....138, 143.
- London in pre-rail days.....ii.
- Loss by Exchange on Rys.....31, 242, 229.
- Loss from companies' railways.....37.
- Losses from Guaranteed Railways.....xii
to xix, 31, 222-248.
- Lucknow Bareilly State Ry. 333, 354, lxiii,
lxxii.
- Ludhiana Dhuri Ry.....liii, xcii.
- Luggage.....90, 403, 418.
- M.**
- Macadam. Invention of.....vi.
- MacGeorge, Mr. G. W.....496.
- Mackay Committee.....336, 341, 371, 484.
- Madaya Light Ry.....lxv, lxxx.
- Madan Mohan Malaviya, The Hon'ble.....
492.
- Madras Railway.....210, 240, lxx, lix, 511.
- Madge, Hon'ble Mr.....478.
- M. & S. M. Ry. Coy.....286, 345, lix, lxx,
483.
- Mail trains.....89.
- Manchester Canal.....vi.
- Mandra Bhon Ry.....liii, lxxvi.
- Management and Working.....119, 317.
- Management. Association of people.....259.
- Management officers.....139.
- Managing Trust.....317.
- Manufacturing Industries.....58, 477.
- Matches.....477.
- Materialistic culture.....201.
- Matheran Ry.....361, lvii, lxxviii.
- Maxima Rates and Fares.....400-405, 418-
419, 444, 488.
- Mayo, Lord.....248.
- Mayavaram Arantangi Ry.....lvi, lxxii.
- Meals for passengers.....83.
- Mechanics in Workshops 120, 144, 166.
- Medical Department.....122
- Medley, Col. J. G. R. E.,.....415.
- Mehsana Ry.....lxxxviii.
- Mesopotamia.....195.
- Military—
- Expenditure compared with Ry.....
33, 34.
- Troop travel rules.....98, 211.
- Transport.....121.
- Requirement in Ry. Service.....165, 140.
- Railways.....256.
- Ministers for Railways.....113.
- Miraj Sangli Railway.. lxx, xciv.
- Mirpur-Khas Rys.....lv, lxxviii.
- Miscellaneous Expenditure.....xxv.
- Mistrees.....163.
- Mixed trains.....124.
- Mohari Barauli Ry.....liv, lxxxvi.
- Molesworth, Sir G. L.....104, 306, 507-16.
- Monopoly in Rys.....12, 498, 507, 508, 531.
- Monopolists of Ry. Service.....156.
- Morappur Hosur Ry.....lvii, lxx.
- Morrison, Mr. F.....526.
- Mourbhanj State Ry.....lx, xcii.
- Morvi State Ry.....265, lv, lxxxvi.
- Mudholkar, Rao Bahadur R. N.....342,
482.
- Mulk Raj, Rai Saheb.....196, 514.
- Munitions supplied by Railway Work-
shops.....51.
- Muttra Hathras Light Ry.....lviii.
- Mymensing Bhairab Bazar Ry. lxi, lxxvi.
- Mymensing Jamalpur Jagannathganj Ry.
lii, lxxiv.
- Mysore State Rys. 286, lv, lx, lxx, lxxxvi,
lxxxviii.
- N**
- Nadiad Kapadvanj Ry.....lxiv, lxxvi.
- Nagda Muttra Ry.....lviii, xc.
- Nagda Ujjain Ry.....lviii.
- Nagpur Chhatishgarh State Railway.....
333, 346, lx.

- Nagpur Chhindwara Railway.....lx.
 Nalhati State Railway.....216, 14.
 Native of India. Definition of.....157.
 Native State Railways.....5, 295—298,
 lxxvi. xvii.
 Nawanager State Railway.....lv.
 Nerbudda Coal Company.....523.
 New Minor Works.....363.
 Nilgiri Railway.....357, lvi, lxx.
 Nizam's State Railways.....279, 283. lxii,
 xciv, xcvi.
 Noakhali Railway Company.....367, lxi.
 Nomination of officials.....148.
 Northcote, Lord Stafford.....46.
 Northern Bengal State Railway.....lii.
 North Western Railway.....5, 123, 274,
 lii, lxix, 483.
 Notes on Cases.....186.
 Nowshera Dargai Railway.....liii.
- O**
- Objects of introducing Railway in India.....
 60, 209,
 Office Work reduction.....188.
 Officials for the Country.....61.
 Officials Total number of.....133, li.
 Officials forming Companies.....313.
 Open Line Improvements.....3, 272.
 Open Mileage of Railways.....3, xl.
 Operating ratio.....xli.
 Orissa Canal.....522-23.
 Oudh and Rohilkhand Railway.....5, 210,
 214, 274, lii, lxix, lxxii.
 Overcrowding of trains.....72, 430.
 Overtime allowance.....132.
- P**
- Palampur Deesa Railway.....289, lix, lxx.
 Pandas.....91.
 Panjab Northern State Railway.....254, lii.
 Parcels Rates.....419.
 Parlaki Medi Light Railway.....lxi, xcii.
 Parliamentary Committees.....23, 63, 305.
 Parliamentary Control.....527.
 Parsees.....163.
 Passenger conveniences.....71, 545.
 Passenger Fares.....412-32, xli, 548.
 Passengers, Number of—in a train.....73.
 Passengers on Indian Railways.....xli.
 Passengers. Profits from.....xliv, 428.
 Patiala State Railway.....xc.
 Patna.....65.
 Patna District Railway.....lxxiv.
 Patna-Gaya State Railway.....lv.
 Patri State Railway.....lviii.
 Pay. See Salary.
 Pension, Abolition of—on State Rys.,.....
 131.
 Peralam Karaikkal Railway.....lvi, xviii.
 Permanent Way Inspectors.....130, 161.
 Petlad Cambay Railway.....lviii, lxxviii.
 Petlad Vaso Railway.....lix, lxxxviii.
 Phagwara Rahon Railway.....liii, lxxvi.
 Piece Goods Rates.....463.
 Pilgrim Committee.....483.
 Pilgrim Traffic.....74, 89.
 Pipar-Bilara Railway.....lxxxvi.
 Planters' Railway.....275.
 Podanur Pollachi Railway.....lvi, lxxxii.
 Police Strength.....34.
 Political influence.....492, 527.
 Pondicherry Railway.....lvi, xvii.
 Poofing of traffic.....462.
 Port Trust Railways.....4, 18, lxx, lxxxii.
 Portuguese territory.....290, lx, xviii.
 Poverty in India.....53.
 Powayan Light Railway.....lxiii, lxxviii.
 Powers of Government.....334, 347—50.
 Prabasi. Views of—on Indian Railways.....
 57.
 Precedence at Ticket window.....90.
 Preference, undue.....439-442.
 Premium paid to Companies.....237, 251,
 363, 367.
 Pre-rail Conditions.....63, i.
 Presidential Address to Railwaymen...203.
 Prices—
 Rise in—in India.....52, 62;
 of wheat.....53.
 Reduction of.....59.
 Purchase—of Guaranteed Railways.....
 xx, 237.
 Need for lowering.....203.
 Priestley, Mr. N.....517.
 Princes, Appeal to.....293-95.

Princes' Railways.....lxxxvi, xcvi.
 Prinsep, H. T.....65.
 Private enterprise.....23, 298, 318, 327,
 364, 69, 489, 514, 522, 535.
 Private enterprise and Government.....369.
 Private Wagons.....380.
 Probation of officials....148.
 Procedure in offices.....186.
 Productive Railways.....298, 327.
 Profitable railways made over to companies
 300, 328, 513
 Profits. See "Surplus profits."
 Profits from State Railways.....37, 43.
 Profits from 3rd Class passengers.....80,
 426.
 Profits amount to transit duty.....426.
 Programmes of Railways.....301, 320,
 323, 350.
 Projects. Correctness of.....304.
 Promotion of Railways. Commission for.....
 363.
 Prosperity, Signs of.....61.
 Protective Works.....271, 293, 319, 327.
 Provident Institution.....131, 138.
 Provincial Debentures.....258.
 Provincial Railways.....258, 297.
 Provincial Service.....147.
 Provincialization of Railways.....105, 113,
 485, 521, 544.
 Prussian State Railways.....528-29.
 Public, Association of—in Railway Work-
 ing.....96.
 Public Wants and Complaints.....71, 548.
 Public Services Commission.....135-74.
 Publication of Rates and Fares.....423.
 Publication of contracts.....347.
 Publicity of railway projects.....327.
 Publicity of vacancies.....149.
 Pulgaon Arvi Railway.....lvii, lxxiv.
 Purnia Ranchi Railway.....lxi.
 Purchase of railways. Power to be reserv-
 ed by Government.....12, 303.
 Purchase price of Guaranteed Rys.....xx,
 237.
 Purchase of Subsidized railways.....351
 Purchase of Rebate Terms Companies.....
 363, 367

Purshotardas Thakurda, C. I. E.,
 M. B. E.....550.

R

Racial discriminations.....163, 196, 537.
 Railway—
 Origin in England.....i.
 Introduction in India.....205.
 Proposed outlines.....209, 253, 300, 393.
 Total length required.....253, 322, 393.
 Use of general revenue.....388-89.
 Rapid construction.....2, 305.
 Excessive programme.....323.
 Economic effects.....50-62, xi.
 Efficiency.....275.
 Dividend earning period.....36.
 A National work.....208.
 Instrument of Development.....508.
 Biggest department of State.....32.
 Objects of.....49, 60, 209.
 Not to be introduced without educat-
 ing the people.....51, 57.
 On Commercial principles.....319.
 Government and private enterprise.....
 300, 369.
 Further extensions.....390-95.
 Historical results.....62.
 Terms for construction of new lines
 205.
 Railway Act.....16, 209, 439, 464, 475, 480.
 Railway Administrations.....20, lii, 538.
 Railway Administration. Association of
 public.....258, 546.
 Railway Board.....105, 338, 340, 346, 427,
 542.
 Railway College.....190, 393.
 Railway Commission.....475, 490, 543.
 Railway Committee.....23, 63, 305, 342,
 536, 541.
 Railway Finance.....371, 544.
 Railway Member of Council.....542.
 Railway servants.....133.
 Railway servants Conference.....203.
 Railway Stock.....375.
 Raipur—Dhamtari Railway.....lxi.
 Rajpipla State Railway.....lix, xcii.

- Rajpura—Bhalinda Railway.....liii. xc.
 Rajputana State Railway.....332, Iviii, 508,
 526-27.
 Rajputana Technical College.....185.
 Ranaghat-Krishnagar Railway.....359, lii.
 Rangoon—Irravadi State Railway.....333.
 347.
 Rapid Construction of railways.....2, 305
 327.
 Rates and Fares—
 Anomalous rates.....478.
 Average Rates.....458-59.
 Contractual provisions.....465-69.
 Cost of Construction.....436.
 Early history.....399-411.
 Fixing of.....464-75.
 General principles.....438-40.
 Goods Rates.....438-75.
 Government Control.....327, 465-69.
 High rates for Indian produce.....477.
 Increase of.....548.
 Lower Rates for longer distances.....
 442.
 Maxima & Minima.....403-5, 418, 440,
 488.
 Mileage division between railways.....
 436.
 Passenger Fares.....412-32.
 Powers of Companies.....438, 443, 465-
 69.
 Powers of Government.....327, 465-69.
 Principles of Rate-making.....429,
 436.
 Reluctance of Companies to reduce.....
 214, 505.
 State Railways led reductions.....214.
 505, 508.
 To cover no more than costs.....426,
 506.
 Tribunal.....546.
 Reading, Lord.....537.
 Rebate Terms Companies.....19, 362-68,
 390, lxxiv-lxxvii.
 Recommendations prohibited.....149, 157.
 Recruitment of officials.....138, 148, 194.
 Reform of Railway administration.....538,
 541.
 Refreshment Rooms.....83.
 Registering of letters and cases.....192.
 Rendel, Sir A. M.....72, 311-13, 317.
 Renewals. Suspension of.....45, 390, 541.
 Reorganisation of railway work.....186.
 Repairs to Rolling Stock.....124, 391.
 Representative Railway administration.....
 507.
 Reserve Fund. Absence of.....45, 61.
 Reserved accommodation in carriages.....
 409-11.
 Responsibility for Railway projects.....
 304.
 Results. Historical—of Indian Railways...
 62.
 Retired officials and Companies.....313,
 365, 491.
 Return Tickets.....425.
 Revenue. Limit of Railway expenditure...
 46, 388-89.
 Revenue. Disposal of surplus.....319-21,
 374-75, 387.
 Rewari Fazilka Railway.....lviii.
 Ripon, Marquis of.....297, 308, 509, 516.
 Risk Note forms.....473-74.
 River traffic.....65.
 Roads in England in pre-rail days.....v.
 Robertson, Thomas—C. V. O.....124, 334,
 431.
 Rohilkhand & Kumaon Railway Coy.....
 333, 354, lxiii, lxxviii.
 Rolling Stock—
 Demands for.....61.
 Alleged shortage of.....75.
 Duty performed by... ..xliv, 390-91.
 For Branch railways... ..362-63.
 Delay in supply of.....379.
 Manufacture of.....379.
 Rothschild, Lord.....375.
 Routine in offices.....186.
 Royal Engineer officers.....121, 140.
 Royal Proclamations.....538.
 Ryan, Mr. T.....165.

S

- Sabarmati Tranship Yard.....196, 514.
 Salar Jung, Sir.....279.

Salaries—	Shareholders of Guaranteed Companies.....
Equal—for all races.....164.	213.
Companies responsible for raising salaries of higher officials.....150, 309, 495.	Shoranur—Cochin Railway.....lvi, xcii.
Of Railway Board.....106.	Shrines. Sanctity of..... 90.
Of Government and Companies' Officers.....494, 506.	Shunters.....163.
Of State Railway Revenue Establishment.....127, 150.	Sialkot Narowal Railway.....liii, lxxvi.
Of Subordinates.....96, 130, 163.	Silver exchange.....384.
Of Accounts and Engineer Establishments.....128.	Simms, Mr.—Railway plan by.....205.
On Continental and Japanese Rys.....151.	Sindh Pishin Railway.....liii.
Compared with England.....152.	Sindh Sagar Railway.....liii.
High rates of.....153, 202, 309.	Sindia State Railway.....333, lvii, lxxxviii.
Maximum to be fixed.....154.	Sindh Light Railway. Co.....lxxviii.
Sale of State Railways.....334, 338, 377.	Sindia Neemuch State Railway.....lviii.
Salem District Railway.....lxxii.	Sleeping accommodation 3rd Class car...77.
Salisbury, Lord.....46, 296, 308.	Sleeping berths.....409.
Sambhar Salt Lake.....63.	Social position.....156.
Sangli State Railway.....lx, xciv.	South Bihar Ry.....lvi, lxxiv.
Sara Sirajganj Railway.....lii, lxxvi.	South Indian Ry.....346 lvi, lxx.
Sarma, Hon'ble B. N.....491.	Southern Mahtatta Co.,.....309, 313 17, lix.
Sastri, Rt. Honble Srinivasarao—P. C.....550.	Southern Panjab Ry.....liii, lxxiv.
Savings Bank Deposits.. ...374.	Speed acceleration.....124.
Scholarships.....143.	Spiritual culture.....201.
Schools.....144, 393.	Staff Selection Board.....138, 148, 162.
Scinde P. & D. Railway.....210, lii.	Stage Coach London & York.....iv.
Scoble, Sir Andrew.....60.	Stage Coach, London & Edinburgh.....v.
Sea traffic.....66.	Standing charges.....429, 436.
Season tickets.....431-32.	State. Exclusion of—from enterprise...301.
Secretary of State—	State Management...300, 306, 312, 489, 501.
Autocratic powers.....62.	State Management superiority of .....495, 499, 511, 514.
Control over India.....251.	State Management.....Unprofitable Rys....300, 328, 513.
Reversal of State Ry. policy.....308.	State Railway Administrations.....5, 246.
Action in Rates & Fares.....402-8.	State Railways—
Secretariat procedure.....107, 188.	Classes of.....257.
Secunderabad—Gadwal Railway.....lxii, xciv.	Cost of.....217, 254.
Segowli—Raxaul Ry.....360, lxii.	Financial results of.....273, xxviii.
Select Committee for recruitment...138, 148.	Rate reductions led by.....214, 505, 508.
Services. Public—Commission.....136-70.	List of.....18, lxix, lxxiii.
Shahabad District Ry.....lxxxiv.	Worked by Companies.....5, 476-53.
Shahdara—Saharanpur Ry.....lxv, lxxviii.	Profits made by.....37, 43.
Share Capital of Agency Companies...27, 28.	Plan of.....253.
	Proposed sale of.....334.
	State Management for.....300, 306-12.
	State Versus Company Management.....309, 331, 476—489 550.
	Statistics unreliable.....430 544.
	Statutory Natives.....157.
	Steam Engine. Invention of.....vi.

- Stephenson, Robert.....viii.
 Stephenson, George.....x.
 Stipends inadequacy of.....177.
 Stores—
 Purchases.....116.
 Department.....122.
 Officers.....138, 146.
 Delay in supply of.....379.
 Strachey, General R.....296, 310, 370, 383,
 519, 521-25.
 Subordinate appointments.....130, 161.
 Subordinates promoted to superior grade...
 147, 197.
 Subsidized railways' Account.....xxli.
 Subsidized Companies.....18, 214, 350,
 lxxviii—lxxx, lxxxiv.
 Suburban tickets.....431-32.
 Suez Canal.....50.
 Sugar rates.....463.
 Sugmangalam-Salem Ry.....lvii, lxxxii.
 Surplus Profits—
 Of Agency Companies..... 9, 45, 495,
 501.
 Of old Guaranteed Companies.....230.
 Surplus Profits.—
 Of Debenture-holders.....258,
 Government share in—of Assisted
 Companies.....262.
 Mean transit duties..... 426, 506.
 Mean a national loss..... 508.
 Surplus Revenue.....312-21, 374, 375 387.
 Sur-tax.....548.
 Sutlej Valley Railway dismantled.....lxv.
 Swiss Railways.....529.
 Switzerland.....91, 529.
 Syndicates.....306, 394.
- T**
- Tanjore District Board Railway.....lvi,
 lxxxii.
 Tapti Valley Railway.....lviii, lxxvi,
 Tariff for goods.....450-54, 455-57,
 Tarkessur Railway.....356, lvi.
 Taxation not to be imposed on account of
 railways.....48, 329, 393.
 Taxes imposed in.....1886-1902, 48.
- Technical Schools.....144, 153, 168, 180,
 190, 393, 540.
 Teesta-Kurigram Railway.....lii.
 Tenali-Repali Railway.....lix, lxxxii.
 Terminal Charges.....404, 433, 447-48.
 Tezpur Balipora Railway.....lxv, lxxxiv.
 Thaton Duinzaik Railway.....357.
 Third Class carriage.....77.
 Third Class fares.....75, 401, 414-16, 419.
 Third Class passengers.....89.
 Thompson, The Hon'ble Sir Rivers.....
 299, 322.
 Through rates.....454-55,
 Through freights.....457.
 Ticket colours.....411.
 Ticket Window.....90.
 Tinneveli Quilon Railway.....lvi, lxx, xcvi.
 Tirhut State Railway.....333, 355, lxii,
 lxxxii.
 Tirupattur Krishnagiri Railway.....lvii.
 Tirthas Sanctity of.....90.
 Traffic in pre rail days.....63.
 Traffic. Bulk of—in lowest class.....400.
 Traffic available in India.....526.
 Traffic Appointments.....138, 140.
 Traffic Department.....121.
 Traffic Inspectors.....161, 150, 547.
 Training of Mechanics.....144, 168, 393,
 540.
 Training of officials.....148, 153, 550.
 Trains. Insufficiency of.....73, 548.
 Trains Service. Insufficiency of.....72, 430.
 Tramroad. Origin of.....vii.
 Tramroad. Description of wooden.....viii.
 Transhipment at Sabarmati.....196.
 Transhipment Charge.....448.
 Trans Indus Railway.....liiii.
 Transportation Department.....123.
 Travancore State Railway.....lvii, xcvi.
 Travelling disposition of Indians.....401.
 Trevor, General, J. S.....313-14.
 Troop travel rules98.
 Troop trains.....122.
 Trunk Road. Use of for railways.....255.
 Trust for Railways.....317.
 Tuke, Mr. J.—550.
 Tumsar Tirodi Railway.....lxi, lxx,
 Tutwiller Mr. T. W.....167.

U

Udaipur-Chitorgerh Railway...lv, lxxxvi.
 Unassisted Companies.....368, lxxx.
 Uncovenanted Serv. ce.....157.
 Undue preference 439-42.
 Unions of Railway Servants.....201.
 Unprofitable railways.....300, 328, 513.
 Upper Sind Light Railway Coy.....lxxvi.

V

Vacancies to be advertized.....149.
 Valuation of railways.....32, 338.
 Vanity.....202.
 Variable Charges.....429.
 Versailles Covenant.....198.
 Veto, Power of.....348, 468.
 Vijapur-Kalol-Kadi Ry.....lix, lxxxvii.
 Vijairaghava charya, Hon'ble Mr.....478.
 Villa Tickets.....431.
 Vithaldas D. Thackersey, Hon'ble Sir.....
 477.
 Vrooman, Mr. Carl S.....426, 532.

W.

Wacha, Sir Dinslaw, E.....228.
 Wagons for passengers.....74.
 Wagon stock.....75, 380, 391.
 Wagon Supply.....547.
 Waiting Halls.....83.
 War—
 Utility of railway in time of.....51,
 122.
 Industrial insufficiency of India.....181.
 Works contracted for.....319.

War—

Railways dismantled for.....lxv.
 Enhancement of fares.....422.
 Wardha Coal St. Railway.....lvii.
 Waterfield, Sir Henry.....51, 384.
 Waterways, inland.....550.
 Watt, Power of latent heat.....viii.
 Way Bill for goods.....457.
 Wealth amassing.....202.
 Weavers of India.....55.
 Western Rajputana State Ry.....lviii.
 Wheat prices.....53.
 Wheat rates.....461, 463, 508.
 Whitley Commission.....201.
 Williams, General Sir E. C. S.....247, 303
 Willingdon, Lord.....482.
 Wilson, H. H.....55.
 Women's Rights.....200.
 Wooden tracks.....vi.
 Working of railways.....14, 119.
 Working terms.....291, 314-68.
 Working administrations.....20.
 Working Estimates.....395-98, 545.
 Working expenses, 89, xxviii, xl, 529, 532.
 Working Hours.....126, 132.
 Workmen.....167.
 Workmen's compensation.....132.
 Workmen's Trains.....416.
 Workshop—
 Expenditure.....120.
 Training of Mechanics.....144, 183, 190,
 540.
 Foremen.....177..
 Works Committees.....201.
 Writing work.....191.
 Wynne, Sir, T. E.....346, 477.

[THE END.]