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RAILWAY DEPARTMENT
(RAILWAY BOARD)

REPORT
BY THE
RAILWAY BOARD
ON
INDIAN RAILWAYS
FOR

1927-28

Volume I



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TECHNICAL PAPERS.

- (8) Over 250 papers have been published by the Technical Section of the Railway Board's office The papers comprise —
 - (a) Original descriptions of railway works and studies of railway problems in India and elsewhere.
 - (6) Reprints of articles from foreign engineering magazines
 - (c) Reprints or abstracts of reports received by the Government of India on subjects connected with railways.
- A complete list of the papers can be obtained *gratis* from the Secretary, Railway Board. A few of the more important Technical papers are mentioned below —

Technical Paper.

Name.

72 The design of well foundations for bridges	(Compiled)
148 Statistics of railway working expenditure	G DEUCHARS
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GOVERNMENT OF INDIA
RAILWAY DEPARTMENT
(RAILWAY BOARD)

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Volume I



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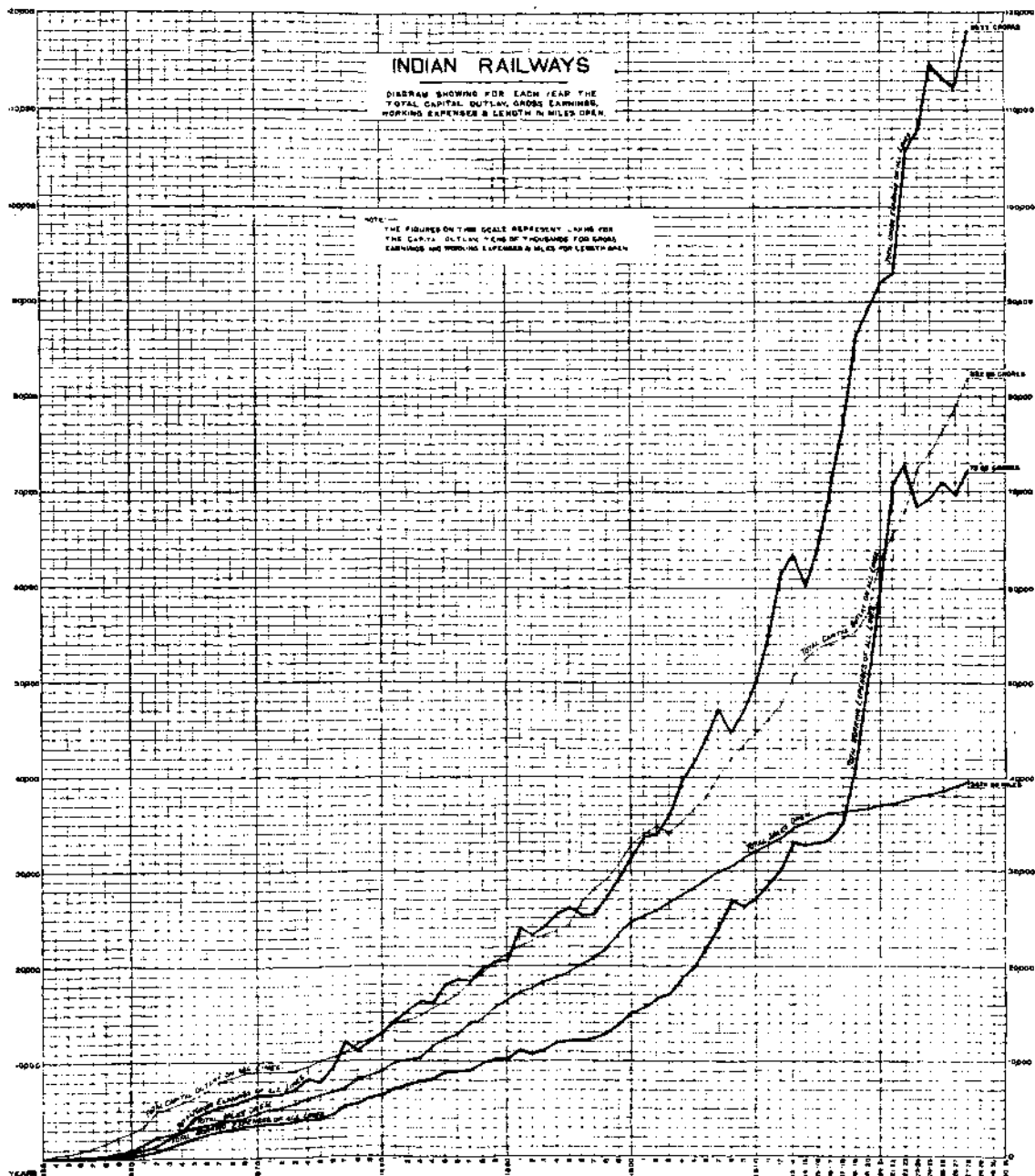
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INDIAN RAILWAYS

DIAGRAM SHOWING FOR EACH YEAR THE
TOTAL CAPITAL OUTLAY, GROSS EARNINGS,
WORKING EXPENSES & LENGTH IN MILES OPEN.

NOTE:
THE FIGURES ON THIS SCALE REPRESENT LAKHS FOR
THE CAPITAL OUTLAY & THE FIGURES FOR GROSS
EARNINGS AND WORKING EXPENSES & MILES FOR LENGTH OPEN.



CHAPTER I.

GENERAL ADMINISTRATION.

1. General Review.—This report deals with the results of the working of Indian Railways in the financial year 1927-28 and with the events of that year as affecting those railways. The monsoon of 1927 was, on the whole, normal; and well distributed rain fell generally over the country except in the south-western part of the Punjab where the rainfall was in great defect. Averaged over the plains of India, the rainfall during the monsoon period was in defect by only 2 per cent. During the retreating period of the monsoon, the rainfall was somewhat below normal in the southern half of the Peninsula and in moderate to large excess in the northern half. In Gujrat and Orissa floods occurred as a result of excessive rains towards the end of July 1927 and in both areas were the cause of extensive damage to railway embankments and bridges and of serious interruption of traffic on main lines of communication.

2. Taken all round the year was a most profitable one for Railways, the gross earnings of State-owned lines reaching the record figure of **104** crores, or an increase of 5 crores compared with 1926-27. Goods traffic was responsible for most of the increase in gross receipts, the earnings from goods carried on all railways amounting to 69 crores as compared with 65 crores in 1926-27. This large rise in goods traffic was considerably influenced by a marked increase in the cotton crop and in the export of raw jute. There were also considerable increases in the export of wheat, rice, oilseeds and tea. The increase of one crore in passenger earnings is accounted for by an increase of over 18 million in the number of passengers carried, largely the effect of reductions of fares.

3. Steady progress continues to be made with the development of the country by extending the net work of railways, approximately 700 miles having been opened during the year as compared with 421 in 1926-27. In addition there were 2,425 miles under construction on March 31st, 1928, and a further 1,000 miles sanctioned.

4. One of the principal features of the year's working was the opening of the electrification of the Bombay Local and Suburban Section of the Bombay, Baroda and Central India Railway on January 5th, 1928, by His Excellency the Governor of Bombay. It is hoped that with the introduction of this electric service a large amount of passenger traffic which has been lost to the railway will be regained. In common with most other railways throughout the world Indian Railways are increasingly feeling the pressure of road motor competition and reports all over the country show that where roads short circuit or run parallel to the railway, short distance passenger traffic is steadily decreasing.

5. Another feature of the year's working was the rapid development of publicity work on the State Railways, as a direct result of the formation of a Central Bureau and the appointment of a Chief Publicity Officer under the Railway Board. This development was soon followed by the establishment of a Publicity Office in London in July 1927.

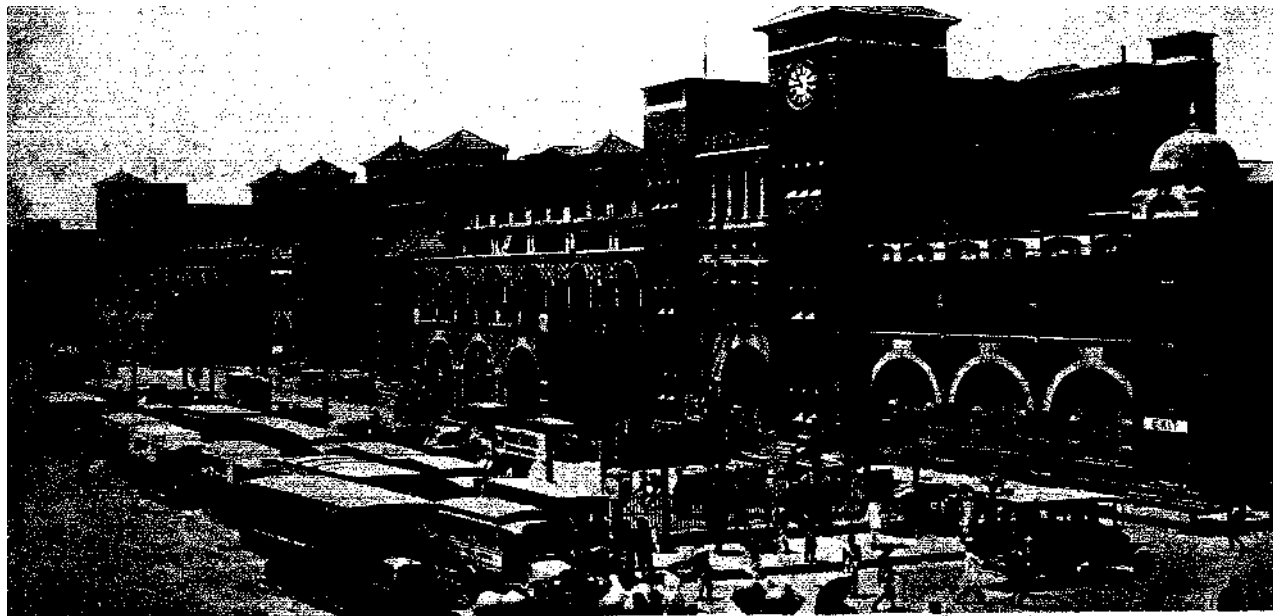
6. Among other matters of interest may be mentioned the conclusion of the investigation into Railway Accounts by Sir Arthur Dickinson, whose report was submitted in August 1927 and is at present under consideration, the progress made in the establishment of a Central Clearing Accounts Office at Delhi, the continuance of the work done by the Rates Advisory Committee and the increase both in the number of meetings held and in the interest shown in Local Advisory Committees.

7. Railways and the Legislature.—The interest taken by members of the Council of State and Legislative Assembly in the working of Railways

has in no way lessened as is shown by the large proportion of questions on railway subjects. Out of a total of 2,765 questions asked in the Legislature on all subjects during the year 845 or over 30 per cent, dealt with railway matters. The subjects in which the greatest interest was shown were Indianisation, the recruitment and training of staff, communal questions, grievances of passengers, stores indents and purchases, projected lines, consumption and purchase of coal and the Railway Clearing Accounts Office. Apart from questions the following resolutions or adjournment motions were moved in connection with railway subjects :—

- On 5th September 1927 a resolution was moved in the Council of State recommending that a Committee of 3 members consisting of the Member for Commerce and Railways as Chairman and two other members, one from the Legislative Assembly and the other from the Council of State, elected from among the elected members of these bodies, should be appointed to enquire into the grievances of railway employees throughout India and suggest ways and means for the amelioration of their lot. The resolution was negatived.
- On the 7th September 1927 the adjournment of the Legislative Assembly was moved to discuss the decision of the Bengal Nagpur Railway authorities to retrench 2,000 men of the Kharagpur workshops. The motion was ruled out of order on the ground that the matter was not urgent.
- On 14th September 1927 the adjournment of the Legislative Assembly was again moved to discuss the serious situation that had arisen in the Bengal Nagpur Railway workshops at Kharagpur as evidenced by the fact that the railway authorities thought it necessary to close the workshops and call in the aid of military police. Leave was granted on this occasion and after a long debate the motion was adopted by 44 votes to 38.
- On 14th September 1927 a resolution was moved in the Council of State recommending that the Government should take necessary steps to reconstitute the Local Advisory Committees for Railways with a view to giving them larger powers and responsibilities and to make them more thoroughly representative of the people. Government could not agree to undertake the wholesale reconstitution of these Committees but they agreed to circulate a copy of the debate to the Agents of Railways. The resolution was withdrawn.
- On 19th September 1927 a resolution was moved in the Council of State recommending that railway construction be started during the year 1928-29 for connecting Burma with India by rail and that necessary steps be taken forthwith. The resolution was negatived.
- On 27th February 1928 a resolution was moved in the Council of State recommending the establishment of a Central College of Railway Engineering in India with a view to stopping recruitment of non-Indians and of training and recruiting in India all officers of the Mechanical Engineering and Transportation Services of Indian Railways. An amendment to this Resolution was moved recommending that substantial subsidies and grants-in-aid and proper facilities for practical training in railway workshops be given to the already existing mechanical engineering colleges in different provinces and their graduates be appointed to fill the vacancies in State Railways with a view to restricting recruitment of non-Indians and to train and recruit in India officers of the Mechanical services of Indian Railways. This amendment was subsequently with the leave of the House withdrawn and the original resolution was negatived.
- On 10th March 1928 the adjournment of the Legislative Assembly was moved to consider the serious situation that had arisen in the

EAST INDIAN RAILWAY



Howrah Station

Lillooah workshops on the East Indian Rail way on account of the railway strike. The motion was ruled out of order

8. Railway Budget.—In accordance with the practice set up when railway finances were separated from general finances, the railway budget was introduced in the legislature in advance of the general budget. It was presented to both Houses on the 20th February 1928 after having been discussed with the Standing Finance Committee for Railways in meetings held at the end of January. The general discussion on the budget took place in the Assembly on the 22nd February and in the Council of State on the following day. Demands for grants were discussed and voted by the Assembly during the four days, February 24th to 28th

There was a note of congratulation running through most of the speeches in the general discussion on the Railway Budget, though there were criticisms on individual points such as the grievances of railway employees, hardships of 3rd class passengers and Indianisation. The discussion in the Assembly was briefer than usual as it was brought to an abrupt conclusion for want of a quorum

32 motions of reduction were actually made during the motions for demands for grants, but none were carried; only four of them being pressed to a division. The majority of these motions for reduction were, as usual, under the first demand, " Railway Board ". The main motion to reduce the grant under that head to Re 1, as a token of the dissatisfaction of the House with the entire railway policy of Government, was negatived by a majority of 12

9. Standing Finance Committee for Railways.— The Standing Finance Committee for Railways held twelve meetings in the course of the year at Bombay, Calcutta, Simla, Madras and Delhi. They scrutinised in detail at one of the earlier meetings the programmes of railways for the purchase of rolling stock in 1928-29 and the rest of their capital programmes for that year at a later meeting. The budget proposals as a whole for 1928-29 were placed before them and discussed by them in their meetings in January at Delhi. The Committee also examined and approved the proposals of the Railway Board for the construction of several new lines and for the creation of a number of superior posts on Indian Railways.

10. Local Advisory Committees. 108 meetings were held of the Local Advisory Committees on State-owned Railways during the year as compared with 92 in the previous year and 84 in 1925-26. Two new Committees were formed by the Bengal Nagpur Railway, at Ranhi for Bihar and Orissa and at Nagpur for the Central Provinces. The number of meetings held on the different railways during the year was as follows :—

Railways.	No. of Meetings.
Assam Bengal	2
Bengal and North "Western—	
Muzaffarpur.	3
Gorakhpur.	3
Bengal Nagpur—	
Calcutta	9
Bihai and Orissa.	3
Central Provinces	2
Bombay, Baroda and Central India	8
Burma	2
Eastern Bengal	10
East Indian—	
Calcutta	12
Cawnpore	3
Lucknow	3
Great Indian Peninsula—	
Bombay.	12
Nagpur.	3

Railways.	No. of Meetings.
Madras and Southern Mahratta	10
North-Western—	
Lahore	12
Karachi	4
Rohilkhund and Kumaon	3
South Indian	4
TOTAL	108

Many different subjects were discussed at the meetings, indicating the increasing importance attached by the public to the existence of the Committees. The following may be mentioned as typical of the subjects discussed.—

- Overcrowding in trains.
- Alterations in time tables.
- Arrangements for the provision of refreshments and drinking water for passengers.
- Remodelling of and improvements to stations.
- Facilities for 3rd class passengers.
- Reduction in fares.
- Concessions in fares.
- Rates for goods traffic.
- Opening of new stations.
- Electrification schemes.
- Design of railway carriages.
- Sanitary arrangements in lavatories of 3rd class carriages
- Settlement of claims
- Passengers travelling without tickets.
- Construction of new lines.
- Running of through trains and carriages.
- Return tickets.
- Arrangements in connection with fairs and during rush periods.
- Late running of trains.
- Intermediate class accommodation on certain trains.
- Mileage coupon tickets.
- Railway risk notes.
- Waiting rooms for intermediate class passengers.
- Travelling cinema cars.
- Provision of lavatories in servants' compartments.
- Electric fans in intermediate compartments.
- Checking of passengers' luggage in trains.
- Cold storage transit for fish and refrigerator vans for perishables.
- Road motor competition.

11. Rates Advisory Committee.—Mention was made in last year's report of the establishment of a Rates Advisory Committee to investigate and make recommendations to Government on the following subjects:—

- (1) Complaints of undue preference;
- (2) Complaints that rates are unreasonable in themselves;
- (3) Complaints or disputes in respect of terminals;
- (4) The reasonableness or otherwise of any conditions as to the packing of articles specially liable to damage in transit or liable to cause damage to other merchandise;

- (5) Complaints in respect of conditions as to packing attached to a rate;
- (6) Complaints that Railways do not fulfil their obligations to provide reasonable facilities under Section 42 (3) of the Indian Railways Act.

At the end of 1926-27 there remained 5 cases outstanding with the Committee and 9 new cases were referred to the Committee during 1927-28. Up to 31st March 1928 the Committee had submitted their report on the following four cases.—

- (1) Complaint of undue preference from the Grain merchants of Ajmer against the Bombay, Baroda and Central India Railway in the matter of concession rates for the carriage of food grains consigned to the Bombay, Baroda and Central India Railway Indian Co-operative Association, Apner.
- (2) Complaint from the Central Provinces Portland Cement Company against the Great Indian Peninsula Railway as regards the unreasonableness of the terminal charge levied on coal delivered at the siding leading to the Company's works at Jukehi.
- (3) Complaint of the Amritsar Sugar Mills Co against the East Indian and North Western Railways that the rates for jaggree from stations on the Bengal and North Western Railway, via Barabanki and Saharanpur to Amritsar were unreasonable.
- (4) Complaint of undue preference from the Katni Lime Manufacturers Association against the Great Indian Peninsula Railway regarding the rates for lime from Katni Merwara to and via Naini for stations north and west of Naini.

As regards (1) the Committee recommended the withdrawal of the concession and this was agreed to by the Government of India. In the case of (2) the Committee were of opinion that the terminal charge at Jukehi should be remitted. This recommendation was not accepted by the Government of India. In the case of the Amritsar Sugar Mills Company, the Committee recommended that the North Western Railway should quote a rate of 28 pies per maund per mile for jaggree for refining purposes, subject to the ordinary terminal charge at destination. This recommendation was accepted with certain modifications. As regards the fourth case it was held by the Committee that the rates charged did not affect the complainants adversely, their real cause of grievance being delays to consignments. The Committee therefore had no recommendations to make as regards the rates.

Owing to the serious illness of Sir Narsimha Sarma, K.C.S.T., President of the Committee, the sittings of the Committee were temporarily suspended from 21st January 1928. The suspension of the sittings of the Committee, however, did not preclude the submission of applications to the Railway Department and Agents of Railways in accordance with the procedure in force. Preliminary enquiries in connection with such applications continued to be made and those of them which were to be submitted to the Committee were sent to them when the Committee resumed their sittings in April 1928.

12. Meetings with Agents and Local Governments.—The Railway Board held general meetings with the Agents of the principal railways in October 1927 at Simla and in March 1928 at Delhi when a number of important subjects were discussed. Visits were also paid to the Board at different times during the year by several Agents. Apart from these meetings and visits 37 visits were paid by the Chief Commissioner, Financial Commissioner or a Member of the Board to the headquarters of Railway Administrations and 11 to Local Governments. Notices are inserted in the newspapers notifying beforehand the tours of the Hon'ble Member for Railways, the Chief Commissioner, Financial Commissioner and Members and information is also sent in advance to Local Governments, Chambers of

Commerce and other public bodies. By these means the Railway Board are able to keep in close contact with the public on the one side and Railway Administrations on the other.

13. Clearing Accounts Office:—It was stated in last year's report that a Clearing Accounts Office, with a Statutory Audit Office attached thereto, was opened in December 1926 to take over work relating to the check and apportionment of traffic interchanged between State-managed Railways. The work of the different railways was gradually transferred to this office, the North Western Railway work being taken over first on the 1st January 1927, that of the East Indian Railway following on the 1st April, and that of the Eastern Bengal Railway on the 1st January 1928. The Great Indian Peninsula Railway work was not transferred till after the close of the year.

At the request of the Bombay, Baroda and Central India Railway an exhaustive experiment was conducted to check the accuracy of the results obtained by the revised procedure, and as the experiment was completely successful, the Board of Directors of the Bombay, Baroda and Central India Railway have recently agreed to the transfer of the check and apportionment of their foreign traffic to the Clearing Accounts Office.

During the year under review demonstrations explaining the Clearing Accounts Office procedure were given to the representatives of the Press as well as to the representatives of various railways who visited the office to study the new procedure. An important demonstration was given to representatives of the Southern railways at Madras who were so impressed with the superiority of the new procedure that they unanimously recommended to their Home Boards the transfer of the work of check and apportionment of earnings from interchanged traffic to the Clearing Accounts Office, and it is hoped that a branch Clearing Accounts Office will be opened at Madras early in 1929 to deal with such traffic.

14. Investigation into the present form of Railway Accounts.—Mention was made in paragraph 16 of last year's report of the investigation by Sir Arthur Dickinson into the system of accounts followed on Indian railways. Sir Arthur Dickinson completed his investigation in March 1927 and submitted his report in August 1927. His recommendations which are of a far reaching character are at present under consideration.

15. Termination of the Contract with the Burma Railways Company.—After the transfer of the East Indian and the Great Indian Peninsula Railways to State-management, the next State-owned company-managed railway system whose contract can be determined is the Burma Railways. The contract for working this line being terminable on the 31st December 1928, notice had to be given before 31st December 1927 and the future management of the line engaged the attention of the Government during the year under review. After careful consideration, and having full regard to the views of the Government and the Legislative Council of Burma who expressed themselves in favour of State-management, it was decided, with the approval of the Secretary of State to take over the Burma Railways for management by the State after the termination of the present contract with the Burma Railway Company on the 31st December 1928. While the transfer of the line to State-management will entail the payment to the Burma Railways Company of a sum of £3,000,000 it is likely to result in an increase of about half a crore in net annual revenue to Government.

16. Stores Department Re-organisation and Stores Standardisation Committee.—For some time the Railway Board have had under their consideration the question of reorganising the Superior Establishment of the Stores Department on State Railways. This reform had, in their opinion, become a good deal overdue, for the gradual increase in the purchase of stores in India had for many years tended to enhance the importance of the Stores Department and to make it necessary to relieve the Agent of the detailed control of local purchases by increasing the responsibility of the Controller of Stores and by putting that officer into his proper position as the principal supply officer of the Railway. The lower status of the Controller of Stores

as compared with other Heads of Departments of each Railway, was in fact a survival of the early times when a very large proportion of the materials and stores required for the day to day working of the Railways had to be imported. Purchases in India, however, will certainly tend to go on increasing, as they have done in the past, in view of the policy of the Government of India which has, for its object, the local purchase of all stores as far as this can be done; and not only will the scope of the business of local purchase be further extended, but it will be necessary also that inspection, analysis and testing must be provided for more adequately and the responsibilities of the Controller will be greatly increased.

In these circumstances, therefore, the Board decided that a reorganisation was necessary and that the Controller of Stores must become the Agent's general adviser on matters of supply, and that, as a result, his duties would rank in importance with those of the heads of the other main departments. It is clear that, in order to carry these responsibilities satisfactorily the Controller of Stores and a proportion of his officers must possess technical engineering qualifications which have hitherto not been demanded in recruits for the Stores Department, and it is intended that this need shall be met. In seconding officers of the Civil and Mechanical Engineering departments to serve in the Stores Department Reorganisation is consequently being carried out on these lines.

In pursuance of this plan, which the Board had in view, the Railway Board appointed a selected officer in November 1926 to report on the supply, distribution and custody of stores on the State-worked railways, and to make recommendations for modification of procedure and methods to meet the changed conditions. The report was submitted in March 1927 and the orders of the Board in regard to it were finally issued to Railways in November 1927. The recommendations in the report were accepted in the main by the Railway Board who, when supplying copies of the report to the Agents of the State-worked Railways, mentioned certain points in which they did not fully accept the recommendations and gave general instructions on other points. Emphasis was specially laid on the necessity of standardisation of stores and for purchase against specifications, and the Board subsequently established a Stores Standardisation Committee on the same lines as other Standardisation Committees which have been brought into existence. The appointment of this Committee is referred to again in Chapter V below.

17. Standardization Committees.—In pursuance of the Railway Board's declared policy of progressive standardization, to which a reference was made in last year's report, the various Standardization Committees continued to function during the year under review. A brief account of their activities is given below.

Track Standards Committee

The Track Standards Committee held their fourth meeting in October 1927. The more important subjects dealt with were the preparation of standard designs for points and crossings for use with 115 lbs rails, standard designs for steel sleepers for use with 115 lbs. and 7.5 lbs rails (broad gauge) and 60 lbs rails (metre gauge), standard designs for cast iron sleepers for use with 115 lbs and 75 lbs rails (broad gauge), and standard designs for Broad Gauge and Metre Gauge dogs pikes. The Committee's designs for points and crossings for 115 lbs rails are being given a trial on the Bhor Ghat realignment of the Great Indian Peninsula Railway. The Committee's recommendations in regard to steel sleepers are under investigation, in consultation with the Consulting Engineers, Messrs. Rendel, Palmer and Tritton. As regards cast iron sleepers, the Committee have deferred the preparation of standard designs of cast iron sleepers for use with 115 lbs and 75 lbs rails pending the results of the trial of three types of cast iron plate sleepers which have been ordered for use with 90 lbs rails on the State-managed Railways. The Committee's designs for broad gauge and metre gauge dogs pikes have been approved for general adoption.

At this session the Committee also prepared a specification for built-up points and crossings, which after consideration by the Railway Board has been adopted as a standard for the State-managed Railways and has been recommended for adoption by the other main line Administrations.

Bridge Standards Committee.

The Bridge Standards Committee met twice during the year under review. They held their fourth session from the 18th to the 30th July 1927, and their fifth session in January 1928. Among the various subjects dealt with may be mentioned the revision of the " Special Rules for Arched Masonry Bridges ", the investigation of the main features to be adopted in preparing designs for (a) arched masonry bridges, and (b) abutments and wing walls of girder bridges, suitable for the Heavy Mineral Standard of Loading; the examination of designs for plate girders, suitable for the Heavy Mineral and Main Line Standards of Loading; the preparation of revised Tables of the Equivalent Uniformly Distributed Loads for the three Standards of Loading, both for Bending Moments and Shears; and the consideration of proposals and type designs for Standard Skew Spans.

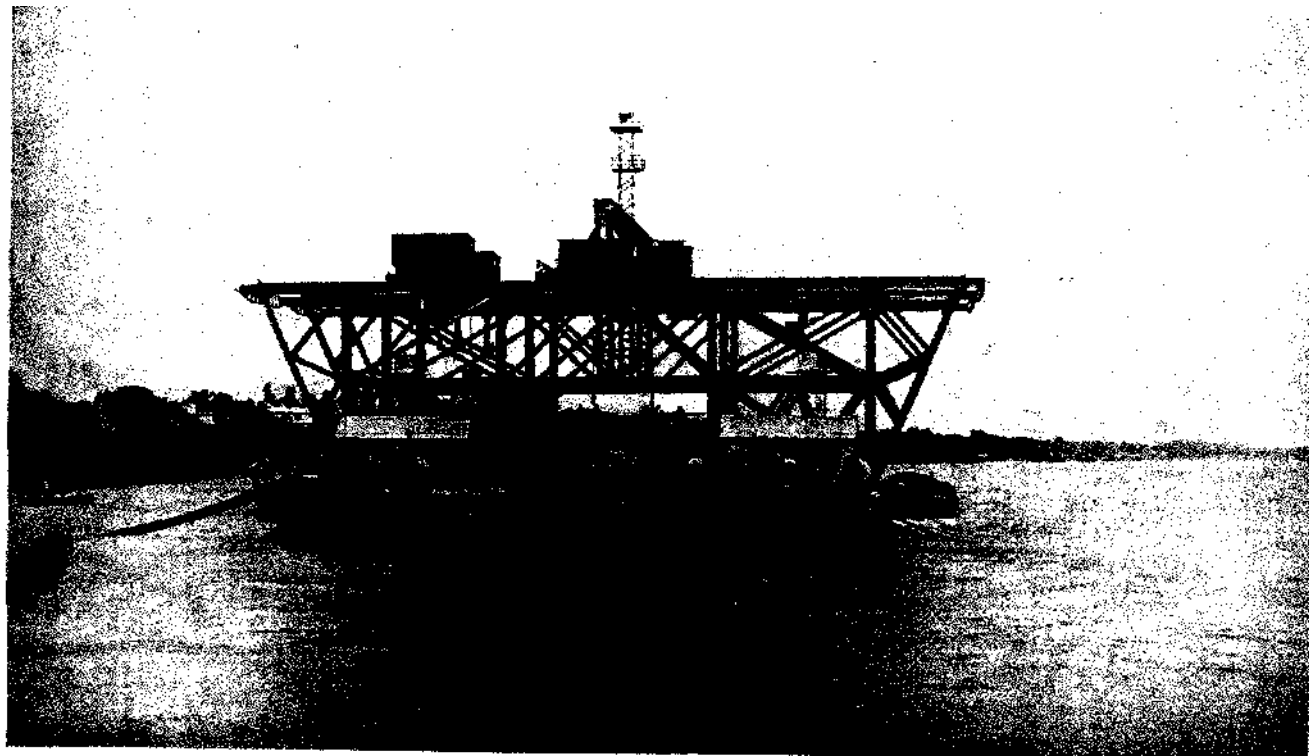
Mention was made in last year's Report of experiments being carried out on metre gauge railways with a view to arriving at the impact formula to be adopted for metre gauge bridge girders. These experiments continued during the year under review and have not yet been completed. The impact formula has not, therefore, been definitely decided upon, and this question will receive consideration at some future session of the committee.

Signal and Interlocking Standards Committee

The Signal and Interlocking Standards Committee did not hold a session during the year under review. The preliminary work (that is, the preparation of drawings, etc.), in connection with the standardization of signal equipment and fittings on Indian Railways, to which a reference is made in last year's report, was, however, proceeded with.

The Committee's recommendations, framed at their second session in February 1927, and mentioned in last year's report, with regard to the isolation of through running lines at stations, have been accepted by the Railway Board, and definite rules governing the isolation of such lines have been issued to all Railway Administrations. The Committee's recommendations regarding standardization of systems of signalling and interlocking are under further investigation.

CONSTRUCTION OF BALLY BRIDGE. EAST INDIAN RAILWAY



Steel Work of Caisson No. 2 in course of erection

CHAPTER II.

FINANCIAL RESULTS OF THE YEAR'S WORKING.

18. The principal results of the working of railways are summarised in the table below:—

—	Class I Railways.	Other Railways.	Total of all Railways.
(i) Total route mileage open for traffic.	1926-27 35,132 1927-28 35,587	3,917 4,125	39,049 39,712
(ii) Number of passengers originating.	1926-27 570,726,100 1927-28 588,663,200	38,645,700 34,451,600	604,371,800 623,114,800
(iii) Number of passengers miles.	1926-27 19,603,413,000 1927-28 20,908,343,000	762,837,000 795,947,000	20,366,250,000 21,704,290,000
(iv) Tons originating	1926-27 82,080,000 1927-28 85,823,000	3,753,000 3,968,000	85,833,000 89,791,000
(v) Number of ton miles.	1926-27 20,108,214,000 1927-28 21,620,094,000	*27 2,444,000 282,128,000	*20,37 5,658,000- 21,902,222,000

Revised figure .

19. Trade Review.—Exports.—Exports of Indian merchandise were valued at 319 crores, an increase of 6 per cent, over 1926-27. With the exception of cotton and cotton manufactures all the staple commodities recorded an increase. Despite an improvement of 17 per cent, in the production of cotton, shipments of raw cotton fell from 569,000 tons valued at Rs. 58½ crores to 480,000 tons valued at Rs. 47½ crores. The value of cotton manufactures exported also declined by Rs. 208 crores. On the other hand the exports of raw jute rose by 184,000 tons to 892,000 tons in quantity and by Rs. 4 crores to Rs. 31 crores in value, notwithstanding a decrease in the outturn of the jute crop by 16 per cent, as compared with the preceding year. The wheat crop of 1926-27, which was mostly moved during the year under review, was slightly better than in the preceding year and the exports rose from 176,000 tons valued at Rs. 2-71 crores in 1926-27 to 300,000 tons valued at Rs. 4-41 crores in 1927-28. The rice crop of the season showed a deficiency of 6 per cent in comparison with the preceding year but the exports showed an increase of 5 per cent, in quantity amounting to 2,152,000 tons (valued at Rs. 33 crores) in 1927-28 as against 2,035,000 tons (valued at Rs. 33 crores) in 1926-27. Shipments of oil seeds advanced from 838,000 tons valued at Rs. 19 crores in 1926-27 to 1,210,000 tons valued at Rs. 27 crores in 1927-28 an increase of 372,000 tons in quantity and of Rs. 8 crores in value. Groundnuts alone contributed Rs. 6 crores to this increase. The tea industry experienced another prosperous year and the exports increased from 349 million lbs. to 362 million

ibs. in quantity and from Rs 29 04 crores to Rs. 32-48 crores in value. The exports of lac rose by Rs. 152 crores in value but decreased in quantity by 48,000 cwts.

Imports.—imports of private merchandise increased by Rs 19 crores to Rs 250 crores, more important items contributing to this increase being iron and steel and manufactures thereof (+Rs. 4²/₃ crores) machinery of all kinds, including belting for machinery (+ Rs 2¹/₃ crores) cotton, raw and waste () Rs 1²/₃ crores), mineral oils (+ Rs 1¹/₂ crores), Railway plant and rolling stock (Rs 1-¹/₂ crores) vehicles, excluding locomotives, for railways (+ Rs. 1¹/₃ crores) and artificial silk (+ Rs 1¹/₃ crores) Bombay mills continued to use foreign cotton in appreciable quantities and the imports, chiefly from the United States of America and Kenya Colony, totalled 65,800 tons, valued at Rs 6-71 crores as against 45,100 tons, valued at Rs. 4-97 crores in the preceding year. On the other hand there was a substantial decline in the imports of sugar (Rs. 4 crores), the quantity having fallen from 923,000 tons to 823,000 tons

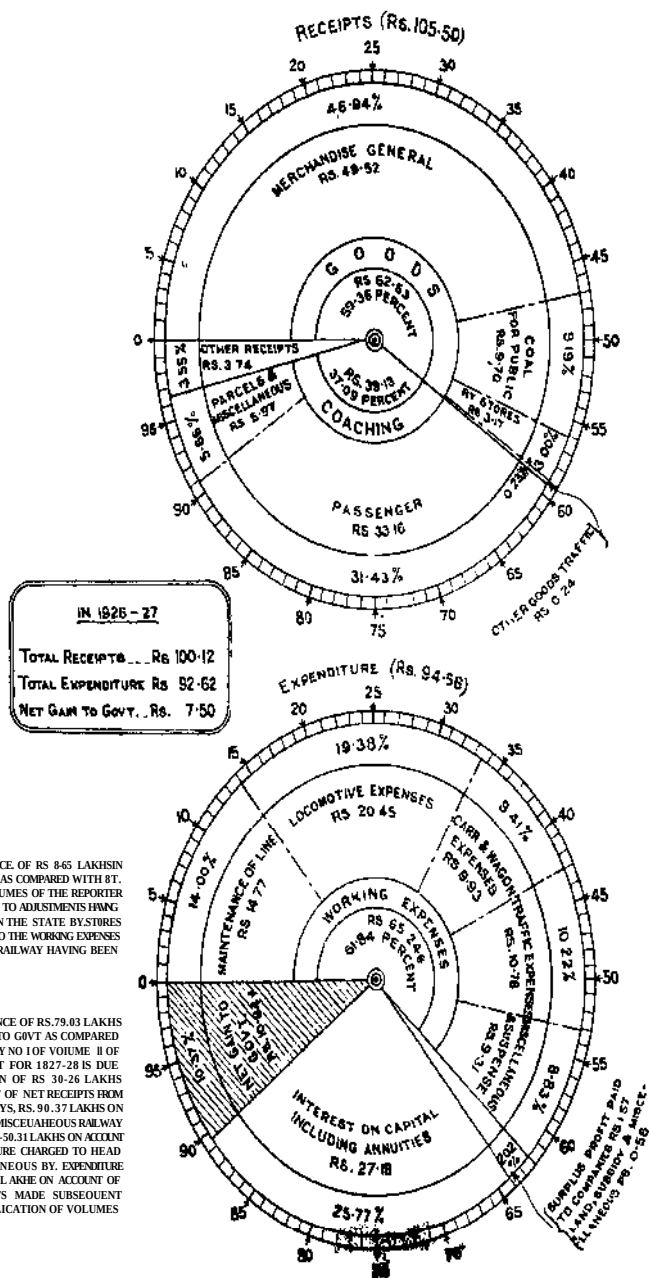
The visible balance of trade in merchandise and treasure in 1927-28 was Rs 50 crores in favour of India as compared with Rs 40 crores in 1926-27.

20. Financial results of working.—The financial results of working of railways in India during 1927-28 and 1926-27 are compared in the table below. It takes into account only those Railways with which the Government of India is directly concerned —

		(Figures in thousands)	
		1926-27.	1927-28
		Rs.	Rs.
(i) (a) Gross Earnings		99,03,98	1,04,28,72
(b) Surplus profits from subsidised Compomes		39,72	35,61
(c) Interest on Depreciation and Reserve Funds		63,92	82,20
(d) Other Miscellaneous Railway Receipts		4,75	8,17
TOTAL RECEIPTS		1,00,12,37	1,05,49,70
(ii) (a) Working expenses (excluding Depreciation)		63,51,14	53,86,80
(b) Depreciation		10,88,58	11,37,55
(c) Surplus profits paid to Companies		1,65,56	1,57,14
(d) Lund and Subsidy to Companies		5,21	5,33
(e) Interest		25,86,70	27,18,30
(f) Miscellaneous Railway Expenditure		65,52	50,17
TOTAL EXPENDITURE		92,62,71	94,55,29
(iii) Net Gain		7,49,66	10,94,41
(iv) (a) Contribution from railway to general revenues (including excess of railway surplus over three crores)		6,01,13	6,30,77
(6) Surplus railway revenue transferred to Railway Reserve Fund		1,48,53	4,63,64
TOTAL		7,49,66	10,94,41

RAILWAY RECEIPTS AND EXPENDITURE ON STATE OWNED LINES IN INDIA IN 1927-28.

FIGURES IN CRORES.



21. The net gain in 1927-28 from railways amounted to 11 crores or $3\frac{1}{2}$ crores more than the preceding year. Of this amount about $6\frac{1}{3}$ crores accrued under the convention to general revenues and the balance was transferred to railway reserves.

22. This satisfactory result is attributable mainly to the very large increase realised in earnings without a corresponding addition to working expenses. Whereas the former exceeded the figures for the preceding year by nearly $5\frac{1}{4}$ crores or over 5 per cent., the rise in ordinary working expenses excluding depreciation was only about $\frac{1}{3}$ of a crore or less than one per cent. The variations under other items are comparatively small, though the increase of half a crore under depreciation and of $1\frac{1}{3}$ crores in interest charges following large additions to capital deserves mention.

23. Most railways have contributed substantially to the increase of 5-20 crores in the gross earnings of the year. The total is made up as follows:—

	Lakhs.
Bengal Nagpur Railway	9 5
East Indian Railway	89
North Western Railway	89
Madras and Southern Mahratta Railway	5 3
Burma Railways	4 4
Great Indian Peninsula Railway	42
South Indian Railway	32
Eastern Bengal Railway	3 1
Other railways	45
	6,20

It is noteworthy that the increase on almost all railways occurs under goods earnings, though passenger traffic has also contributed its share towards the general improvement. But for the disastrous floods between the middle of July and the middle of August in Guzarat and on the East Coast, affecting seriously the earnings of the Bombay, Baroda and Central India and Bengal Nagpur Railways, the receipts would have been still higher. Taking individual railways, special mention must be made of the increase on the Bengal Nagpur Railway, whose earnings during the year constituted a record, though, it must be added, this is in part due to the strike at the end of 1926-27 which held up goods traffic and threw forward earnings to the next year. The East Indian Railway improved both in coaching and goods earnings, the former on account of the 12-yearly Kumbh Mela at Hardwar and the increased traffic following the general extension of week-end tickets and other concessions in fares. The earnings of the North Western Railway were nearly a crore higher than the previous year mainly on account of increased receipts from raw cotton and wheat and other grains. The Southern railways too showed a large increase, earnings having been stimulated by the heavy demand in the European market for ground-nuts, and the prosperity brought about by favourable monsoons resulting in a larger movement of passengers.

24. The increase of about £ of a crore in ordinary working expenses of State owned Railways during 1927-28 is specially noteworthy, as the rise in expenditure in most railways is trifling when compared with the increase in earnings. Except on the Bengal Nagpur Railway, where there is an increase of 60 lakhs which is, in its way, almost as much of a record as the increase in earnings, of which it is a direct result, and has been swelled by the cost of heavy repairs to breaches undertaken during the year. the

growth of working expenses is small. The more important figures are given below—

	Increase + Decrease —
	Lakhs.
Bengal Nagpur Railway.	+60
North Western Railway.	+27
Eastern Bengal Railway.	+13
Burma Railways.	+11
Bombay, Baroda and Central India Railway	-18
Great Indian Peninsula Railway.	-68
Other railways and suspense.	+1
	+ 36

The decrease on the Great Indian Peninsula Railway is mainly due to large credits from relaying track and to a lower unit cost of repairs to rolling stock, but there has also been a welcome fall in operating charges. The Bombay, Baroda and Central India Railway is the only other railway which shows a decrease in expenditure; the reduction is mainly under operating expenses as a result of cheaper cost and reduced consumption of fuel. On other railways the increase is attributable to various causes, such as, increased cost of track maintenance due to opening of new lines, increments to staff, arrear payments on introduction of time-scales on certain railways, etc.

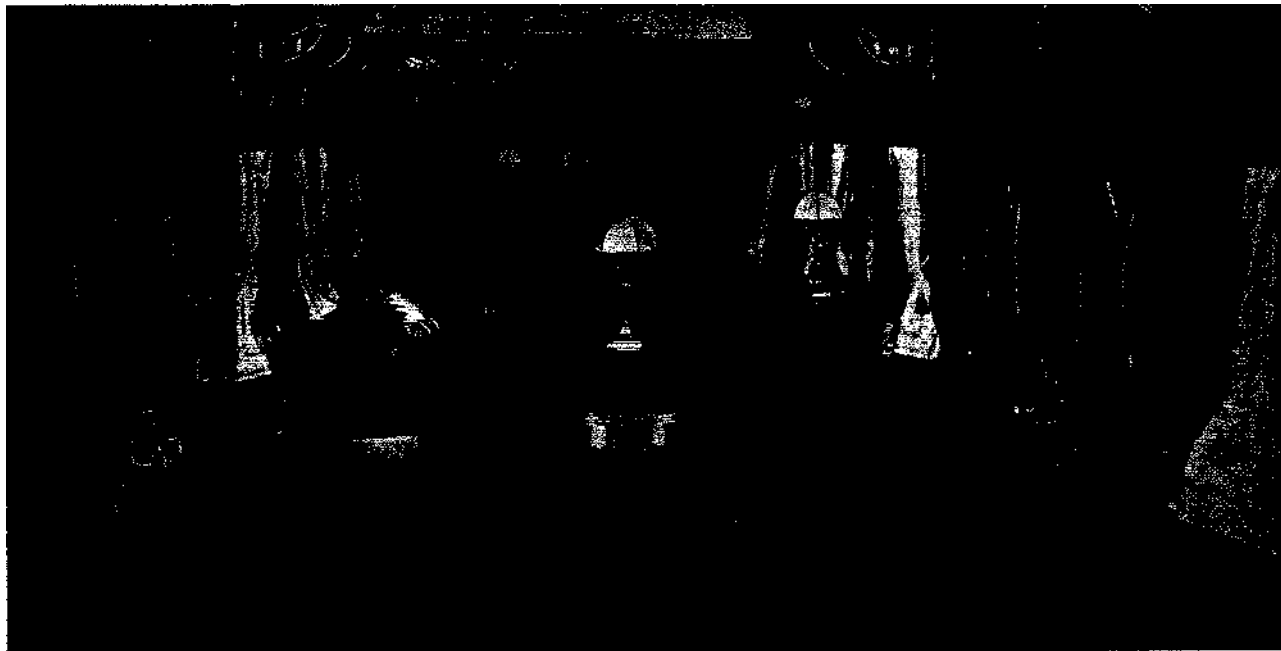
25. The following table compares the working expenses of 1926-27 and 1927-28 under the Major Heads for which grants are voted by the Assembly :—

	(Figures in thousands.)		
	1926-27.	1927-28	Difference
	Rs.	Rs.	Rs.
1. General Administration . . .	13,00,00	13,44,26	+38,26
2. Repairs and Maintenance and Operation	43,83,32	43,90,60	+7,28
3. Appropriation to Depreciation Fund	10,88,58	11,37,56	+48,97
TOTAL . .	67,77,90	68,72,41	+94,51
Deduct—Worked lines and Suspense	3,38,18	3,48,06	+9,8
TOTAL WORKING EXPENSES . .	64,39,72	66,24,35	+184,63

The increase under general administration is due, as usual, to extra staff employed on new lines opened during the year, to annual increments to staff with consequential increases in the payment of provident fund bonuses and gratuity, and to heavy payments to workshop staff brought under reduction on certain railways.

Under repairs and maintenance and operation, there is a net increase of 7 lakhs, a decrease of 9 lakhs under repairs and maintenance being set off by an increase of 2 lakhs under fuel and of 14 lakhs under other operating charges.

JODHPUR RAILWAY



Saloon for His Highness the Maharaja of Jodhpur

earnings in the year under review and compares with the returns during the last 5 years as follows:—

1922-28	4-38
1923-24	6-24
1924-25	5-85
1925-26	6-31
1926-27	505
1927-28.	5-41

The percentages take into account the Capital at charge of both Commercial and Strategic lines.

28. The amounts appropriated to the depreciation fund by a charge on the working expenses of the State-owned railways and the amounts drawn from this fund to meet the expenditure actually incurred on replacements and renewals during 1926-27 and 1927-28 are given in the statement below:—

(Figures in thousands of rupees)

Railways	Credit to Depreciation Fund by debit to Revenue on account of depreciation in 1926-27.	Amount spent on Replacements and Renewals and charged to Depreciation Fund in 1926-27.	Credit to Depreciation Fund by debit to Revenue on account of depreciation in 1927-28.	Amount spent on Replacements and Renewals and charged to Depreciation Fund in 1927-28.
<i>State Lines managed by State.</i>				
		1,93,37	2,28,04	1,96,79
Eastern Bengal.	77,28	52,25	79,04	61,72
East Indian	1,99,27	1,00,42	2,07,27	1,18,76
Great Indian Peninsula	1,51,50	1,02,09	1,57,98	2,73,46
Aden .			30	
<i>State Lines managed by Companies.</i>				
Bengal Nagpur	1,14,48	28,08	1,16,45	67,25
Bombay, Baioda and Central India	1,10,12	99,59	1,23,69	1,14,43
Burma	43,25	40,67	45,11	36,99
Madras and Southern Mahratta	82,06	59,53	81,12	1,20,98
South Indian	49,71	38,88	53,47	93,15
Other Railways	44,42	23,61	45,07	31,00
TOTAL	10,88,58	8,04,65	11,37,55	10,95,13

The appropriation to the depreciation fund in 1927-28 was about half a crore more than during the previous year. The actual expenditure on Replacements and Renewals of wasting assets amounted to nearly 3 crores more than during the previous year, but it was still within the amount appropriated for the purpose in the year.

29. An analysis of the financial results of the working of the Railways owned by the State is given in the statement below for the last three years, by each railway:—

(Figures in thousands of Rupees.)

Railways.	Year.	Capital at charge	Deduct amount of capital contributed by Companies and Ind. an States.	Net Government Capital at charge	Receipts.	Working Expenses including Depreciation	Net Receipt*.	Percentage of Net Receipts on Capital at charge.	CHARGE AGAINST NET REVENUE RECEIPTS.		Gain.	Loss.
									Payment on account of share of Surplus Profits.	Interest Annuity and Sinking Fund charges.		
1	2	3	4	5	6	7	8	9	10	11	12	13
<i>State Lines managed by State.</i>	1925-26	1,15,92,75		1,15,92,75	15,42,39	10,76,22	4,66,17	40		4,37,08	29,09	
	1926-27	1,25,50,02		1,25,50,02	15,70,70	11,50,40	4,20,30	3-3		4,63,97		43,67
	1927-28	1,33,10,61		1,33,10,61	16,59,28	11,94,93	4,64,35	3-5		5,05,18		40.83
	1925-20	44,69,27		44,69,27	633,87	4,64,18	1,69,69	38		1,69,60	10,09	
		45,06,73		45,06,73	6,77,12	4,45,89	2,31,73	5-1		1,61,52	70221	
	1927-28	46,81,70		46,81,70	7,08,20	4,59,64	2,48,56	5-3		1,67,78	80,78	
	1925-26	1,29,62,73		1,29,62,73	19,92,11	12,22,71	7,69,40	59		4,85,26	2,84,14	
		1,34,73,85		1,34,73,85	19,77,51	12,02,37	7,75,14	57		5,08,17	2,66,97	
	1927-28	11,40,16,48		1,40,16,48	20,66,85	12,15,10	8,51,75	61		5,32,71	3,19,04	
	1925-20	1,07,97,56		1,07,97,56	14,79,90	10,68,03	4,11,37	38	12,54	3,51,96	47,37	
	1926-27	1,09,69,26		1,09,69,26	14,30,21	10,42,40	4,37,81	4-0		3,65,41	71,40	
	1927-28	1,13,92,91		1,13,92,91	15,22,67	9,91,02	5,31,65	4-7		3,84,74	1,46,91	
	1925-26	66,68,90	13,16,87	53,42,03	8,39,99	5,92,88	2,47,11	3-7	6,80	236,291		46,60
	1925-27	68,47,92	11,19,91	57,28,01	8,22,29	5,60,55	2,61,74	38	6,92	2,95,28		40,46
	1927-28	70,18,68	10,53,13	59,65,55	9,17,45	6,22,94	2,94,51	4-2	8,72	3,06,10		20,31
<i>State Lines managed by Companies</i>	1925-28	67,06,79	2,51,50	(a, 64,55,29	12,25,95	7,44,89	4,81,06	72	(c) 26 41	2,34,234	2,20,31	
	1926-27	68,82,57	2,52,10	66,30,47	11,35,35	7,30,62	4,04,73	59	20 90	2,41,47	1,42,36	
	1927-28	71,49,30	2,52,32	68,96,98	11,45,28	7,20,04	4,25,24	5.9	15,12	2,52,60	1,57,52	

(Figure in thousands of rupees).

Railways.	Year.	Capital at charge	Deduct amount of capital contributed by Companies and Indian States	Net Government Capital at charge.	Receipts.	Working Expenses including Depreciation.	Set Receipts.	Psrcentage of Net Receipts on Capital at charge.	CHARGE AGAINST NET REVENUE RECEIPTS		Gain.	Loss.
									Payment on account of share of Surplus Profits	Interest Annuity and Sinking Fund charges.		
1	2	3	4	5	6	7	8	9	10	11	12	13
<i>State Lines managed by Companies—contd.</i>												
	1925-26	28,23,15	6,69,67	21,83,48	4,93,82	2,76,20	2,17,62	77	37,66	98,67	81,29	
Boras	1926-27	29,44,23	6,69,67	22,74,56	4,62,69	2,85,09	1,77,60	60	49,48	1,03,81	24,31	
	1927-28	31,35,12	6,69,67	24,65,45	5,06,63	2,97,71	2,08,92	61	35,63	1,11,83	61,46	
	1925-26	61,26,96	10,73,86	40,63,10	8,19,24	4,65,76	3,53,48	69	(d) 77,67	1,90,96	84,86	
Iladraa and Southern Mahratta	1926-27	62,81,15	10,07,08	42,74,07	8,12,55	4,77,13	3,36,42	63	76,10	1,95,90	63,42	
	1927-28	55,30,58	10,07,08	45,23,50	8,65,90	4,77,47	3,88,43	70	76,27	2,06,77	1,05,59	
	1926-26	28,00,12	4,15,34	(b) 23,85,08	5,44,12	3,15,56	2,28,56	82	(e) 10,68	1,04,76	1,13,12	
	1926-27	30,71,60	4,15,33	26,56,27	5,48,91	3,04,69	2,44,22	79	8,67	1,15,90	1,19,65	
	1927-28	33,96,76	4,15,33	29,81,43	5,80,67	3,13,80	2,66,87	71	10,54	1,31,68	1,24,65	
	1925-26	35,20,19	5,14,66	30,05,63	3,98,61	2,15,53	1,83,08	52	5,66	1,31,58	46,84	
Other Railways	1926-27	35,68,34	6,14,66	30,53,78	1,16,65	2,32,00	1,84,65	51	3,49	1,34,27	46,89	
	1927-28	37,11,95	5,14,56	31,97,39	4,50,79	2,40,47	2,10,32	57	10,86	1,19,11	80,35	
	1926-27					9,08	—9,08					9,08
	1927-28					—8,77	+8,77				+8,77	
	1925-26				53,77		53,77				53,77	
Interest on Depreciation and Reserve Fund balances	1926-27				63,92		63,92				63,92	
	1927-28				82,20		82,20				82,20	

Net Miscellaneous Receipts and Charges not attributable to any one Railway.	1925-26										5,07	
	1926-27											26,26
	1927-28											11,73
	1925-26	6,74,58,72	42,41,80	6,32,10,92	100 23,77	64,41,96	35,81,81	53	1,77,42	24,81,12	9,28,34*	
	11 26-27	7,00,95,67	39,78,65	6,61 17,02	99,67,90	64,39,72	35,28,18	50	1,65,56	25,86,70	7,49,66	
	1927-28	7,33,44,09	39,12,09	6,94,32,00	1,05,05,92	65,24,35	39,81,57	5-4	1,57,14	27,18,30	10,94,40	
Provincial Railways	1925-26	20,22		20,22	2,77	2,48	29	14		87		58
	1926-27	19,98		19,98	2,61	2,53	8	04		87		79
	1927-28	14,94		14,94	1,13	1,02	11	0 7		57		46
Grand Total (Central and Provincial)	1925-26	6,74 78,94	42,41,80	6,32,37,14	1,00 26 54	64,44,44	35,82,10	53	1,77,42	24,81,99	9,27,76	
	1926-27	7 01,15,65	39,78,65	6,61,37,00	99 70,51	64,12,25	35 28,26	50	1,65,56	25 87,57	7,48,87	
	1927-28	7,33,59,03	39,12,09	6,94,46,94	1,05,07,05	55,25,37	39,81,68	5-4	1,57,14	27,18,87	10,93,94	
North Western (Commercial Lines.)	1925-26	4,89,04		84,89,04	13,78,32	8,96,08	4,82,21	5 7		3,06,14	1 76,10	
	1920-27	91,0 1,60		94,04,50	14,18,70	9,64,47	4,54,23	4-8		3,33,30	1,20,93	
	1927-28	1,00,68,84		1,00,68,84	14,99,38	10,01,22	4,98,18	6-8		3,36,82	1,61,36	
	1925-26	31,03,71		31,03,71	1,64,07	1,80,14	—16,07	- 0 5		1,30,94		1,47,01
	1926-27	31,60,50		31 60,50	1,53,45	1,86,72	—33,27	—1-5		1,31,35		1,64,62
	1927-28	32,41,77		32,41,77	1,59,90	1,93,71	- 33, 81	—1-3		1,72,52		2,06,33

(a) Include Capital provided by the Palanpur Durbar.

(b) " " expenditure on Tinnevely Quillon (Indian State section;

(c) " " payments to Durbars .—

	1925-26	1926-27	1927-
Jaipur Durbar	12,24	10,74	7,21
Limbdi " . . .			21
Pananpur " . . .	21	17	18
(d) Includes payuienta to Mjaore Durbar	21,16	21,71	21,67
(e) " " Travancore "	2,86	1,29	1,86

Include Aden Railway —

Column 6 excludes 96 for Aden Railway (strategic portion)

7 96

Not receipt for Aden strategic is "Nil."

"

30. From the foregoing analysis, it will be observed that the year under review discloses very satisfactory financial results. Except the Bengal Nagpur Railway, all the principal commercial lines show considerable increases in the gain to the State from their working as compared with last year.

The Great Indian Peninsula, Burma and Madras and Southern Mahratta Railways show remarkably good results and the gain to the State on these Railways amounted to Rs. 1,47, 61 and 1,06 lakhs respectively against Rs. 71, 24 and 63 lakhs in the year 1926-27 or an increase of 76, 37 and 43 lakhs respectively. The very satisfactory results on the Great Indian Peninsula Railway is made up of a decrease of 51 lakhs in working expenses (including depreciation) and an increase of Rs. 42 lakhs in earnings set off partly by an increase in interest charges. On the Burma Railways the development of traffic of all kinds on the main and feeder lines has contributed to the satisfactory result. The total contribution of earnings from the feeder line to the parent line amounted to 1,09 lakhs or 2141 per cent of the gross earnings of the whole system for the year. The increase in traffic earnings on the Madras and Southern Mahratta Railway constitutes a new record in the history of that Railway.

The working of the Bengal Nagpur Railway has again resulted in a loss but a much smaller loss than in the previous year. The amount of loss fell from 40½ lakhs in 1926-27 to 20 lakhs during the year under review. This improvement is due as already explained to the phenomenal increase of nearly a crore of rupees in gross earnings.

The working of the Commercial Section of the North Western Railway resulted in an increase of 40½ lakhs in the net gain as compared with the previous year, but there has been a more than corresponding increase in the net loss (42 lakhs) from the working of the Strategic Sections.

On the Commercial Sections alone, the net gain from working amounted to over 1,61 lakhs.

31. Analysis of Earnings.—The total earnings of all Indian Railways including those with which the Government of India is not directly concerned, amounted to Rs. 118.22 crores of which Rs. 69.58 crores or 58.9 per cent were from goods traffic, Rs. 39.18 crores or 33.1 per cent from passenger traffic and Rs. 9.46 crores or 8.0 per cent, from parcels, luggage and miscellaneous earnings.

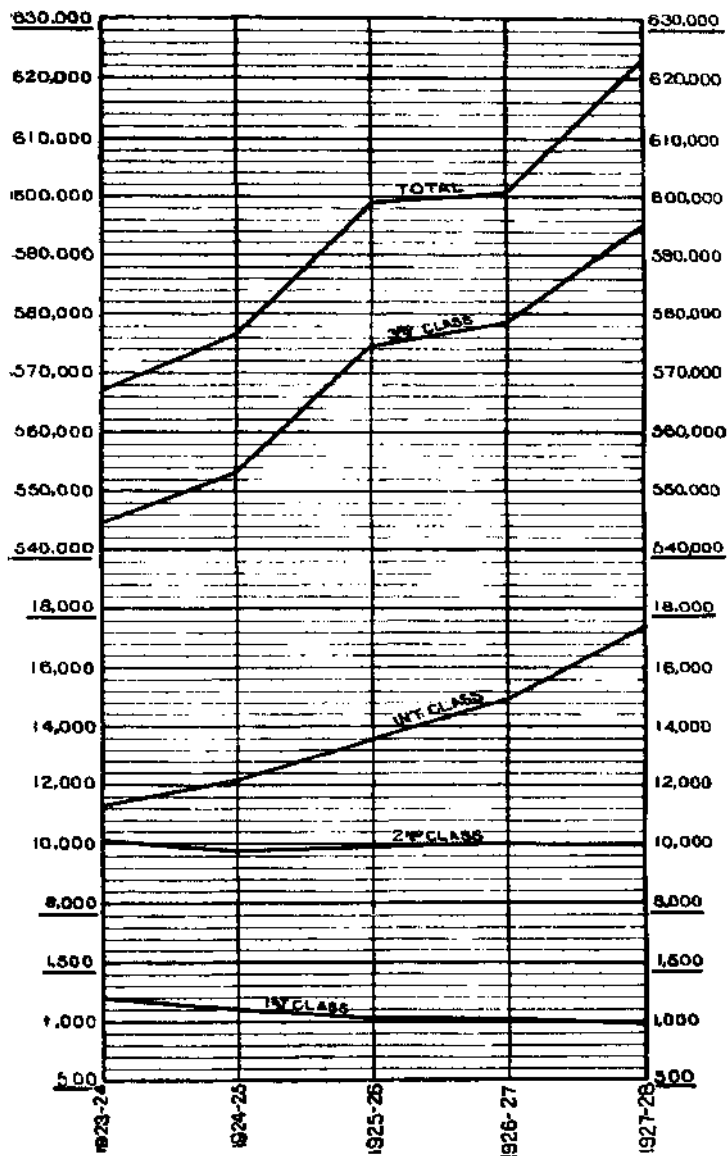
Passenger earnings.—Passenger earnings showed an increase of 2.77 per cent from Rs. 38.13 to 39.18 crores. The following table shows the numbers of, and earnings from passengers separately for each class for the 4 years previous to the War and for the 5 latest years. Graphs are also inserted showing the progressive increases in the number of passengers carried and passenger mile by classes from the beginning of 1923-24:—

Car	NUMBER OF PASSENGERS CARRIED (IN THOUSANDS)					EARNINGS FROM PASSENGERS (IN THOUSANDS OF RUPEES)				
	1st Class	2nd Class	Inter. Class	3rd Class	Season and Vendor's tickets	1st Class	2nd Class	Inter Class	3rd Class	Season and Vendor's tickets
1910	85	2,784	10,702	315,839	24,341	58.82	77.23	94.99	14,65.16	16.85
1911	703	2,947	11,409	331,055	25,687	66.38	83.83	1,08.88	15,73.15	16.85
1912	700	3,030	10,508	856,789	26,810	62.90	83.81	91.37	17,01.35	17.56
1913-14	715	3,253	12,000	390,412	30,114	68.94	88.70	1,03.48	18,87.03	19.36
1923-24	1,199	10,128	11,374	544,622	†	1,31.17	2,02.73	1,41.10	38,32.82	†
1924-25	1,101	9,778	12,201	553,266	†	1,22.93	1,92.00	1,48.01	34,12.45	†
1925-26	1,033	9,901	13,602	674,608	†	1,20.42	1,89.42	1,59.61	34,76.54	†
1926-27	1,012	10,006	14,945	678,409	†	1,17.78	1,88.31	1,61.79	83,44.63	†
19 7-38	080	9,883	17,351	594,821	†	1,13.71	1,95.67	1,69.33	34,39.38	†

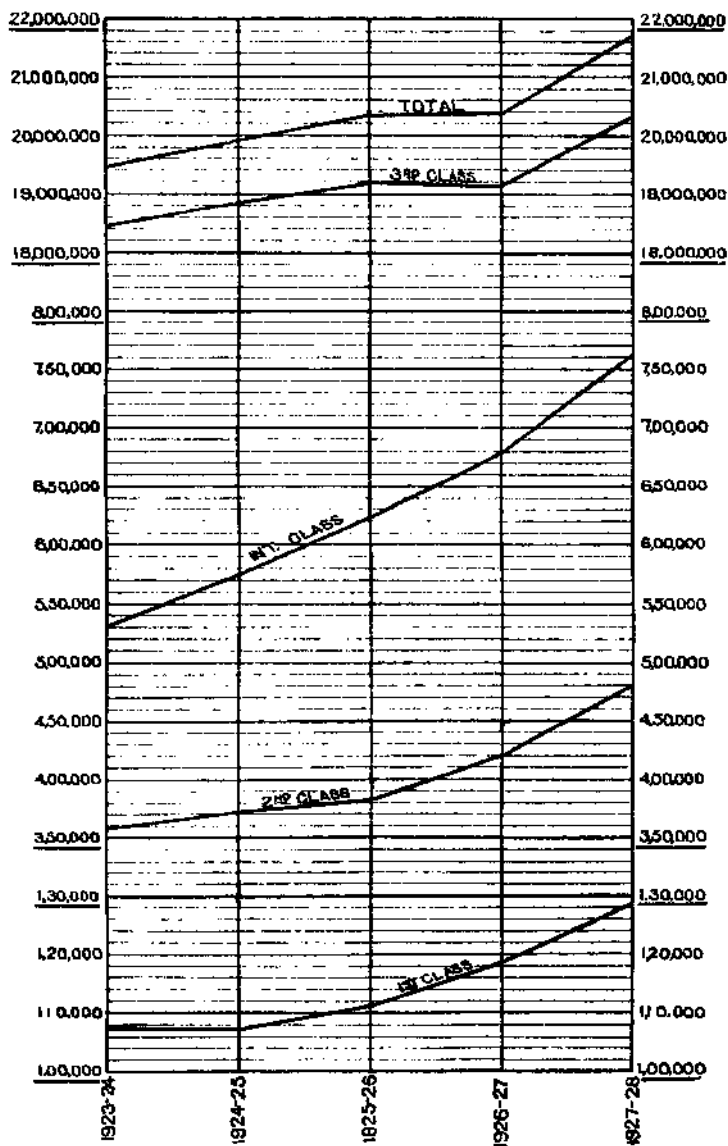
† The number of season and vendor's tickets and their earnings included under the respective classes; the former at the rate of 60 single journeys per month.

NOTE.—In pre-war reports the sum of the number of passengers carried on each separate railway was shown as the total number of passengers carried on all railways. Passengers travelling over two or more railways were thus counted as two or more passengers. The actual number of passengers carried on all railways is in fact the same as the number of passengers originating and this figure has been adopted for 'number of passengers carried' in the reports from 1923-24 onwards. As the number of passengers originating is not available prior to 1923-24 the figures of pre-war years have been adjusted.

NUMBER OF PASSENGERS CARRIED ON
INDIAN RAILWAYS.
(IN THOUSANDS)



**PASSENGER MILES
INDIAN RAILWAYS.
(IN THOUSANDS)**



32. Reductions in Passenger Fares.—Mention was made in last year's report of reductions in passenger fares which were made by the Bombay, Baroda and Central India, Great Indian Peninsula, North Western, Burma, Madras and Southern Mahratta, East Indian and South Indian Railways.

In the year under review the following further reductions were made:—

Bengal and North-Western Railway.—With effect from the first of April 1927, this railway reduced its 1st and 2nd class fares for distances over 150 miles from 18 to 12 pies and from 9 to 6 pies per mile respectively. From the same date inter class fares were reduced for all distances from 4½ to 4 pies per mile and 3rd class fares for distances over 50 miles from 2½ to 2 pies per mile.

Eastern Bengal Railway.—With effect from the 1st August 1927, this railway reduced its 1st class fares for the first 150 miles from 30 to 24 pies per mile and for distances over 150 miles from 20 to 18 pies per mile. From the same date 3rd class fares by mail trains were reduced as under:—

Previous	Revised.
1-150 miles 5 pies	All distances 3 pie.
151 and over 4 pies	

East Indian Railway.—With effect from 1st March 1928 this railway reduced its inter class mail fares for the first 300 miles from 7 to 5 pies per mile. From the same date 3rd class fares by mail trains were reduced for the first 50 miles from 5 to 3 pies, for distances from 51 to 300 miles from 4 to 3 pies, and for distances over 300 miles from 2½ to 2 pies per mile.

Great Indian Peninsula Railway.—With effect from the 1st March 1928, this railway reduced its 3rd class mail fares for the first 150 miles from 5 to 4 pies per mile, for distances from 151 to 300 miles from 5 to 3 pies per mile and for distances over 300 miles from 4 to 3 pies per mile.

33. During 1927-28, 18½ million more passengers were carried on Class I Railways than in 1926-27 and passenger earnings increased by Rs. 1 crore. The following statement shows how these increases were distributed over the various railway administrations:—

Name of Railway.	Additional No. of Passengers transported	Additional Earning.
Assam Bengal	1,024,300	6,34,000
Bengal and North Western	3,259,000	3,35,000
Bengal Nagpur	1,333,600	8,89,000
Bombay, Baroda and Central India	1,663,500	2,47,000
Burma	1,539,500	10,81,000
Eastern Bengal	2,722,500	12,62,000
East Indian	4,375,800	38,09,000
Great Indian Peninsula	412,700	18,000
Jodhpur	107,200	1,000
Madras and Southern Mahratta	575,800	5,80,000
Nizam's Guaranteed State	1,769,000	1,62,000
North Western	888,700	45,000
Rohilkund and Kumaon	609,900	1,35,000
South Indian	3,404,600	13,79,000
TOTAL	18,581,700	99,93,000

This very large increase in earnings from passengers carried (except on the Bombay, Baroda and Central India and North Western Railways) is partly due to the rise in the average number of miles a passenger was carried on the Broad Gauge from 34.3 in 1926-27 to 36.1 in 1927-28 (a consequence of the reduction in long distance fares) but the increase in both numbers of passengers and earnings is mainly attributable to the stimulus given to passenger traffic generally by the reductions of fares.

34. Passengers travelling without tickets.—It was stated in last year's report that a system which might possibly lead to the prevention of this evil had been introduced on parts of the East Indian Railway. Under

this system which is known as the 'Crew System of ticket checking', a crew of ticket checkers under a responsible supervisor accompanies each passenger train throughout its run. One ticket checker is posted to each coach and it is his duty to prevent any passenger entering the carriage unless he holds a proper ticket. The ticket checkers are further responsible for the collection of tickets from passengers before they alight at their destination stations. This arrangement is designed to prevent misappropriation of recoveries and to protect illiterate passenger against excess recoveries.

During the year under review the Eastern Bengal Railway introduced the system in a modified form over part of the line and arrangements were made to introduce it on the (Great Indian Peninsula Railway over certain sections for a period of six months from the 1st April 1928. Sanction was also given in October 1927 to the introduction of the system on the South Indian Railway for one year.

36. Goods Earnings.—There was a large increase in earnings from goods traffic on all railways amounting to Rs. 4-31 crores, chiefly due to improved earnings from oilseeds, fuel, metallic ores and iron and steel.

The tonnage and earnings from the principal commodities on Class I Railways during the last two years are shown in the statement below. Apart from the main increases, mentioned above, there were increased earnings under all heads except gram and pulse, wood unwrought, sugar, -jute, fodder, gur, jaggree, molasses, etc., and livestock.

Commodity.	1926-27		1927-28		Increase [†] Decrease in Earnings (lakhs)
	No of tons originat- ing (in millions)	KB. (in crores).	No of tons originat- ing (in millions)	Rs (in crores).	
(1) Fuel for public and Foreign Railways.	18-95	9.65	2038	1017	+ 52
(2) Materials and stores on Revenue account.	16-13	2.89	14-84	3-37	+ 48
(3) Wheat	1-76	2.53	176	2 62	+ 9
(4) Rice in the husk and rice not in the husk.	411	3.85	4-40	411	+ 26
(5) Gram and Pulse, Jowar and Rajra and other grains.	3-05	4.35	300	415	—20
(6) Marble and stone	2-99	0.88	333	102	+ 14
(7) Metallic ores	2 45	1.04	295	1-35	+ 31
(8) Salt	1-42	1.89	1-48	1-98	+ 9
(9) Wood, unwrought	1-32	0.89	132	089	
(10) Sugar, refined and unrefined.	0-77	1.88	079	1 81	—7
(11) Oilseeds	2-35	3.43	2-74	415	+ 72
(12) Cotton raw and manufactured.	V53	5.80	154	5-98	+ 18
(13) Jute, Raw	1-20	V78	1.18	1-70	—8
(14) Fodder	0-80	0.60	0'75	060	
(15) Fruits and vegetables fresh.	1-08	0.91	119	108	+ 17
(16) Iron and steel wrought	102	1.97	120	228	+ 31
(17) Kerosine oil	0.92	2.04	106	2-26	+ 22
(18) Gur, Jaggree, Molasses, etc.	0-78	1.19	0-75	1-15	—4
(19) Tobacco	0-26	0.66	0-28	069	+ 3
(20) Provisions	0-63	1.31	0-69	141	+ 10
(21) Military stores	0-88	0.37	0-38	0 42	+ 5
(22) Railway materials	8-30	1.20	991	1-51	+ 31
(23) Live stock	0-22	0.69	0-22	068	—1
(24) Other commodities	13-65	11.44	9 68	1196	+ 52
TOTAL	82-07	63-24	85'82	67-34	4-10

NORTH-WESTERN RAILWAY



His Majesty the King of Afghanistan's Train

36. Stores balances.—The table below compares the figures of Stores balances since 1921-22:—

Stores Balances (in thousand)

Railways	1921-22.	1922-23	1923-21	1921-25	1923-26	1926 27	1927-28
	Rs	Rs	Us	Rs	Rs	Rs	Rs
Assam-Bengal	24.81	31.48	18.38	12.30	9.49	12.59	13.01
Bengal-Nagpur	1,40.26	1,61.88	1,48.09	1,49.44	1,27.64	1,17.17	1,07.87
Bombay, Baroda and Central India	2,76.83	2,72.43	2,33.25	1,77.39	1,62.48	1,46.28	1,67.17
Burma	66.62	84.85	98.71	84.62	75.00	44.82	69.41
East Indian (including Oudli and Rohilkhand)	3,92.50	4,39.19	4,10.66	3,14.19	2,81.46	2,48.17	2,98.92
Eastern Bengal	2,51.63	1,76.20	1,57.83	1,21.99	1,12.27	84.07	84.39
Great Indian Peninsula	4,66.49	3,88.35	3,97.77	2,89.49	2,38.67	2,23.13	2,63.49
Madras and Southern Mahratta	1,50.52	1,66.09	1,50.91	1,02.86	84.31	76.75	93.91
North Western	3,94.12	3,92.69	3,79.78	3,24.39	3,23.75	3,67.81	4,82.73
South Indian	1,14.45	1,38.66	99.02	77.04	1,13.30	1,06.60	1,23.76
Other Railways	41.13	46.96	63.50	54.94	40.08	41.46	48.16
TOTAL	23,19.36	22,98.78	21,67.92	17,08.65	15,68.45	14,68.81	17,32.81

Final figures

There has been a set back in the year under review to the steady progress that has been made in the past years in reducing the heavy stocks. This is due mainly to materials obtained for the heavy renewal and construction programmes in progress, which could not be utilised on works before the close of the year

37. Compensation claims for goods.—A further marked improvement is noticeable under this head due to the sustained attention that has been paid to the subject by railway administrations. The table below shows the amounts paid by each Class I Railway in the last six years. It will be seen that there has been a steady fall in the total figures from Rs. 1.20 lakhs in 1922-23 to Rs. 9½ lakhs in 1927-28, the latter amount being 8 per cent of the former.

Claims for goods lost or damaged paid by Class I Railways (excluding Jodhpur Railways) during 1922-23 to 1927-28.

Railways	1922-23.	1923-24.	1924-25.	1925-26	1926-27	PERCENTAGE TO GOODS EARNINGS.		
						1926-27.	1927-28	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Assam Bengal	23,085	17,069	17,587	21,841	20,979	18,006	0.22	0.16
Bengal and North-western.	1,70,516	1,62,461	80,680	92,932	85,369	69,875	0.50	0.31
Bengal Nagpur	1,98,972	2,63,703	2,01,889	80,093	54,988	65,248	0.10	0.10
Bombay, Baroda and Central India.	15,68,572	6,44,678	0,03,064	4,40,465	2,60,213	1,57,447	0.38	0.22
Burma	45,183	29,319	33,662	30,982	41,295	42,791	0.15	0.14
Eastern Bengal	1,98,554	1,77,020	1,68,020	1,86,736	1,83,822	1,71,266	0.48	0.45
East Indian	57,99,225	42,72,620	30,61,451	11,73,008	3,82,219	2,36,368	0.30	0.18
Great Indian Peninsula	19,68,436	16,17,133	6,63,609	3,41,130	1,92,400	1,18,333	0.20	0.12
Madras and Southern Mahratta.	2,21,125	1,64,162	85,548	91,018	84,859	80,517	0.17	0.14
Nizam's Guaranteed	38,222	24,206	17,022	18,219	11,211	11,270	0.09	0.09
North Western	16,89,608	4,73,339	6,81,162	3,89,771	1,55,097	36,383	0.16	0.03
Rohilkhand and Kumaon.	45,015	16,681	21,860	17,088	4,318	7,347	0.13	0.21
South Indian	63,951	44,502	32,015	48,636	45,169	17,691	0.17	0.06
TOTAL	1,20,30,554	78,96,893	56,70,499	29,31,819	15,21,939	9,49,776	0.24	0.14

CHAPTER III.

NEW CONSTRUCTION AND ENGINEERING WORKS.

38. Capital Expenditure.—At the end of March 1928 the total Capital at charge on all railways including those under construction amounted to Rs. 822-86 crores of which Rs 733 30 crores was Capital at charge on State-owned Railways inclusive of premia paid in the purchase of Companies' lines. The remainder 89-41 crores represented Capital raised by Indian States, Companies and District Boards.

The Capital at charge of State-owned Railways is composed as follows :- -

£	
Liability and debt incurred in purchase of railways	150,109,299
Less liability and debt cancelled by the operation of Annuities and Sinking Funds	29,248,929
Net amount outstanding	120,860,370

Rs. (omitting 000).

The above figure converted at Rs. 15= £1.	1,80,85,01
Direct expenditure by Government	5,52,44,00

TOTAL . 7,33,29,97

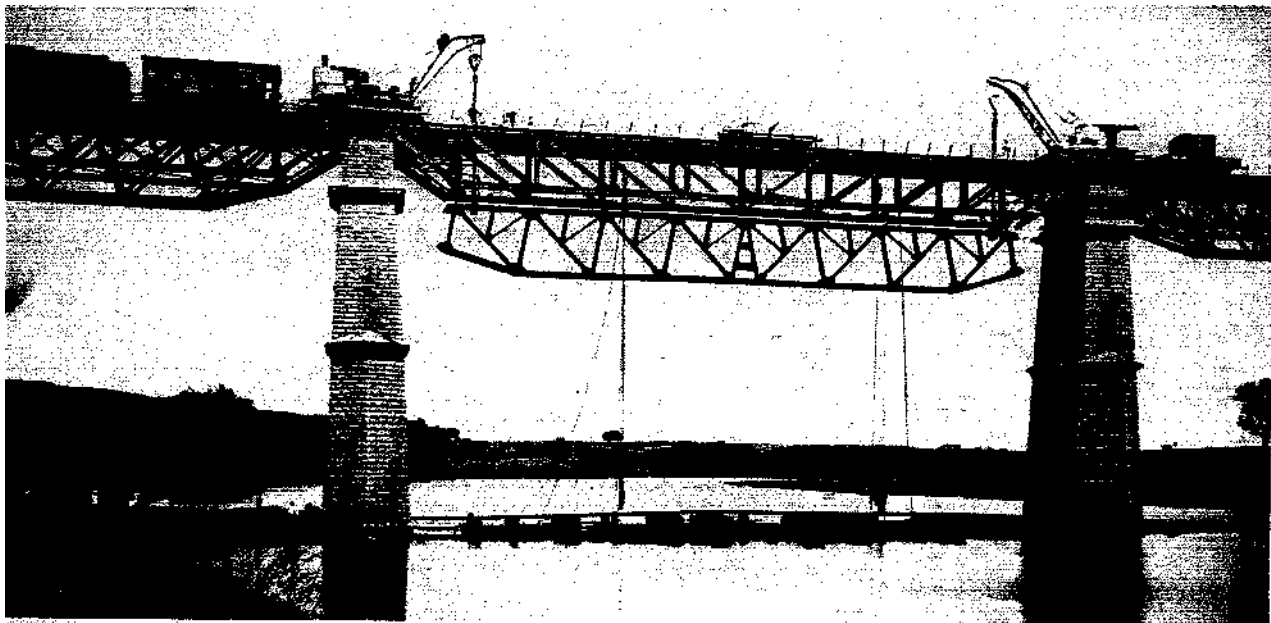
By far the greater portion of this amount, namely, Rs 6,94,17,88,000 is Government Capital and only 1/19th or Rs 39,12,09,000 is owned by Companies. These figures include Rs. 32-38 crores on account of Capital expenditure to the end of March 1928 on strategic lines.

39. The total Capital outlay on all railways during 1927-28 was 34-41 crores of which Rs 32-44 crores were spent on State-owned Railways. The following statement shows how this outlay of Rs 32-44 crores was distributed between open line works, rolling stock and new lines, similar figures being given for the previous four years and for 1913-14.

Year	OPEN LINES			New lines	GRAND TOTAL.
	including Stores.	Rolling-stock.	TOTAL.		
	Rs crores.	Rs. crores	Rs crores	Rs crores.	Rs crores.
1913-14	9 30	7 31	16-61	1-86	18-47
1923-24	7 69	9 51	17 20	2 51	19-71
	4 66	6 42	11 08	2 39	13 47
1925-26	9 44	5-80	15 21	4 01	19-25
1926-27	16 74	4-13	20-87	6 27	27-14
1927-28	17-21	5-37	22-58	9 86	32 44

* £118,274,695 converted at the rate of £1=Rs. 16, £10,675 at the rate of £1=Rs. 10 and the balance of £2,575,000 representing the G. I. P. Ry. Co.'s share capital paid off during 1926-26, converted at the average rate of exchange

BOMBAY, BARODA & CENTRAL INDIA RAILWAY



Strengthening of Girders of Mahi Bridge

40. The distribution of the capital outlay in 1927-28 over the different State-owned lines is shown in the summary below : —

Railways.	Works, etc	OPEN LINES		New lines	GRAND TOTAL
		Rolling-stock	TOTAL		
	RS crores	Rs. crores	RS crores	Rs crores.	Rs . crores.
Bengal-Nagpur	0.91	0 08	0.99	0 12	1 71
Bombay, Baroda and Central India	1.66	0 97	2.63	0 04	2 67
Eastern Bengal	1.18	0 21	1.42	0 33	1 75
East Indian	2.96	0 83	3 79	1 65	5 41
Great Indian Peninsula	3.99	0 09	4 08	0 15	4 23
Madras and Southern Mahratta	1.41	0.36	1.77	0 72	2 49
North-Western	8 04	1.60	4 61	2 99	7 63
South Indian	0 99	0 44	1.43	1.82	3 25
Other Railways	1.07	0.76	1.83	1.44	3 27
TOTAL	17 21	5.37	22 58	9 .86	32 44

Lines opened and under construction.

41. Lines opened during 1927-28.—69914 miles of railways were opened to public traffic during the year and consisted of :—

224 55 miles on the 5' 6" gauge.

333 20 " " 3 3³/₈

141-39 " " 2 6 "

The details regarding the sections opened are given below •—

Name of line	Gauge	Mileage.	Owner	Working agency	Date of opening
Raiwala -Rikhikesh	5' 6	7-10	State	East Indian Rail- way.	2nd April 1927.
Dalmau-Daryapur (Relaying)	5' 6"	15-00		Do	8th August 1927
Dharmaband Kharkharee with main line conuection	5' 6	0-73		Bengal Nagpur Railway	9th December 1927.
Verka-Dera Baba Nanak	5' 6"	27 80		North-Western Railway	3rd May 1927.
Lyallpur-Jaranwala	5' 6"	22-10		Do	3rd December 1927
Narowal-Jassar	5' 6'	5 74		Do	21st December 1927
New Delhi Capital Works	5' 6"	4 79		Do	December 1927
Jaaear-Chak Amru	5' 6"	26 50		Do.	21st December 1927
Chak Jhumra-Chimot	5' 6"	16 93		Do.	29th January 1928.
Cherabur-Mandala	5' 6"	296		Great Indian Pen- insula Railway	1st July 1927
Angadipuram-Vatuambalam	5' 6"	17 06		South Indian Railway	3rd August 1927
Vaniambalam-Nilambur Bond	5' 6"	6 92		Do.	26th October 1927
Ramgundum Aaifabad Road	5' 6"	35-47	N. G. S.	Nizam's Guar- anteed Railway.	15th October 1927

Name of line	Gauge	Mileage	Owner	Working agency	Date of opening.
Main line near Jalarpur Station	5' 6"	215	State	Madras and Southern Mahratta Railway.	16th August 1927
Sirhind-Rupar	5' 6"	30.53	Patiala Durbar	North Western Railway	16th February 1928.
Barrack pore Race Course Siding	5' 6"	154		Eastern Bengal Railway	27th January 1928.
Nashipur Road-Azimganj	5' 6"	1.23		Do.	31st January 1928.
Virudunagar-Tenkasi	3' 3"	75.90		South Indian Railway	30th June 1927
Faniban to Rameswaram Road (Re-alignment)		6.77		Do	10th September 1927.
Golden Rook-Sarangam	3' 33/8"	5.55		Do	22nd August 1927
Srirangam-Bikshandarkoil	8' 3 1/2"	2.75		Do	12th December 1927.
Bikshandarkoil-Lalgudi	3' 3 1/2"	6.61		Do	10th March 1928.
Villupuram -Vriddhachalam	4' 3 1/2"	34.14	State	Do	1st December 1927
Hotgi-Sholapur	3' 3 3/8"	9.25		Madras and Southern Mahratta Railway	15th May 1927
Kanivihalh-Swannhalli	3' 3 1/2"	10.26		Do.	15th March 1928.
Dinajpur Pirgany	8' 3 1/2"	24.05		Eastern Bengal Railway	15th February 1928.
Simalgnri-Sepon	3' 3 1/2"	26.79		Assam-Bengal Railway	1st July 1927.
Sepon-Khowang	3' 3 1/2"	12.00		Do	10th November 1927.
Thanlwin-Wa-Murtaban	3' 3 1/2"	0.69		Burma Railways	12th October 1927.
Tanngdwingyi-Natluk	3' 3 1/2"	25.00		D O	16th March 1928.
Rajula Road-Rajula	3' 3 1/2"	5.84		Bhavnagar State Railway.	20th June 1927.
Dungar-Port Albert Viotor	3' 3 1/2"	4.80	Bhavnagar State	Do.	15th March 1928
Port Albert Viotor-Dock Estate	3' 3 1/2"	2.86		Do	15th March 1928
Kesrisinghpur-Raimghnagar	3' 3 1/2"	33.98		Bikaner State Railway	1st September 1927
Hanumangarh-Nohar	3' 8 1/2"	45.76	Bikaner State	Do	15th September 1927
Hindubagh-Killa Saifulla	2' 6"	39.42	State	North Western Railway	2nd May 1927
Pandharpur-Miraj	2' 6"	64.92	Barsi Light Railway Company.	Barsi Light Railway	3rd November 1927.
Anjar-Wareamedikandla	2' 6"	15.37	Cutch State	Cutch State Railway	16th November 1927.
Rohtas-Rohtas Fort	2' 6"	168	Dehri Rohtas Light Railway Company.	Dehri-Rohtas Light Railway	1st December 1927.

No lines were quadrupled during the year.

42. The following sections of line were doubled and opened for traffic:—

Name of line	Gauge	Mileage	Working agency	Date of opening
Block Hut (mile 220.2)—Posoita (mile 224 3/4).	5' 6"	4.55	Bengal Nagpur Railway	28th December 1927
Coasye River-Midnapore	5' 6"	133	Do	13th January 1928
(Goilker-Saranda)				25th April 1927
Manharpur-Goilker Doubling	5' 6"	8.94	Do	26th April 1927.
(Mauharpur-Poista)				

No alterations to gauge were made during the year.

43. Lines under construction on 31st March 1928.—At the end of the financial year 1927-28 a total of 3,628-76 miles of new lines was under construction distributed as follows :—

	Miles.
5' 6" Gauge.	1,429 81
3' 3" „	1,820 01
2' 6" „	378-34

During the year under review sanction was accorded to the construction of new lines totalling 1,616-38 miles.

	Miles.
5' 6" Gauge.	69746
3' 31" „	760 11
2' 6" „	158-81

44. The lines under construction are given in the table below which also shows the construction agencies and the progress reached:—

Name of line.	Gauge	Mileage actually under construction.	Working agency	Progress of Work. Proportion completed.
Guttitauaerar Branch .	6"	8-29	Bengal-Nagpur Railway.	30 Works suspnd till 1932.
Raipur Vizianagram (Raipur	5' 6"	241 56		30
Bonavi-Vadtal .	5' 6"	3 71	Bombay, Barwla and Central India Railway.	00
Vasad-Katana	5' 6'	26 27		Construction iccently sanctioned
Barmpur Lakshmikantapm	5' 6"	23 80	Eastern Bengal Railway	75
Abdulpur-Nnwabganj .	6' 6'	55 18		30
Kalukhali.Bhatoapara	5' 6"	63-18		01
Cential India Coalfields	5' C"	168 80	East Indian Rail. Way	87 on Daltonganj Barkakhiua Section 82 on Anupur-Kanmiiti Settion 25 on Jhagrakhund and Chinmri sidings
Calcutta Chord .	6' 6"	10-53		26
Unao-Madhoganj	5' 6"	48 00		.00
Chandpur-Bijror-Muazzampur Narain.	5' 0"	37 08		00
Lucknow-Sultanpur-Jaunpur	6' 6"	142 00		.00
Agia Bah	5' 6"	43 19	Grent Indian Pen-ninla Railway.	05
Khamgaon-Chikli	5' 6	38-50		Construction recently sanc-tioned.
Kartal-Kamamn	5' 6"	59-23	Madias and South-em Mahrattaj Railway.	07
Nidadavoln—Narasapur	5' 6	47-01		70
Cocanada--Kottpalli	5' 6	2703		15
ASifabad Road-Balharshab lection of the Kazipat Ralharshah.	6' 6'	52-44	Nizam's Guaranteed State Railway	*95
Bahawalnagar (Cholistan) Phnlra .	6' 6'	63-08		99 ou Bahawalnagar Faquwali
Rohtak-Panlpat	5' 6"	44-21	North Western Railway.	50 on Faqirwali-Fort Abbas section
Kalabagh Bridge	5' 6"	*42		*80
Dera Baba Nanak-Jassar section of the ArniUar-Narowal.	6' 8"	5 -78		*05 .85

Name of line.	Gauge.	Mileage actually under construction.	Working agency.	Progress of work. Proportion completed.
Chiniot-Khushab	5' 6"	53-99	[North Western Railway.	20 on Chiniot-Hundewali section. 85 on Sargodha-Shahpur City section.
				05 on Shahpur City-Khushab section.
Batala-Buatari	5' 6"	41-64	South Indian Railway	01
Lyallpur-Chananwala	6' 6"	109-62		01
Salem-Mettur Dam	5' 6"	25-32	'Assam-Bengal Railway.	02
Furkating-Badulipara-Jorhat	3' 3½"	42-17		82
Karimganj-Longai Valley	3' 3½"	47-52	Burma Railways	66
Notrakona-Mohanganj	3' 3½"	17-43		42
Shaistaganj-Habiganj.	3' 3½"	8-47	Burma Railways	45
Feni-Belonia	3' 3½"	16-88		Construction recently sanctioned
Bone-hoa-Mairabari	3' 3½"	30-25	Burma Railways	Ditto.
Natmauk-Kyaukpadaung	3' 3½"	47-10		45
Kayan-Thongya Extension	3' 3½"	10-54	Burma Railways	80
Heho-Shwenjaung	3' 3½"	11-16		95
Myingyun-Natogyi-Paleik	8' 3½"	69-49	Burma Railways	60 on Myingyun-Myotha section. 40 on Myotha-Paleik section.
Nyunglebin-Madauk	3' 3½"	11-17		30
Mmbu and Pakkoku Mstrict Railway a.	3' 3½"	311-87	Eastern Bengal Railway.	02 on Taungdwingyi-Patanago section. Const' uction recently sanctioned.
Irrawaddy Bridge at Bagaing	3' 3½"	4-86		03
Dinajpur Ruhea	3' 3½"	23-75	Eastern Bengal Railway.	(-90 upto Pirganj 24 05 miles) opened.
Purnea Murliganj	3' 3½"	53-00		33
Gudhada Bhinnavaram	3' 3½"	40-90	Madras and South. em Mahratra Railway	85
Ourutur-Ourzala-Macberla	3' 3½"	80-44		40
Pronachelam (Dbone) Kurnool Uxte sion.	3' 3½"	4-89	Nizam's Guaranteed fctate Railway.	80
Kurnool Extension of the S G. Railway	3' 3½"	115-0		70 on Allinpxpur Road—British Frontier section.
Pa-bbani-Puili	3' 3½"	39-49	South Indian Rail-	13
Dindignl-Pollachi	3' 3½"	75-49		75
Villu puram -Trichinopoly	3' 3½"	93-61	South Indian Rail-	49-05 miles opened for public traffic.
Madure-Bodinayakanur	3' 3½"	55-19		56
Cuddalore-Vriddhachalam	3' 3½"	34-99	Bombay, Baroda and Central India Railway.	80
Trichinopoly -Manmadura	3' 3½"	94-22		09
Salein-Attur-Vriddhachalam.	8' 3½"	83-00	Bombay, Baroda and Central India Railway.	Construction recently sanctioned.
Vijapur-Ambalasan Extension of Kalol-Vijapur Railway.	3' 3½"	26-76		85
Patan-Kakosbi-Kakhal	3' 3½"	26-13	Bikaner State Railway.	Patan Kakosbi (16 miles) opened. Work on remaining section held in abeyance since 1916.
Vijapur-Ransipur	3' 3½"	14-10		Const' uction deferred since 1922.
Nohar-Sirma section of Hanmsn-garh-Sirma chord	3' 3½"	74-24	Bikaner State Railway.	28 on Nohar-Gogameri section. 21 on Gogameri-Bhadran section.
Sarupsai-Anupgarh section of Canal loop Line	3' 3½"	35-00		05
Halvad-Maliya Extension	3' 3½"	26-00	Bombay, Baroda and Central India Railway.	00

Name of line.	Gauge.	Mileage actually under construction	Working agency	Progress of work Proportion completed.
Sidsar (Paneli Moti) Patan .	8' 3½	7 85	Gondal	Work held in abeyance since 1922.
Marwar-Sanderao	3' 3½	77 83		46 on Marwar Junction to Jujawar. 13 on Jujawar-Dusuri Works stopped since 1921
Phalodi-Pokaran	3' 3½	33 00	Jodhpur	00
Makrana-Parbatsar	8' 3½	13 21		00
Samdari-Bhimtal	8' 3½	75 00		00
Bantwa-Kutiyana	8' 3½	4-17		81. (Bantwa-Kardiya opened) Works on Saradiya-Kutiyana held in abeyance since 1916
Veraval-Una	3' 3½	48.00	Junagad	100 (sections, upto Jamburand Prathi Road opened). 37 on Prathi Road Jam wala station, work deferred since 1926
Shimoga-Arasalu	3' 3½	26.80	Mysore	80. (Works stopped since 1921).
Nanjangud-Mysore Frontier	3' 3½	10 71		Nanjangud-Channarayana Section opened 05 on Nanjangud-Irdianhalli section which has been temporarily closed since 1920
Extension of the Quilon-Trivandrum Railway to Thambanur.	3' 3½	3.43	Princerc	Construction recently sanctioned.
Jambuser-Kavi	2'	17 83	Bombay, Madras and Central India Railway	45
Sammi-Deliay	6	24 72		*to
Dharwa-Pusad .	5' 6"	41 81	Coast Indian Peninsula Railway	00
Kangra valley (Pathankot-Jogindar Nagar)	2' 6"	103 00	North Western Railway.	80
Piplod-Deygad-Bana	2' 6"	9.54	Bareilly	(Construction recently sanctioned)
Zankhvav-Umerpada .	2' 6"	1317	Baloda .	72
Dungarda (Jherria) Wairhai Extension	2' 6"	2 10		15
Anjar-Bachau	2' 6"	20 02	Cutch	03. (Anjar-waisamedi, 373 miles, opened)
Dholpur-Rajkhera	6"	22 34	Dholpur .	16 Construction held in abeyance since 1923
Mohan-Bararli Branch Extension of the Dholpur Bari Railway	2' 6"	3 63		Construction recently sanctioned
Killa Saifullah-Fort Sandeivan Extension of the Zhob Valley Railway.	2' 6"	88 55	North Western Railway	35
Parlakimodi Gunupur Extension .	2' 6"	31 03	Bengal-Nagpur Railway.	45 on Fakimedi-Varanasi 30 on Varanasi Gtimpnr.

46. Lines opened.—During the year under review no line of outstanding importance was opened for traffic but mention may be made of two lines :—

- (1) *Virudinagar-Tenkasi.* -This line was constructed by the S I Railway on the metre gauge. It is about 76 miles in length and provides an alternative route between the places mentioned. It will serve well cultivated and thickly populated parts of the Ramnad and Tinnevely districts in which there are good cotton producing areas. In order to touch the more important trade centres the alignment has had to be located at the expense of some increase in length. A short length of the line lies in Travancore State territory.

- (2) *Pandharpur-Miraj*.—This branch line has been constructed on the 2'—6" gauge by the Barsi light Railway Company and is about 85 miles in length. It will open up the district between Pandharpur and Miraj and besides affording transportation facilities to the ryots in marketing their surplus produce in a district which is badly provided with roads, it will also provide rail connection for pilgrims visiting Pandharpur, the chief pilgrimage centre in the Deccan, for districts served by the M. and S. M. Railway. The district served by the railway has a small average rainfall and scarcity prevails at times, the effects of which can be mitigated by the importation of supplies by rail.

The Hindubagh-Killa Saifullah section of the line between Hindubagh and Fort-Sandeman, the Ramgudam-Asifabad section of the Kazipet-Balharshah and the Villupuram-Vriddhachalam section of the ViUupuram-Trichinopoly Chord Railway were also opened during the year.

46. Lines under construction.—The following is a brief account of some of the more important lines sanctioned or under construction during the year which have not been specially mentioned in previous reports :—

Lyallpur-Chananwala (N. W. Ry.).

The construction of the Lyallpur-Chananwala Railway, on the 5'-5" gauge, was sanctioned in February 1928, and with the Chak Jhumra-Khushab line, described in the report for 1926-27, will provide a cross connection from Kundian to Chananwala which will probably be extended to Bhatmda. The line, which is about 110 miles in length, will connect up the important towns of Sargodha, Chiniot, Lyallpur, Samundri, Tandlianwala, Okara, Dipalpur and Fazilka, and will probably be open for traffic about the middle of 1930.

Lucknow-Sultanpur-Jaunpur (E. 1. Ry.).

The question of constructing a railway between Jaunpur and Lucknow via Sultanpur has been long under consideration. The object of the scheme is to open out the country along the Goomti river between the Oudh and Rohilkhand Railway main and loop lines. The railway will run more or less along the watershed between the Goomti and Sai rivers and will cross a well cultivated fertile tract of country. The construction of the line which is about 142 miles long on the 5'-6" gauge was sanctioned in August 1927 and will take about 2 years to complete.

Unao-Madhoganj (E. I. Ry.).

The construction of a line between Unao and Madhoganj a distance of 48 miles on the 5'-6" gauge was sanctioned in August 1927. The principal object of this line is to open up the tract of country bounded on the west by the Ganges, on the east by the East Indian Railway main line Bareilly to Lucknow and on the south by the Lucknow-Cawnpore Branch. The line may eventually form part of a larger scheme for a through line between Unao and Chandausi *via* Jalalabad and Budaon; but as it was financially sound on its own merits and would not conflict with further developments it was decided to proceed with it independently, especially in view of the fact that the area which the line would traverse would be watered by the Sarda Canal under construction. It is hoped to have the line open for public traffic by the end of 1929.

Abdulpur-Nawabganj (E. B. Ry.).

The construction of this broad gauge line about 57 miles long was sanctioned in October 1927. From the railway point of view the line is very important as it **will** **of** traffic being diverted from the Godagari ferry

BENGAL-NAGPUR RAILWAY



Bird'seye View of Vizagapatam Harbour as proposed to be constructed

to via the Sara bridge with a considerable reduction in working expenses. The line will serve Rampur Boalia or Raj shah i, a district town of considerable local importance. It is expected that the section from Abdulpur to Rampur Boalia 28 miles will be open for traffic early in 1929.

Salem-Vriddhachalam (S.I Ry.).

This railway is the outcome of several proposals, some dating as far back as 1909, for lines to serve the Salem and South Arcot district. The line, which is to be on the metre gauge, will be about 83 miles long and together with the Vriddhaehalam-Cuddalore Railway now under construction, will form a cross feeder connecting Salem Junction on the broad-gauge with Cuddalore on the metre-gauge. It will cross the Villupuram-Trichinopoly Chord at Vriddhachalam, will pass through fairly populous country and busy trade centres, and will afford facilities for the general development of trade besides developing the well irrigated country to be traversed.

Trichinopoly-Manamadura (S. I. Ry.).

The construction of this line, 94.22 miles in length and on the metre gauge, was sanctioned in the year under review. It is one of the lines recommended by Mr. Izat, who was deputed in the year 1921 to investigate the railway requirements of Southern India. The line will traverse a thickly populated country and serve several important towns including Sivaganga in the vicinity of which there are several renowned temples largely attended by pilgrims. It will also afford the relief to the Trichinopoly-Madura section of the South Indian Railway main line, which will be needed when the Villupuram-Trichinopoly line is open.

Salem-Mecheri-Metur Dam-(S. I. Ry.).

This line is required for the transport of stores, machinery and materials for the Dam which the Madras Government are constructing across the Cauvery river at Metur. From Salem to Meeheri the line will be built as a permanent light line on 5'-6" gauge to be guaranteed against loss by the Madras Government, and from Meeheri to the site of the Dam as an assisted siding. The total length is 25.62 miles.

Minbu-Pakokkv Project (Burma Railways)

The construction of this important metre gauge project, 312 miles in length, as part of the Burma Railways system, was sanctioned in December 1927. The main object, for which it is designed, is to open up the Minbu and Pakokku districts on the west of the Irrawaddy, which are seriously lacking in means of communication at present, and to connect them by means of a rail wagon ferry across the river with the Burma Railways on the east. It will consist of a main line from Malun, about 20 miles South of Minbu, to Yesagyo, North of Pakokku, along the west bank of the Irrawaddy, with 3 branches, and a connecting line from Patango, on the East bank of the river, to Taungdwingyi, where a junction will be made with the Pyinmana Kyaukpadaung branch of the Burma Railways; there will be a wagon ferry between Patango and Malun for which the ferry plant now in use at the Sagaing crossing will be available when the bridge there is completed. The work has been started and some progress had been made with the Taungdwingyi-Patango section by the end of the year.

Bridge over the Irrawaddy at Sagaing.

The project to take the main line of the Burma Railways over the Irrawaddy by a bridge at Sagaing was sanctioned during the year. The bridge will take the place of the existing wagon ferry between Amarapura and Sagaing and will obviate the delay to passenger traffic, which at present takes about an hour to *beside* hours delay to goods traffic. The work *has been* *acquired*

and about 150 lakhs cubic feet earthwork has been done in the approaches. Well sinking has been started and arrangements are being **made for** the supply of the steelwork. The work is estimated to cost Rs 155 lakhs.

By arrangement with the local Government, which will contribute towards the cost, the bridge will also accommodate road traffic.

Bridge over the Indus at Kalabagh.

A proposal has been under consideration for some years to build a bridge over the Indus at Kalabagh to take the place of the existing wagon ferry between Mari Ghat and Kalabagh. This work has been sanctioned at an estimated cost of Rs 4276 lakhs. The savings due to the replacement of the ferry are estimated to give a return of 5 per cent, on the capital cost of the bridge.

47. Important new works.—Among the important new works in hand may be mentioned the following :—

Electrification of the Madras Suburban Section—*South Indian Railway*—As a result of the investigations mentioned in last year's report, a scheme for the electrification of the suburban lines of the South Indian Railway from Madras Beach to Tambaram was sanctioned during the year under review at an estimated cost of Rs. 42 lakhs approximately. It is anticipated that the introduction of electric traction on this section will not only enable the railway administration to cope with the normal increase in traffic, but will also considerably encourage the development of suburban passenger traffic in the area.

Madras Hydro-Electric Schemes.—Further examination had to be made of the Madras Hydro-Electric projects and of the schemes for the electrification of the Madura-Trichinopoly and certain other sections of the South Indian Railway for which it is proposed to obtain power from hydro-electric sources, and the question was not yet ripe for settlement at the close of the year under review.

Electrification of suburban lines near Calcutta.—With regard to the Calcutta suburban electrification scheme, it was found necessary in view of the heavy expenditure involved to carry out further investigations both as to the probable development of traffic in the suburban area and the estimated cost of the project, in order to ascertain to what extent the introduction of electric traction on the section would be justified financially.

Vizagapatam Harbour.—Considerable progress was made with the construction of the new Vizagapatam Harbour during the year. The suction dredger, "Vizagapatam", which met with a serious accident last year, arrived back from Calcutta after the necessary repairs about the end of December and started work inside the harbour about a month later. The reclamation work was vigorously pushed on and bunds were constructed round the railway and the manganese wharf area, on the north side of the dock reclamation area and the storage canal. Good progress was made with the sinking of the monoliths of the wharf wall though work was at first somewhat hampered owing to the late delivery of the two loco cranes which had been ordered from England. The provision of a dry dock was sanctioned during the year and a start was made with its construction. The work on the construction of the staff c-arters is now well in hand. The general layout of the railway connections was approved. Certain anti-malarial measures were also carried out in accordance with the advice of the Director of the Central Malaria Organization with the Government of India. A scheme for the administration of the port during the period of the construction of the harbour is at present under consideration by the Government of India.

Training School and hostel near Kot Lakhpat on the 'North-Western Railway—A scheme of Lyallpur Area School, which was to include and expand the existing boarding school was sanctioned by the Railway Board. Subsequently it was decided that a still

bigger scheme should be prepared, making immediate provision for certain courses not originally contemplated and that the hostel should be redesigned. Work on the original scheme was therefore not commenced.

The new scheme necessitated the provision of extra accommodation and a much bigger area of land was therefore required and as land at Lyallpur is very expensive, a suitable and inexpensive plot of Government Forest land near Kot Lakhpat at Lahore has been selected for the location of the new Training School. An estimate amounting to Rs. 8,79,470 for the new scheme was sanctioned shortly after the close of the year, and it is expected that the buildings for the school and hostels will be ready for the session commencing in September 1929. The hostels will provide accommodation for 312 students.

Accommodation for special apprentices for superior services at Jamalpur—For the system of special apprenticeship for the Mechanical Engineer and Transportation (Power) Departments described in paragraph 80 of the Report for 1925-26, it has been decided that the apprentices will be sent for workshop training to Uie damalpur Workshops on the East Indian Railway and an estimate providing hostel accommodation for 36 special class apprentices at a cost of Rs. 2,15,000 was sanctioned in May last.

Jhansi Workshops, (Great Indian Peninsula Railway)—These shops are being remodelled on the lines suggested by the State Railways' Workshops Committee and will provide facilities for both locomotive and carriage and wagon repairs and for an expansion of the Manufacturing Department of the Workshop which is necessary to ensure an adequate supply of spare parts. The scheme involves the transfer from Matunga of certain shops, and allows for the introduction of the initial works connected with the policy of transferring all manufacture work from L'arel to Jhansi.

Jamalpur Workshops, East Indian Railway—The Jamalpur workshops were constructed about 1862 and have from time to time been added to or altered to meet requirements, with the result that the layout is now very inconvenient, while the buildings are cramped and badly lit. The necessity for remodelling the shops in accordance with the recommendations of the Workshops Committee has been accepted, and it is recognised that very extensive additions and alterations will have to be carried out. The preparation of a scheme is in hand.

Tatanagar Workshops, East Indian Railway—The Peninsular Locomotive Company's works at Tatanagar which were purchased by Government are being adapted for the construction of bogie coaching under frames to meet the needs of the State-managed Railways. These works will now be known as the East Indian Railway Tatanagar Workshops.

New Store, Yard at Belur—The Sulkea store yard at Howrah was found to be inadequate for the requirements of the East Indian Railway, as there was no room at the site for expansion. Moreover, more economical and efficient methods for the custody and distribution of the railway's stores could be made if such work was centralised. It was decided to construct a new store yard at Belur, which would deal not only with the Howrah work but also with the Lucknow work. The cost of the scheme is estimated at Rs. 23 lakhs, of which a little over 3 lakhs is for land. It is estimated that an annual saving of about Rs. 1,55,000 in working will result from this move.

48. Open line improvements. The following are the more important open line schemes which were completed during the year :—

Assam Bengal Railway

The ballasting of the Sylhet Branch was completed thus enabling the speed of trains to be increased and the running of an additional passenger train with the existing stock.

At Chandpur where the erosion of the river foreshore threatened the maintenance of the station, it was necessary to undertake short notice work

on a retired alignment so as to make the stone pitching conform to the general direction of the flow of the river. The work of transferring the transhipment point between the Railway and the Steamer Companies from Gauhati to Pandu was commenced during the year and is expected to be completed in July 1928. The transfer to Pandu was necessitated by the silting of the foreshore at Gauhati Ghat which involved a long carry of over 200 yards for all goods interchanged.

Bengal and North-Western Railway

The train control system was introduced on the Hajipur-Sarnastipur-Bachhwara and Samastipur-Sakri sections on and from October 3rd, 1927, and on the Sonapore-Katihar section on and from 16th October, 1927. The total mileage now under control is 569.

The interlocking of Gorakhpur yard and 8 way-side stations between Hajipur and Bachhwara was completed during the year. Forty-one and a quarter lbs. rails were replaced by fifty lbs. rails in passenger loops at certain stations between Sonapore and Burhwal. A transhipment platform and siding was completed at Darbhanga and bridge No. 80 between Riga and Dhang was reconstructed. An overhead bridge and passenger platform were completed at Raxaul.

Bengal Nagpur Railway.

Six yards were remodelled during the year and interlocking or revised interlocking arrangements were provided at eleven stations.

The train control was extended from Palasa to Waltair and the headquarters were removed to Waltair.

Work on replacing understrength girders has made good progress, 20 spans of 60 feet, 20 spans of 20 feet, 40 spans of 12 feet, 5 spans of 6 feet, and 2 spans of 10 feet having been replaced. At the Johilla Bridge on the Katni Branch where the girders were carried away by the floods in August 1926, temporary spans were fabricated by utilising old understrength spans of 60 feet bolted together and were erected in June 1927. These spans were strong enough to permit of wagons being shunted across but were not strong enough for whole trains. The new girders were received in the beginning of the cold weather of 1927-28, and have since been erected on shore. It is expected that the bridge will be complete before the commencement of the 1928 monsoon.

The Nerbudda Bridge on the Satpura Railway, which was wrecked by the same storm which damaged the Johilla bridge, consists of 5 spans of 200 feet and 1 span of 150 feet. All the girders were washed away with the exception of 1 span of 200 feet. Three of the old spans were recovered during the dry season of 1927, and have since been reconconditioned while two new spans have been received. This bridge also is expected to be ready before the 1928 monsoon.

Burma Railways

At Rangoon the passenger platform with shed and stairways was completed and the interlocking, water columns and ash pits will be taken in hand shortly. At Pegu the work on the south end has been completed and the north end will be commenced shortly. The coverings over the platforms at Mandalay, Tounghtha and Pwintmana will be completed in the near future.

Important changes are being made in regard to the Goods terminal arrangements in Rangoon in order to relieve the Goods work at Rangoon Main Station and to allow of Latter Street Station being closed to suit the requirements of the Port Commissioners. A new Station has already been completed at Botataung and another new Station is in hand at Keighly Street which will deal with to and from Stations west of Rangoon.

BENGAL-NAGPUR RAILWAY



Reconstruction of Johilla Bridge (New Span being launched)

Bombay, Baroda and Central India Railway.

The piers of 14 broad gauge bridges were strengthened. Three additional spans of 30' each were provided at Malm river between Bhorteek and Amalner on the Tapti Valley Railway and girders were strengthened on the Broach-Jambusar Railway.

The construction of a new road overbridge at Mahalakshmi station has been practically completed with the exception of the road surfacing, the details and allocation of cost of which are still under discussion with the Bombay Municipality. The remodelling of Ahmedabad and Kankana yards was practically completed with the exception of track circuiting which was in progress. The construction of the new locomotive shops at Dohad is expected to be completed by the end of 1928.

Satisfactory progress in connection with the new Bombay Central station was made during the year, the permanent-way having already been laid in the various yards. The work of providing automatic signalling between Church Gate and Grant Road was in progress.

A new smithy forge, spring and die shop were constructed at Ajmere.

Eastern. Bengal Railway.

The remodelling of Sealdah, phase 1, was completed during the year and phase 2 was in progress.

An extensive programme of improvements to interlocking arrangements was undertaken during the year and the following works were completed.—

Installation of Neale's common battery system of working at all single line stations between Tshiirdi and Siliguri.

Alterations to signals and interlocking arrangements at Ohuadanga, Kankurgachi, Belghuriah and Sealdah South station.

Provision of a new 40-lever cabin at the south end of Barrackpore station.

New features in signalling introduced during the year include a colour light starting signal at Sealdah and three position colour light signal repeaters at Bellaghata South Cabin and Sealdah B Cabin.

To permit of through trains running at booked speeds without restriction, the running roads at 17 stations on the broad gauge have been isolated during the year. At 21 other stations on the broad gauge and 41 stations on the metre gauge isolation is in progress.

Train control was brought into use between Lalmanirhat and Santahar, and between Kaunia and Parbatipur it was installed ready for bringing into use.

The renewal of weak girders on 5 bridges between Calcutta and Dura Dum and on 8 bridges on the Lalmanirhat district was completed during the year. The regirdering of the Cobbadnck bridge was completed and that of the Jaboona and Bhetna bridges was in hand during the year. An existing wooden pile bridge was replaced by a pucca bridge on the Rangiya-Tangla branch. Additional waterways were provided at two bridges one on the Santipur-Krishnagar section and the other on the Sara-Sirajganj Railway.

East Indian Railway.

The overhead bracings of the Bally Khal and Banka Nullah bridges were raised during the year.

Additional facilities on the Gaya-Moghal Sarai section in connection with the doubling of the Grand Chord were completed together with a second down line between Barakar and Asansol. The Raiwala-Rikhikesh Railway was opened during the year and the Dalmau-Daryapur and Sitapur branches were reopened.

The remodelling of the yard at Gaya and the electric installation at the same place were finished. Lucknow Yard was remodelled and a new loco-

motive shed constructed at Rosa. The new paint shop, Lucknow carriager and wagon shops, was completed and the locomotive shops at Lucknow were nearing completion. Divisional offices at Asansol and Dinapore were under construction and the Dinapore Electricity Supply was partially finished.

Other works in hand include additions and alterations to the yard at Bandel, remodelling the yards at Burdwan, Baidyanath Dham, Ondal, Moghal Sarai, Moradabad and Ajodhya, additions to Dhanbad marshalling yard and remodelling of Asansol station building and Moradabad Locomotive Shed. The regirdering of the down track of Lower Sone Bridge and strengthening of the down track of Upper Sone Bridge were also in progress.

Great Indian Peninsula Railway

Dudlu bridge was reconstructed and the widening of the local lines on the Mumbra bridge was completed. Light bridges were reconstructed or rebuilt and the replacement of the Nerbudda bridge on a new alignment consequent on being washed away by high floods in September 1926 was in hand. The remodelling and provision of a new main line station building at Victoria Terminus was in progress.

The Knrla-Trombay line was taken over from the Bombay Development Department and after being extended from Ohembur to Mandala was opened for traffic on June 1st, 1927.

The Central Salsette Tramway, 4' 8" gauge, was also taken over from* the Bombay Development Department and opened for passenger traffic on January 9th, 1928.

Jodhpur Railway

The remodelling of Lum yard is approaching completion, and considerable progress was made in the remodelling of Degana yard. The programme of extending the station yards at Nagaur, Alai, Khajwana and Marwar Mundwa was completed. The transshipment yard at Mirpur Khas was completed and the marshalling yard was practically finished.

The tram control system has been installed between Kuchaman Road and Luni Junction from July 1st, 1927, and between Khokhropar and Hyderabad (Sind) from 1st October 1927. The section from Luni Junction to Khokhropar will be completed in 1928-29.

Madras and South pen Mahratta Railway

The remodelling of the Perambur Workshops has made good progress.

Good progress has been made on the Tondiarpet Salt Depot and it is expected to be ready for the Salt Department in January 1929, after which work will proceed on the Tondiarpet marshalling yard.

An overbridge was sanctioned in July 1927, to eliminate the objectionable Elephant Gate level crossing. The pile foundations for the bridge over the railway have been completed.

The remodelling of Arkonam and Londa was completed while the remodelling of OL Jalarpet and Guntakal was nearing completion. The train control system has been established on the following sections and is now working satisfactorily.—

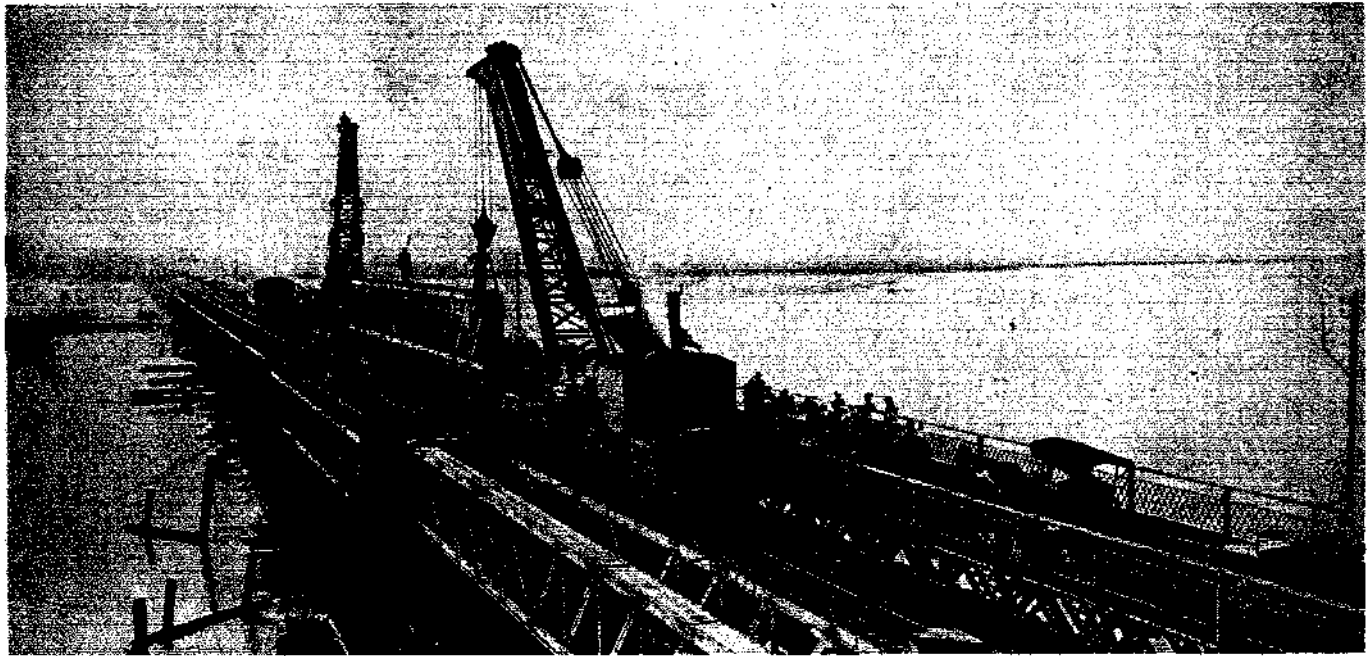
Bezwaada to Waltair.

Madras to Bangalore

Arkonam to Raichur

This completes the Broad Gauge section. The work of installing train control on the Belgaum-Londa, Castle Rock-Gadag, Gadag-Guntakal, and Guntakal-Bezwaada sections of the Metre Gauge is nearing completion and* is expected to be brought into use shortly.

NORTH-WESTERN RAILWAY



Regirdering of Jhelum Bridge

His Exalted Highness the Nizam's Guaranteed State Railways

The roofing of the metre gauge main line passenger platform, Secunderabad, was completed. Tanks to conserve water used for washing out engines at Lallaguda were constructed and good progress was made in; the construction of a church for railway employees at Lallaguda. Several works, under the sewerage system were completed during the year. Work was continued on the remodelling of the workshops at Lallaguda. The conversion of the old fitting shop into a machine shop was completed. Good progress was made in equipping the locomotive shops with electric power.

North Western Railway

New station buildings or pucca buildings in place of temporary buildings were constructed at 7 stations. Additions and alterations to station buildings were carried out at Peshawar City for defence purposes and at Wazirabad, Sialkot, Jullundur City and Jhang Maghiana. The remodelling of the following stations and goods yards were completed —

Kotn Yard, Tarki Station, Peshawar Cantonment Locomotive Yard, and Lahore Transit Yard

Additions and alterations to station yards were carried out at 23 stations, and running lines were isolated at 13 stations

A road overbridge was completed at Peshawar and foot overbridges at Karachi Cantonment, Tando Adam, Kotn and Rohri and one is in hand at Lahore near Victoria Road.

The reconstruction of the Alexandra Bridge over the Chenab at Wazirabad was completed in June 1927. The road overbridge and foot overbridge at Rawalpindi were replaced with larger spans in connection with the remodelling of the yard and the three track railway bridge was replaced with a new bridge carrying four tracks. The Jail Road overbridge has been completed at Peshawar and the [Pakpattan](#) Canal Bridge on the Suttle Valley Railway. Good progress has also been made on the Attock Bridge, Adam Wahan Bridge, Jhelum Bridge, Ferozpur Weir, Ghaggar Bridge and the Lower Hakra Bridge. The last two are on the Ambala-Kalka section.

A large programme of signalling and interlocking improvements was carried out during the year. Train control telephones have been installed on the Multan-Lyallpur, Multan-Khanpur, Delhi-Jhind, and Jhind-Bhatinda sections. Single line token instruments have been installed on the Saharanpur-Ghaziabad, Golra-Kohat, Raewind-Montgomery, Montgomery Khanewal, Shahdara-Lalamusa and Raewind-Bhatinda sections.

The progress of electric installations has been satisfactory. Works involving railway-owned generating plants were completed at Ferozpur, Rhatinda, and Peshawar and were in hand at Ambala, Amritsar, Khanewal and Kalka. Installations obtaining energy from local supply companies were completed at Hyderabad, Shikarpur, and Karachi Cantonment, and were in hand at Sukkur, Rohri, Badamibagh, Chaklala, and Shahdara. The electrical installation in Delhi station and yard was completely remodelled, and the existing steam plant is in process of being replaced by the provision of power in bulk from the Delhi Electric Supply Company.

A new record was established this year with track renewals exceeding even the notable figure of last year. All second hand released rails were transferred to new branch lines under construction. No less than 348 miles of rails were renewed and 737 miles of sleepers. In addition 105 miles of sleepers were replaced by second hand sleepers as casual renewals.

South Indian Railway.

The reconstruction of the Feroke and Kallayi bridges on the broad gauge was completed during the year and the bridges were opened to traffic on June 8th, and October 21st 1927. The Tambarparni bridge on the metre gauge was opened to traffic on May 20th, 1927.

258 quarters for subordinates and menials were constructed during the year. The work of remodelling Trichinopoly Junction proceeded but progress was necessarily slow as it was necessary to keep traffic moving, while the work was going on.

Good progress was made with the Erode Branch conversion.

In the Central Workshops and Town scheme the work in the Carriage body shop and Foundry shop, Scantling shed, Machine shop, Underframe shop and Sawmill has been completed, and the buildings handed over to the Mechanical Department. The work in the Engineer's shop, Forge and Smithy shop is well in hand.

CHAPTER IV.

TRANSPORTATION AND WORKING.

49. Statistics of working.—It has been explained in previous reports that on account of the vast size of a railway's business it is difficult to make it readily intelligible unless the operations are reduced to comprehensible terms by means of statistics. Moreover in addition to presenting a record of the work done statistics are being increasingly used as an indication of the direction in which improvements may be needed and as a check on the efficiency of working.

Business handled.—In a review of a year's working the first point to notice is the business handled or total output. The best method of expressing this is by the terms "net ton miles" for goods traffic and "passenger miles" for passenger traffic, which mean the total number of tons or passengers carried multiplied by the distance over which they are moved. The figures for Class I Railways which carry 97 per cent of the total traffic of Indian Railways are given in the table below and show an increase of 7·5 per cent, in net ton miles and 6·7 per cent, in passenger miles over 1926-27 —

	CLASS I—RAILWAYS, AM- GAUGES (IV THOUSANDS)			
	1925-26.	1926-27	1927-28.	Percentage increase or decrease compared with 1926-27.
Net ton miles	10,661,723	20,108,214	21,620,094	
Passenger miles	19,512,534	19,603,413	20,908,343	+ 6·7

Service Performed.—The medium used by railways for handling their business consists of trains, and the measure of the service performed is expressed by the number of train miles. Full details of train and engine miles of Class I Railways will be found in Statement No 17 of Vol. II and that of Class II and III Railways in Statement No 37. The following table shows the passenger and goods train miles for the last three years and shows that there was an increase in passenger train miles of 6 { per cent in the broad gauge and 6·2 per cent on the metre gauge. The increase in goods train miles was 5·1 per cent, on the broad gauge and 3·2 per cent on the metre gauge.

	CLASS I - RAILWAYS, BROAD GAUGE (IN THOUSANDS).				CLASS I—RAILWAYS, Metre Gauge (IN THOUSANDS)			
	1925-26	1926-27.	1927-28.	Percentage of variations with 1926-27	1925-26	1926-27	1927-28.	Percentage of variations with 1926-27
Passenger train miles	51,787	56,211	59,893	+ 6·6	16,650	16,452	17,467	+ 6·2
Goods train miles	40,888	10,594	12,679	5·1	11,310	14,600	15,067	+ 3·2

Shunting engine miles.—Apart from train engine miles many thousands of other engine miles are run, such as shunting, light, assisting and departmental, which not being directly concerned with the hauling of trains are termed unproductive miles. Of this mileage the largest portion consists of shunting engine miles and it behoves all railway administrations to maintain a constant watch on this mileage by means of statistics and to endeavour to keep the proportion of shunting miles to train miles to the lowest possible

dimension. That railways are fully alive to the importance of this matter is borne out by the following figures:—

	BROAD GAUGE.				METRE GAUGE			
	1926-26.	1926-27	1927-28.	Percentage of variations with 1926-27.	1925-26.	1926-27.	1927-28.	Percentage of variations with 1926-27.
Shunting miles per 100 train miles (Pawenger and proportion of mixed)		5.62	5.25	-6.58	5.85	5.04	5.49	-2.66
Shunting miles per 100 twin miles (Goods and proportion of mixed).	40.6	39.7	38.0	-4.26	32.2	31.8	32.4	-1.89

Goods trains—The average through speed of goods trains, which is the average speed of a train from start to finish of its run inclusive of stops *en route*, slightly improved from 9.8 to 9.9 miles per hour on the broad gauge and from 9.3 to 9.5 on the metre gauge. The average net load of a goods train advanced from 381 to 390 tons on the broad gauge and from 157 to 164 tons on the metre gauge. As a result of these improvements in speed and load the final index of goods train working, net ton miles per engine hour, shows an increase from 1,613 to 1,665 net ton miles on the broad gauge and from 733 to 759 on the metre gauge.

Engines.—The work done by engines is expressed by the figure engine miles per engine per day. Based on the number of engines on the line this figure shows an increase on the broad gauge from 60.4 to 66.1 and on the metre gauge from 65.4 to 69.2. Based on the number of engines in use, the number of engine miles per engine per day has risen on the broad gauge and metre gauge alike from 99 to 102. At the same time the percentage of engines under or awaiting repairs has again decreased from 21.9 to 20.6 on the broad gauge and from 19.0 to 17.7 on the metre gauge. This means that 1.3 per cent more engines were available for use both on the broad gauge and on the metre gauge, the equivalent of 80 broad gauge engines and 34 metre gauge engines.

Wagons.—The amount of work got out of the available wagon stock is expressed either in the average number of miles run per wagon per day, both loaded and empty wagons being taken into account, or in the average number of net ton miles performed by a wagon per day. As an empty wagon performs no net ton miles the latter figure is an index of the work done by loaded wagons only. The following table shows these two results for 1927-28 compared with the previous year:—

	WAGON MILES PER WAGON DAY.		NET TON MILES PER WAGON DAY.	
	1926-27.	1927-28.	1926-27	1927-28.
Broad Gauge	331	34.8	292.7	311.2
Metre Gauge	30.5	31.5	145.6	156.0

The average percentage of unserviceable wagons to the total number of goods wagons also shows an improvement from 5.78 to 5.46 per cent or .32 per cent, on the **broad gauge** and from 6.41 to 4.06 or 2.35 per cent, on the **metre gauge**, the equivalent of 489 broad gauge wagons and 1,490 metre gauge wagons.

NORTH-WESTERN RAILWAY



Kalka-Simla Train approaching the 59th Mile Post

Passenger vehicles — Similar figures with regard to repairs of passenger vehicles show a decrease from **134** to 114 per cent, on the broad gauge and from 111 to 9.9 per cent, on the metre gauge. On the same basis as adopted for engines this represents a saving of 201 broad gauge carriages and 89 metre gauge carriages.

50. Turning to individual railways the principal features of the year's working are as follows :—

Bengal Nagpur Railway.

The wagon user figures of net ton miles per wagon day and wagon miles per wagon day increased from 281 to 304 and from 274 to 29.7 respectively.

The shunting miles per 100 train miles (Goods) improved from **501** in 1925-26 and 47.9 in 1926-27 to 45.3 in the year under review.

The oil consumption on vehicles shows a sustained improvement mainly due to efforts by the Watch and Ward Department for checking pilferage. The figures are:—

	Pint of oil consumed per 100 vehicle miles (Passenger and Goods)
1925-26.	3.50
1926-27.	2.71
1927-28.	1.88

Eastern Bengal Railway.

The most noteworthy feature is the reduction in the period of detention in shops of engines and vehicles for repairs :—

	BROAD GAUGE		METRE GAUGE	
	1926-27	1927-28.	1926-27	1927-28.
Average number of days engines were in shops for heavy repairs.	101	68	102	74
Average number of days vehicles were in shops —				
Passenger carriages	60	30	42	22
Other coaching vehicles	59	32	49	26
Wagons	25	7	36	7

Mention was made in last year's report of the special efforts **being made** by the use of "servis" recorders and marshalling yard statistics to cut down shunting. A further improvement was effected this year, the shunting miles per **100** train miles broad gauge (Goods) now standing at 85 as against **1121** in **1924-25**.

A marked improvement is noticeable in the figures of engine usage:—

	1925-26.	1926-27	1927-28.
Engine miles per day per engine in use Broad Gauge	89.9	93.4	96.6
Ditto ditto Metre Gauge	82.1	87.5	96.9

The wagon user figures similarly show an improvement.

	BROAD GAUGE.		METRE GAUGE.	
	1926-27.	1927-28.	1926-27.	1927-28.
	155.4	169.3	105.1	107.9
	217	23.0	24.9	26.0

East Indian Railway.

The engine miles per day per engine in use improved from 93.6 to 98.6 and the engine miles per day per engine on the line from 66.8 to 69.8. The net ton miles per wagon day increased from 329 to 338 and the average goods train load in tons from 434 to 446. The gross ton miles per engine hour advanced from 4,145 to 4,430.

Great Indian Peninsula Railway.

The net ton miles per wagon day improved from 372 to 417 and the wagon miles per wagon day from 44.7 to 48.3. The average goods train load in tons went up from 802 to 825.

An improvement was also effected in the use made of coaching vehicles. The figures being :—

Year.	Vehicle miles per vehicle day.
1924-25	182
1926-26	191
1926-27	210
1927-28.	280

North Western Railway.

With a further reduction in the number of engines on the line by the elimination of obsolete types and with the decrease in the average number of engines under repairs which fell from 25.7 to 23.9 per cent, there has been a further substantial improvement in the engine usage figures as follows:—

—	1925-26	1926-27	1927-28.
Engine miles per day per engine in use	90.3	97.1	101.0
Engine miles per day per engine on the line	48.9	65.8	64.7

The shunting engine miles per 100 train miles (passenger) improved from 7.3 to 5.96.

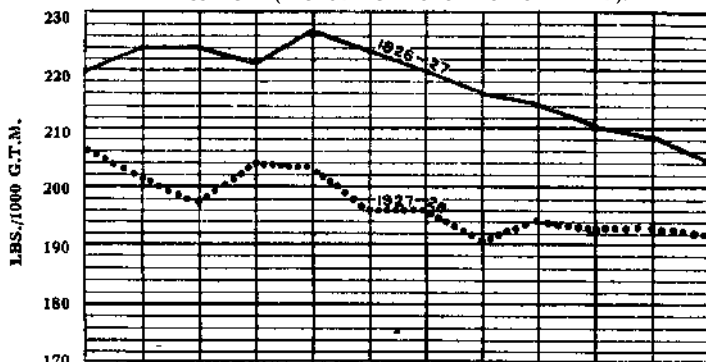
South Indian Railway.

The percentage of engines under or awaiting repair on the broad gauge shows a reduction from 19.0 to 17.3. Similar figures of coaching stock show an improvement from 10.7 to 10.3 on the broad gauge and from 10.9 to 9.4 on the metre gauge. The best improvement, however, is in the percentage of unserviceable wagons which show! a most satisfactory **decline on the broad**

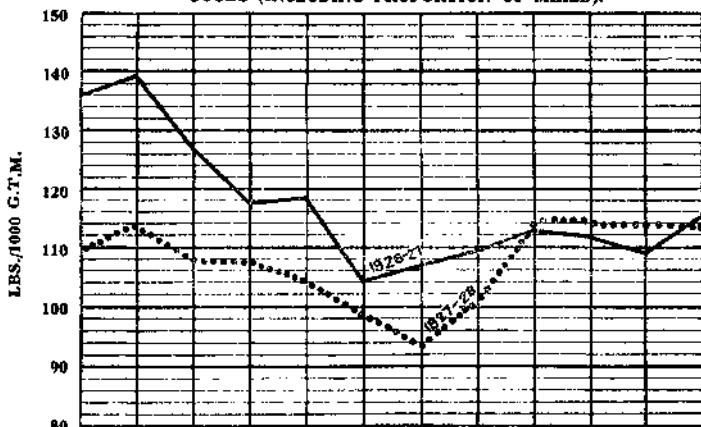
FUEL ECONOMY GRAPHS.

(BROAD GAUGE)

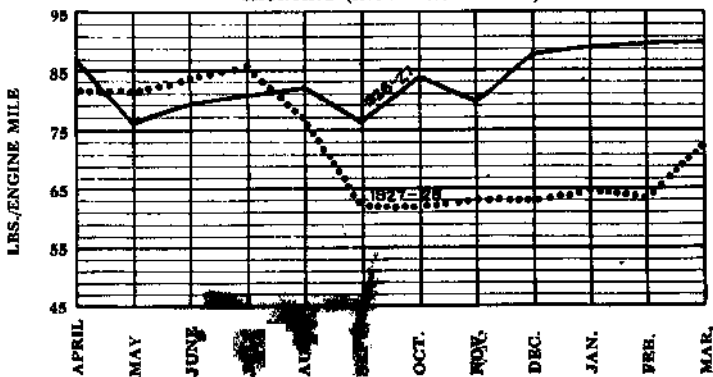
GREAT INDIAN PENINSULA RAILWAY.
PASSENGER (INCLUDING PROPORTION OF MIXED).



EASTERN BENGAL RAILWAY.
GOODS (INCLUDING PROPORTION OF MIXED).



NORTH WESTERN RAILWAY.
SHUNTING (INCLUDING SIDINGS).



gauge while on the metre gauge also the percentage is lower than in the preceding year. The following are the figures.—

Yenr.	Broad Gauge.	Metre Gauge
1926-27.	8-57	12-44
1927-28.	4 64	1158

The engine miles per day per engine in use continued to show an improvement both on the broad gauge from 93 to 9G and on the metre gauge from 95 to 100

51. Fuel economy.—The 1926-27 report contained a reference to progress made in the conservation of locomotive fuel, and experience has shown that the developments forecasted have materialised and that still further economies may be expected in future.

Since then a standing committee has been appointed consisting of the Technical Member of the Railway Board, the Director of Mechanical Engineering and the Director of Traffic. This Committee with the Fuel Officers of the State-managed Railways meets every six months and submits its recommendations to the Railway Board. These recommendations, together with the Board's orders thereon, are circulated to all Railways for information and guidance.

The success of these efforts to conserve locomotive fuel may best be judged from the graphs reproduced on the opposite page which illustrate some of the results obtained on different services by various State-managed Railways

52. Running of passenger trains.—Steady improvement continues to be made in the punctual running of passenger trains on the broad gauge. Of the total number of trains run in January 1928 (mail, passenger, suburban and mixed) over 90 per cent arrived right time or less than ten minutes late. The improvement over the figures for February 1927 is due to the proportion of right time arrivals having increased from 73.6 per cent, to 77.8 per cent. The metre gauge results were not quite so good as in the previous year except for mail and important through trains which show a slight improvement.

	ALL TRAINS.			PERCENTAGE OF TRAINS ARRIVING RIGHT TIME OR LESS THAN 10 MINUTES LATE			
	Percentage of trains arriving right time to number of trains run	Percentage of trains arriving 10 minutes late to number of trains run	Percentage arriving right time or less than 10 minutes late to number of trains run (Column 2 + Column 3).	Mail and important through trains	Mixed trains	Suburban trains	Other Passenger trains.
1		3	4	5		7	
<i>Broad Gauge.</i>							
February 1927	73.6	15.4	89.0	77.9	81.4	97.5	81.7
January 1928	77.8	12.5	90.3	80.6	87.1	96.9	87.3
<i>Metre Gauge.</i>							
February 1927	68.2	13.4	81.6	72.2	77.1	93.8	89.1
January 1928	65.6	12.1	77.7	72.6	75.7	87.5	75.7

The heavy programmes of renewals of permanent way and improvement schemes make it by no means an easy matter to keep trains to time but every effort is made to foresee the effect of such works and allow sufficient time in the time tables without lowering the average speed. It is therefore inter-

esting to compare the average through speed (miles per hour) of passenger trains:—

Year.	Train miles per train engine hour.	
	Broad Gauge.	Metre Gauge.
1925-26.	19.5	16.1
1926-27.	19.9	16.2
1927-28.	20.1	16.3

68. Bombay Electric Services.—The electrification of the Local and Suburban Sections of both railways which serve Bombay has been practically completed.

Bombay, Baroda and Central India Railway.

The section Colaba to Borivli (23 miles) on the Bombay, Baroda and Central India Railway was opened for a regular passenger service on 5th January 1928 by His Excellency the Governor of Bombay. A total of 120 electric coaches were received in India during the year of which 15 four coach train units had been put into service up to 31st March 1928 and one train unit was on trial running. These trains ran 171,269 unit train miles during the year. The training of motormen made good progress, 34 locomotive drivers and firemen being passed out and certified as competent. The overhead equipment and rail return circuit for electric traction service between Mahim Junction and Bandra was maintained throughout the year in good working order. Power on this section for all Great Indian Peninsula Railway trains running between the junction and Bandra was supplied from the Bombay, Baroda and Central India Railway sub-station at Bandra from 21st December 1927.

Great Indian Peninsula Railway.

No new sections were opened during the year, the sections worked being Victoria Terminus to Thana *vid* Main line and to Kurla and Bandra *vid* Harbour Branch. As a result of three more 4 car units being put into traffic an increase in the electric train service was effected from 1st September 1927. There were no breakdowns in the sub-stations and no failures on the 22,000 volt feeders. A certain amount of trouble has been experienced with gear wheels and pinions and traction motor armatures but otherwise the operation has been generally satisfactory, the difficulties which have occurred being such as must be expected in service and as are usual in electric traction equipment operating under similar conditions. Further improvements in the maintenance of the equipment should result when the new car shed at Kurla is completed and the repairs and inspection of equipment can be carried out under the improved conditions which will be available in the new shed.

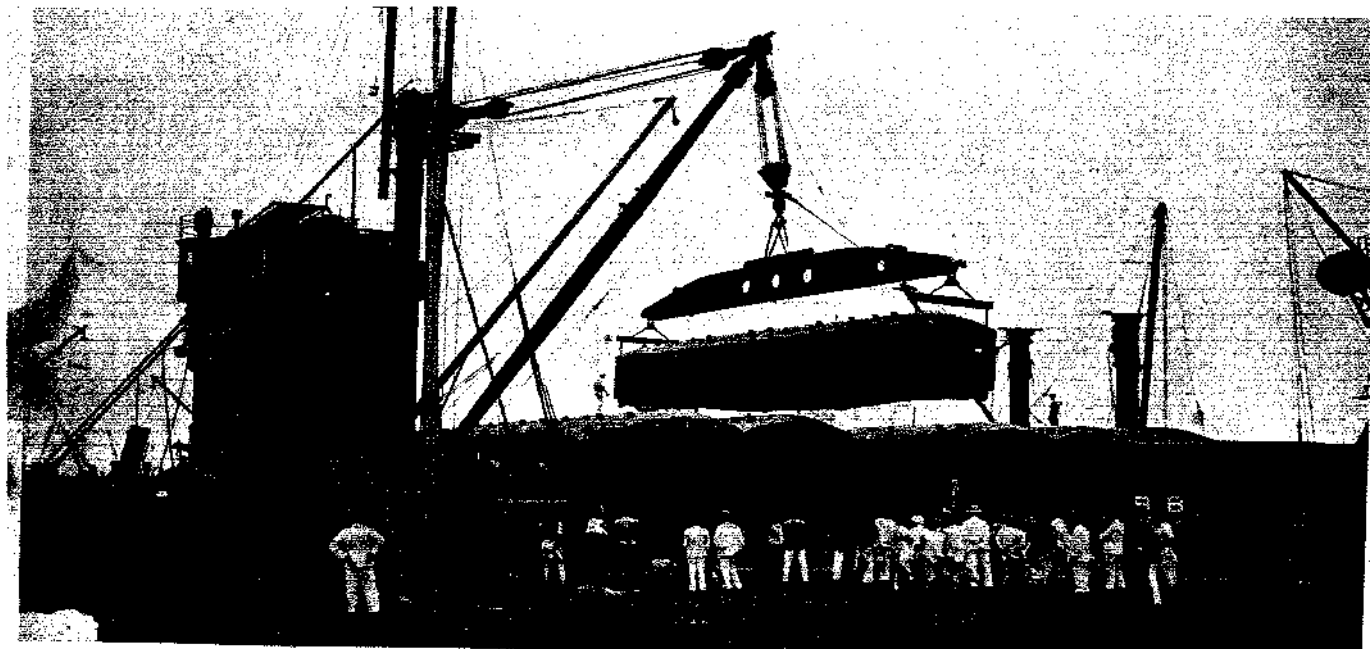
The following statement shows the traffic carried by Great Indian Peninsula Railway electric trains and the earnings therefrom for the last 3 years:—

Year.	No. of passengers.	Earnings. Rs.
1925-26.	4,844,244	3,17,755
1926-27.	16,220,076	13,10,889
1927-28.	27,360,690	21,26,667

It should however be borne in mind that the electrified area differed in each year as follows:—

3rd February 1925	The through electric route was opened between Victoria Terminus and Kurla <i>vid</i> Harbour Branch.
3rd February 1926	The electric service was opened to Bandra.
21 st June 1926	The electric service was opened to Thana <i>vid</i> Harbour Branch.
1st November 1926	"The electric service was opened to Thana <i>vid</i> Main line.

BOMBAY, BARODA & CENTRAL INDIA RAILWAY



The Off Loading of Coaching Stock at Alexandra Docks

64. Road Motor Competition.—The position regarding road motor competition has not materially changed since it was described in last year's report, although reports from many parts of the country show that, where roads short circuit or run parallel to railway lines, encroachment on short distance railway passenger traffic is steadily increasing. The following is a brief account of the position on different railways :—

Assam Bengal Railway.

Except in the tea gardens districts road motors are not seriously competing with passenger traffic. In the tea districts, however, the planters practically only use the railway for long distance journeys preferring to use their motor cars for short distances even if the roads are bad. On this account short distance upper class passenger traffic has fallen off.

In other parts of the system motor cars and buses have actually helped the passenger traffic of the railway by carrying people to the stations.

Bengal Nagpur Railway.

Motor bus services have set up an appreciable competition for passenger traffic on certain sections of the line, particularly on the sections Midnapur-Garbeta, Vishnupur-Bankura, Purulia-Thulin, Chaibasa-Chakardharpur, Nagpur-Khapa and Nagpur-Umrer and Mandla Fort-Jubbulpore. Vigorous efforts, which met with a considerable amount of success, were made to counteract this competition by the introduction of more suitable train services and by utilising Sentinel-Cammell coaches. On the Purulia-Thulin and Nagpur-Khapa sections, the introduction of Sentinel-Cammell coach services resulted in the bus services being stopped. On the Nagpur-Umrer section the introduction of special third class two-day return tickets at reduced fares between these points in conjunction with the use of a Sentinel-Cammell coach has had the effect of increasing the earnings and attracting more passengers to the Railway.

Bombay, Baroda and Central India Railway.

The following sections have been severely hit by this competition.—

Broach-Jambusar Railway.

Nadiad Kapadvanj Railway.

In certain cases the railway has been able to regain the traffic by providing additional train services, but generally speaking the most effective means of doing so appear to be the employment of light and economical power units. The requirements of such units for the broad and narrow gauges have now been estimated and the needs of the metre gauge are under examination.

Burma Railways.

The decrease of 7,720 first class suburban passengers compared with 1926-27 is said to be due to the cheapness of motor cars and motor cycles. The steady decrease in third class suburban traffic, amounting to a drop of 391,590 passengers in 1927-28, is due to the strong competition of trams and motor buses. The number of buses is said to be increasing rapidly.

Darjeeling Himalayan Railway.*

It is estimated that this Railway, which has been especially hit by motor competition on the road running parallel to the Railway, has lost about half of its upper class passengers and 25 per cent of its third class traffic, or a loss in earnings of between Rs. 300 to Rs. 500.

Eastern Bengal Railway.

Motor buses and motor lorries run in connection with this Railway on the following sections :—

Motor Buses—

Budge Budge-Calcutta.
Dacca-Narayanganj.
Mirshidabad-Beldanga.
Purnea Court-Kishanganj.
Phultala-Khulna.

Motor Lorries—

Mogra Hat-Calcutta.

On the Budge Budge-Calcutta and Dacca-Narayanganj sections, which have suffered the most, the loss is estimated at Rs. 3,000 and Rs. 4,500 per mensem respectively. To counteract the effect of the motor bus competition additional trains have been arranged on the following sections:—

Calcutta-Budge Budge	2 trains each way.
Phultala-Khulna	1 train
Dumraon-Kishanganj	4 trains
Narayanganj-Dacca	3 trains
Kishanganj-Katildih	1 train
Calcutta-Uaiyakhali	2 trains

The steps taken to counteract the effects of the motor bus competition on the Dacca-Narayanganj section have proved beneficial inasmuch as, prior to the introduction of Sentinel trains, the earnings from single tickets averaged Rs. 9,116 per month for six months and subsequent to the introduction of the Sentinel trains the earnings averaged Rs. 10,645 per month for a similar period. So far as Calcutta suburbs are concerned the only real and effective solution of the problem appears to be the electrification of the Calcutta suburban railways.

Two Sentinel trains, one broad gauge and one metre gauge, consisting of one Sentinel tractor and three third class four wheeled carriages were introduced last year as an experimental measure. These trains have not proved suitable owing to the tractor not being powerful enough to take any additional coaches. It is considered that a light tank engine capable of hauling 8 or 9 four wheeler vehicles is the type that would meet requirements. This type of engine would admit of an experimental train being run with a load varying from one to eight or nine vehicles and as soon as the traffic is sufficiently developed it could be replaced by a regular train.

East Indian Railway

Competition with road motor transport companies was keenest on the following sections of the line:—

Section of Line	Mileage affected. Miles.
Howrah-Bally	6
Bally-Serampore	7
Dhanidih-Katrasgark-Phularitand-Jamuniatand	16
Dhanbad-Jheria-Pathardihi	10
Moradabad-Gajraula-Chandpur-Siau	56
Moradabad-Raja-ka-Sahaspur-Sambhal-Hatin Sarai	30
Balamau-Auhadpur	31
Cawnpore-Lucknow	46
Hardwar-Rikhikesh	15

In the Calcutta suburban though motor buses continue to attract a large number of passengers no marked increase in the number of

passengers carried by them. An arrangement has been made with the Calcutta Tramways Company by which rail-cum-bus monthly tickets are issued as a means of competing with the road motor services.

The Katrasgarh-Phularitand rail omnibus service which commenced running from 1st December 1926 was extended to Dhanbad from 1st August 1927 and from Phularitand to Jamuhiatand from the 12th December 1927. A similar service was inaugurated on the Dhanbad-Jherriah-Pathardihi section from 1st August 1927. The figures indicate that satisfactory progress is being made in attracting passengers to the rail route.

Competition from motor buses between Lucknow and Cawnpore has scarcely had any effect on the railway earnings, a state of affairs which is attributable to the week end and return fares in force on the railway. Intensive motor competition is being encountered on the Hardwar-Rikhikesh line. On completion of the necessary stock it is intended to put rail buses in service on this section.

Great Indian Peninsula Railway.

The competition with road motors is confined with one exception to short distance traffic. The exception is with traffic between Nasik and Poona. In this case the rail route is circuitous, being 170 miles against the road route of 130 miles. There are indications that the bus services competing against the railway over moderate distances have gained ground. The measures taken to meet the competition are to improve the services and to introduce competitive fares.

On the narrow gauge there has been keen competition by bus services especially in the area served by the Central Provinces Railways and the earnings have been seriously affected. The roads in the area are good and in some cases short circuit the railway. The introduction of road services has created a demand for more frequent and conveniently timed services than have been provided in the past and the matter has been taken in hand by improving the train services and charging competitive fares.

Madras and Southern Mahratta Railway.

The effect of road motor competition continues to be felt more particularly in the neighbourhood of Madras on the Bezwada-Masulipatam section and on the section between Belgaum and Poona. Until the advent of motor competition, places on the coast such as Karwar and Vengurla were served by the railway line running down the Ghats to Mormugao, whence the journey was completed by sea. Motor buses now afford a more direct route and a quicker service than can be given by the combined rail and sea routes.

His Majesty's Highness the Nizam's Guaranteed State Railways.

This railway states that road motor vehicles are not competing with the long distance trains, but the suburban services are feeling the competition of motor buses. Additional facilities are being provided for the suburban traffic.

North Western Railway.

Severe competition from road motor buses is reported on sections where metalled roads run parallel to the railway. To counteract the effects of this competition special attention has been given to the question of augmenting passenger train services. 52 additional passenger trains and 48 short distance shuttle services have been put on during the year and timings of trains have been improved.

The number of passengers carried during the year fell by 900,000 as compared with the previous year. Passenger earnings, however, were maintained practically at the same level in spite of the reduction in numbers carried, the reason being that the average train travelled shows an increase in each class.

Rohilkund and Kumaon Railway.

Keen competition still exists on the Bareilly-Kathgodam road, where the number of buses working has greatly increased though it is certain that not more than 25 per cent, pay their way. Motoring from considerable distances to the Kumaon hill stations is becoming increasingly popular and it is possible to compete with this traffic as the motor cars are brought up for use in the hills.

South Indian Railway.

First class traffic shows a progressive decline both in numbers and in earnings due to the more extended use of motor cars by private owners. The effect of motor bus competition is also being felt by the South Indian Railway in common with other railways and although every effort is being made to regain the traffic by running rail motors and introducing additional train services the result has not been entirely effective. The sections of the line that have been more or less severely hit by competition of motor buses are the Quilon-Trivandrum section of the Travancore Railway, the Tinnevely-Tiruchendur Railway, the Pondicherry Railway, and the Coonoor-Ootacamund section of the Nilgiri Railway, not to mention various small sections of the main line. The position is being carefully watched and all that is possible is being done to combat the competition. At the same time in other places the development of motor traffic has assisted the railway in that motor buses are running as feeders to the railway.

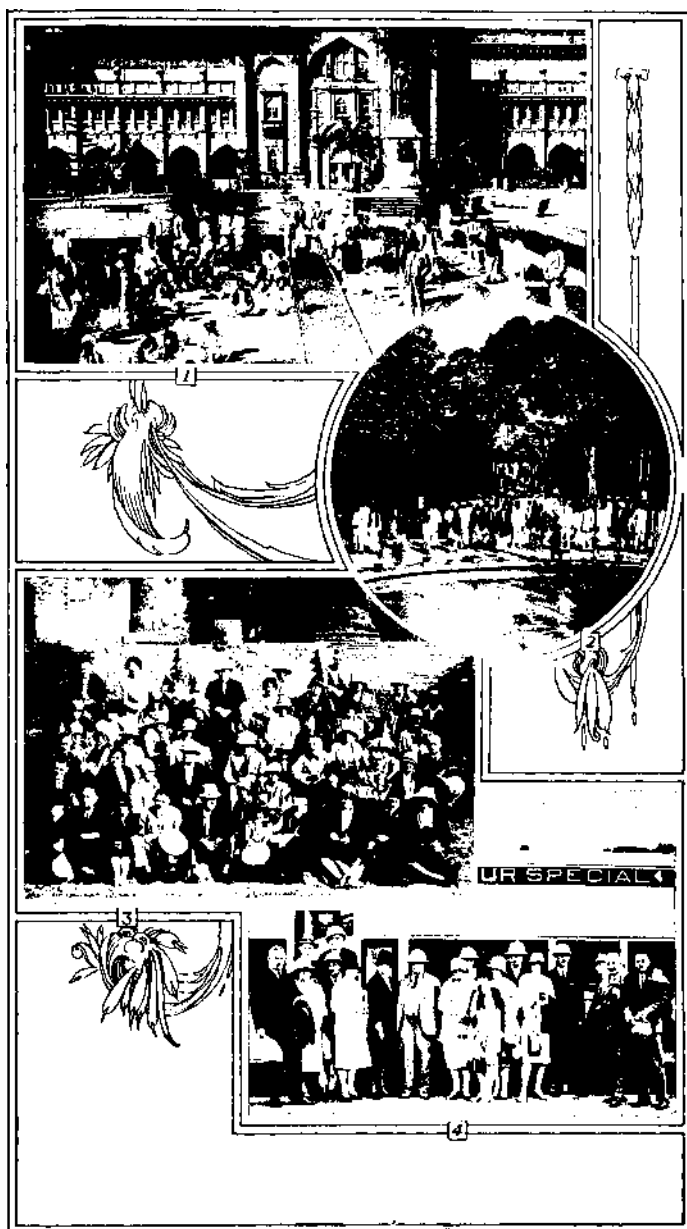
55. Imperial Indian Mail, Punjab Limited and P. & O. Express.—

In last year's report it was mentioned that a new standard of travel in India was instituted in November 1926 by a weekly service between Bombay and Calcutta in connection with the English Mail steamers. The Imperial Indian Mail, as the train is called, is a joint service of the East Indian and Great Indian Peninsula Railways. The popularity of the train has been firmly established, and during the seasonal months the accommodation has been filled to capacity. The special features of this train are the provision of a parlour car, a compartment for luggage wanted on journey, bedding, the services of an experienced conductor and staff and high class catering. The train is vested throughout, giving passengers access to all parts without the necessity of waiting for station halts. Accommodation is provided for 32 passengers, in 14 two-berth and 4 single-berth compartments. Seven of the two-berth compartments have two lower berths and the remainder a lower and an upper berth. The additional floor space in the latter compartments enables two easy chairs to be provided. The exterior of the Imperial Indian Mail is finished in cream and gold, and the service as a whole compares favourably with the finest luxury train service provided by any railway in the world.

The great success of this train has naturally led to the introduction of similar services between Bombay and the north of India *vid* Delhi, and from October 7th, 1927, a special train called "The Punjab Limited" was inaugurated by the Great Indian Peninsula Railway for the benefit of overseas passengers travelling between Bombay and the Punjab. The train accommodates 48 passengers, each compartment having 3 berths, two lower and one upper, with an upper shelf for luggage. A cane easy chair and carpets are provided in each compartment. The services of a train conductor are placed at the disposal of passengers, and bedding, blankets and pillows are provided at a cost of Rs. 5 per journey. The Punjab Limited is painted cream with gold lettering, and a special feature of the service lies in the accelerated timings. The journey from Bombay to Delhi is accomplished in 27 hours 15 minutes. The latest type of dining car, with special fittings such as bracket table lamps with silk shades, etc., is attached to this service.

From the same date the Bombay, Baroda and Central India Railway introduced, in conjunction with the North Western Railway, a new weekly train for first class long distance passengers and mails between Bombay and

EXCURSION PARTIES ON RAILWAYS



1. In front of the Prince of Wales Museum Bombay (G.I.P.R.)
2. In the Victoria Gardens, Bomba
3. A Party at Lucknow (E.I.R.)
4. A J oup in Front of the Tour S

Peshawar connecting with the outward mail steamers at Ballard Pier. This train reduced the time of the journey to Delhi and the Punjab as under :—

—	Previous time	New tunc.	Difference.
	Hrs. Mts.	Hrs. Mts.	Hrs. Mts.
Delhi	27-50	28-50	4 00
Lahoie	39 5	32-0	7-5
Peshawar	51.55	42-35	9-20

With the close of the outward season, second class and local (1st and 2nd class) passengers were also carried on this train. The performance of this train has been uniformly excellent and has been freely commented on by the Press both in India and in England. On two occasions, when the mail steamer has been late, the run between Bombay and Delhi has been performed in 21 hours, or at an average speed of 41 miles per hour for the 865 miles. The running of this train has given a delivery of the English mails a day earlier in Delhi and in most places in the Punjab. From 1st September 1928 a new train, " The Frontier Mail ", will run daily from Bombay to Peshawar to approximately the same timings

56. Lower Class Tourist Cars.—During the year under review the question of providing additional facilities for the special convenience of pilgrim and marriage parties has been engaging the attention of railways in India. The South Indian Railway has, as an experiment, provided a third class metre gauge tourist car for the purpose. This car provides accommodation to seat 56 and sleep 28 passengers and is provided with a kitchen, dining room, separate baths and lavatories for men and women. The East Indian Railway have two broad gauge cars under construction and the North Western Railway will have a similar one available for traffic next year.

57. Kumbh Mela, 1927.—This exceptionally large mela in the spring of 1927 occurs once in 12 years at Hardwar and, although there are melas every year and a large mela half way between each Kumbh mela, yet the number of pilgrims visiting Hardwar at any of these melas does not approach the number attending the Kumbh mela. The total number of inward and outward passengers carried by rail between March 12th and April 21st 1927 was 356,473 and 335,728 respectively which necessitated the running of 143 inward and 206 outward special trains. Hardwar is situated on a branch line and both the branch and the adjoining main lines are single track. The normal traffic to and from Hardwar can be quite easily carried on a single line and the expenditure which would be incurred in doubling the track merely for the Kumbh Mela traffic once in 12 years would not be justified. To ensure that there should be no hitch in the running of such a large number of trains on a single line section very careful preparations were made by the East Indian Railway beforehand, such as, the installation of train control at Hardwar, the building of extra mela platforms and other facilities at Hardwar, the increase of facilities, such as extra crossing stations on the sections Hardwar-Lhaksar and Lhaksar-Saharanpore, careful selection of staff and the issue of detailed instructions to all the staff concerned. The traffic was worked by means of the " Flow " system under which trains run in one direction only for certain definite periods during the 24 hours. The 24 hours were divided into four periods, 7 to 11 hours, 11 to 15 hours, 15 to 23 hours, and 23 to 7 hours. Specials were despatched from Hardwar one after the other from 7 to 11 hours and again from 15 to 23 hours, while empty trains were worked in from 11 to 15 hours and from 23 to 7 hours.

All necessary steps were taken in conjunction with the Civil authorities to prevent overcrowding and to secure the ~~convenience~~ ^{convenience} of passengers by

the appointment of additional supervising and other staff, medical and sanitary arrangements, drinking water, refreshment and waiting rooms and other measures. It is specially worthy of note that no goods wagons were used during the whole period for the carriage of passengers. The public press were unanimous in praising the railway arrangements. Many of the pilgrims thanked the officials on the spot, while important bodies like the Chief Khalsa Diwan passed resolutions placing on record their appreciation of the facilities provided by the Railway.

58. Working of the Wagon Pool.—The broad gauge wagon pool continued to function satisfactorily during the year under review. The busy season commenced earlier than usual, and from the beginning of December demands for wagons were heavy. During the period from 1st December 1927 to 31st May 1928 about 2,382,376 wagons were loaded, or an increase of about 193,564 wagons over the corresponding period of the previous year.

Some difficulty was experienced during the winter in meeting demands for open wagons on the Bengal Nagpur Railway. The demands for this type of wagon have increased very considerably of late owing to the development of mechanical loading in the coalfields for which covered wagons are unsuitable. Up to the present time railways have been permitted to equalize at junctions of interchange with any type of wagon, but it will probably be necessary in the future to maintain a separate control over open and covered wagons to ensure a fair distribution of the former.

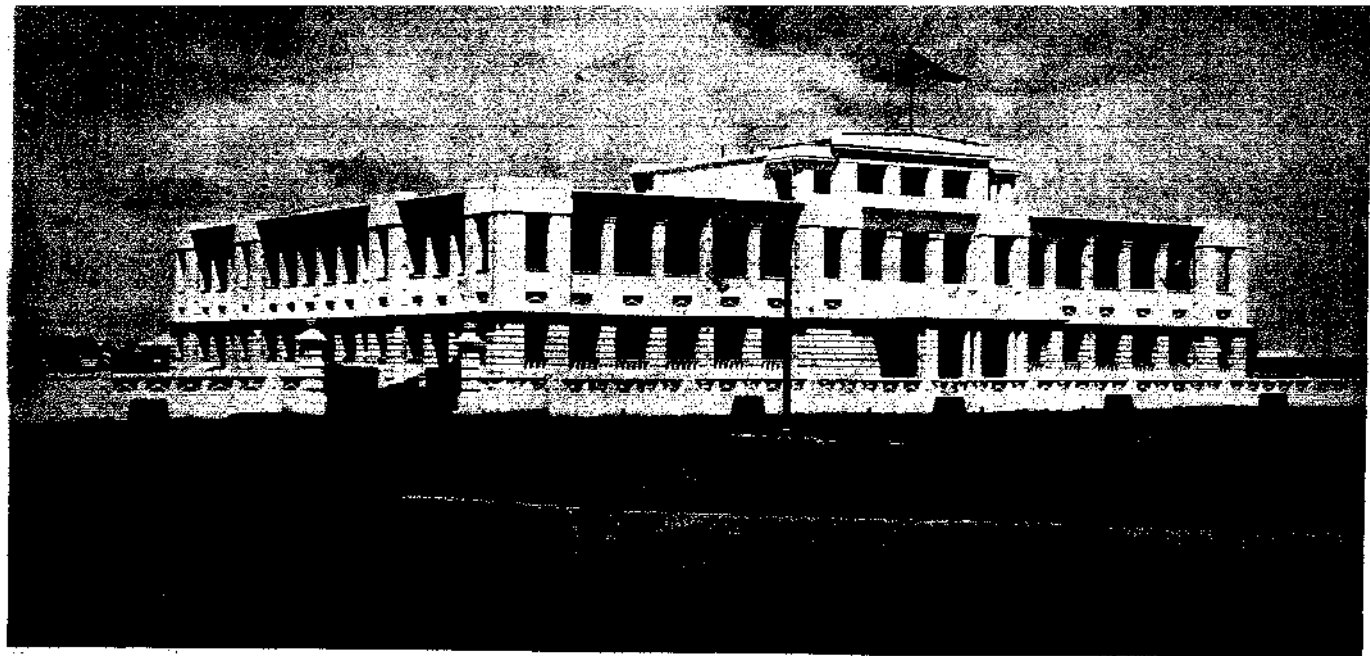
In the report for 1926-27 reference was made to the method adopted for the division of hire charges. Under this method, a railway paid hire only on such debit balance as was incurred to meet its traffic requirements, and this hire was divided among other railways which at the time had no debit balance, in proportion to the stock they owned. This arrangement worked well enough so long as the supply of wagons was in excess of the demand, but has not proved equitable when the demand for stock approximates to the total stock available. In the latter case it has been found that certain railways receive a larger credit for hire than they are entitled to, although they may not be in a position to lend more wagons if called on to do so. To remove this anomaly, the Operating Committee for Interchange decided that from the 1st January 1928 the amount of hire available should be divided among railways to whom credit was due in proportion to their credits. It has not been easy to find an equitable method of dividing hire charges when the supply of wagons is in excess of the demand, and the existing arrangement may therefore be considered as tentative.

The system of neutral control of wagon examination at junctions under the Director of Wagon Interchange was continued at the stations at which it was in force in 1926-27, but was not extended, as proposals for alterations and modifications of the scheme were under consideration. A further decrease has taken place in the average debit per wagon interchanged as the following table shows :—

Nine months ending March 1927.			Nine months ending March 1928.		
No of wagons interchanged	Total of bills for damages and deficiencies.	Average debit per wagon.	No of wagons interchanged.	Total of bills for damages and deficiencies.	Average debit per wagon.
5, 57,062	KB. 41,04,014-	Rs 7.4	5,77,288	14,12,139	2.4

This reduction is partly due to a revision of the rules for train examiners, under which wagons which were formerly accepted and charged for are now rejected, and partly to a general improvement of the condition of wagon stock.

MADRAS & SOUTHERN MAHRATTA RAILWAY



New Loco Office at Perambur

With effect from November 1st, 1927, the offices of Director of Wagon Interchange and Secretary, Indian Railway Conference Association, were amalgamated under one officer designated General Secretary.

59. Coal Department.—In 1927 the coal mined in British India amounted to 21,108,976 tons against 20,093,024 tons in 1926 or an increase of 1,015,952 tons.

The total quantity of coal carried from the main Coal-fields in India by Railways was as follows :—

	Tons.
Umaria	55,702
Singareni	341,398
Pencil Valley	605,913
Bengal, Behar and Orissa Coal-fields	21,003,387

TOTAL 21,90G,460

Of this amount the East Indian and Bengal Nagpur Railways despatched 21,670,145 tons—the East Indian Railway 14,279,284 tons and the Bengal Nagpur Railway 7,390,861 tons.

Including bunker coal, shipments from the Port of Calcutta to Indian and Foreign Ports during 1927-28 amounted to 3,412,957 tons, of which 584,570 tons was on account of Indian Railways and 208,363 tons for Ceylon Railways or a total of 792,933 tons as compared with 414,246 tons in 1926-27.

The State Railway's Coal Department inspected 5,498,539 tons of coal during 1927-28 as compared with 6,578,378 tons in 1926-27.

Railway Collieries.—The total output from the principal railway-owned collieries was as follows compared with the previous year —

Name of rollierv.	Owned by	Total output in tons.		Distribution in 1927-28 (in tons).								Sales and consumption at Collicy
		1926-27	1927-28	E. I. B.	B. N.	R. E.	B. E.	G. I	P. R.	N. W.	R.	
Bokbaro Bain-garh.	E. I. & B. N.	652,068	989,727	482,817	486,387							20,573
Kuhurbareo and Serampore.	E. I.	755,319	777 260	460,121								315,389
Bhmkmida	State .	8,048	89,543							39,548		
Kargah	State .	678,514	886,686	139,300		149,568		590,710				6,108
Sawang .	E. I. & B. N.	56,427	112,900	96,603	4,130							11,767

Kargali.—(a) *Central Power Station.*—The trouble with the Stokers is not yet over and the matter is in the hands of the Consulting Engineers. The East Indian and Bengal Nagpur Railway's Joint Bokharo Colliery started taking current during the year. The Joint Jarangdih Colliery is also taking current.

(b) *Colliery.*—The working of this Colliery has been very satisfactory. The whole of the broad gauge line in the quarry was re-aligned twice during the year without any loss of output. The Electric Pumps were in use during the monsoon and the Steam Pumps were dispensed with. The raising and despatching of coal from the shaft working was commenced in November and both electric winding engines are now in use. This Colliery may now be said to be completely electrified.

Mohpani.—The Colliery was finally closed down during the year and the property made over to the Civil Authorities .

Bhurkunda.—Development work underground is proceeding satisfactorily. The Colliery commenced despatches to the North Western Railway from June 1927.

The Power House has been completed and by the end of the year it is hoped that all Steam Engines and Pumps will have been dispensed with.

60. Revised General Rules for working Open lines of Railways.—In 1925 a Committee was appointed to examine and recommend necessary modifications in the General Rules for working open lines of Railways in India. The draft revised rules drawn up by the Committee were then circulated to Railways for remarks and criticisms. On receipt of these Lt.-Col. C. J. Clarke, Senior Government Inspector of Railways, was placed on special duty to consider the suggestions of the various Railways and the recommendations of the Committee. The redrafted rules were then considered by the Railway Board and the revised rules were issued in December 1927 with a view, to bringing them into force with effect from the 1st January 1929.

GREAT INDIAN PENINSULA RAILWAY



Goods Electric Locomotive

CHAPTER V.

ROLLING STOCK AND MATERIALS.

61. Additions to equipment.—The equipment and the net additions to equipment of Indian Railways during 1927-28, are tabulated in summaries Nos. VIII and IX in Volume II of this Report. The details for individual lines will be found in statements Nos. 10,11,33 and 34.

During the year the following rolling stock, including arrears brought forward from previous years, was on order for broad and metre gauge railways respectively —

Item.	Broad gauge.	Metre gauge.
Locomotives	172	174
Coaching stock	2,415	1,163
Goods stock	2,770	4,391

ine by the end of the

were as follows:—

Item.	Broad gauge.	Metre gauge.
Locomotives	54	64
Coaching stock	1,399	695
Goods stock	2,467	3,671

The numbers of coaching and goods stock are stated in terms of four wheeler units, a bogie being reckoned as two four-wheelers. These figures shown as placed on the line in the course of the year, do not, however, represent the actual net additions to rolling stock as they include also stock built in replacement of existing engines and vehicles which had reached the end of their useful life.

For instance, no broad gauge Locomotives were obtained as additions and the number of broad gauge locomotives at the end of the year was 290 less than at the beginning so that 344 were scrapped during the year, 54 of them being replaced with new ones. On the metre gauge, 24 out of the 64 new locomotives were additions, the rest being replacements. The policy of replacing older engines of low tractive effort by modern engines of higher tractive effort was continued and the average tractive effort per engine rose in the course of the year from 21,717 lbs to 22,422 lbs on the broad gauge and from 12,530 lbs. to 12,919 lbs. on the metre gauge.

for some years it has been the practice of the Railway Board to judge demands for additional or more powerful locomotives, submitted by Railways, by statistics and formulae specially devised for this purpose. Moreover, certain railways have already introduced methods by which it is hoped successfully to utilise locomotive power more intensively than has been possible in the past, in order to reduce the number of engines required and this subject was brought specially to the notice of Agents in March 1928.* A Committee appointed by the Indian Railway Conference Association also has this subject under consideration and it is hoped that their report will be submitted towards the end of 1928. If these proposals materialise and their large scale adoption proves practicable, large economies in outlay on locomotives and plant required for their maintenance will be made possible

Coaching vehicles—1,474 units of old type broad gauge carriages were replaced during the year by modern vehicles of higher capacity, with the result that 2,219 intermediate class seats and 23,154 third class seats were added to the broad gauge seating accommodation during the year. On the metre gauge there was an increase of 497 seats in the 1st and 2nd class, 356 in the Inter class and 13,407 in the 3rd class

pattern vehicles for a Broad Gauge standard steel-bodied 4-wheel Motor Van are also being arranged by the Consulting Engineers.

64. Electric Headlights for locomotives.—Out of a total of 3,352 locomotives working mail, passenger and mixed trains, 2,785 had been equipped with headlights at the end of March 1928. The Railway Board are now considering the advisability of making the provision of electric headlights compulsory on all train engines.

65. Supply of Rails and Fishplates from indigenous sources.—A new contract for the supply of the State and Company managed railways requirements of rails and fishplates for a period of seven years was entered into with Messrs The Tata Iron and Steel Company. The requirements for the year for which orders were accepted by the Company amounted to 182,389 tons of rails and 6,425 tons of fishplates. At the end of the year the quantities supplied amounted to 169,258 tons of rails and 6,418 tons of fishplates, leaving an undelivered balance of 13,131 tons of rails and 7 tons of fishplates. The balance was carried over into the year 1928-29.

66. Development of the use of Indigenous Timbers for Sleepers and Carriage Building.—Investigations have been continued, with the collaboration of the staff of the Forest Research Institute, Dehra Dun, into the possibilities of the increased use of various indigenous timbers for sleepers and for coach building. Much useful work has been done and more can be done but some years must elapse before definite conclusions can be obtained as to the suitability of all the various species now being tried out.

Five lacs of Himalayan coniferous sleepers, chiefly chir (*Pinus Longifolia*), were treated during the year in the North-Western Railway sleeper treating plant at Dhilwan in the Punjab. This plant plays a very important part in the sleeper supply of Northern India and has had considerable influence in regulating the price of deodar sleepers. An incising machine for use with fir and spruce sleepers has been obtained. It is expected that the use of this machine will result in the utilization of a larger number of fir and spruce sleepers of which a large supply is available in the Himalayas. Another creosoting plant was under erection during the year at Naharkatiya in Assam. This plant will treat Assam hard woods and is expected to begin work during the cold weather of 1928-29. The Mysore Government have also erected a plant at Bhadravati to treat local hard woods with wood tar creosote. The erection of a plant for the treatment of sal half round sleepers and other hard woods at a station in Orissa on the Bengal Nagpur Bail Iway has recently been sanctioned by the Board. Investigations are also being made for the establishment of a powellizing plant to treat local species on the West Coast in South India.

The Railway Board have sanctioned the erection by the East Indian Railway of a kiln-seasoning plant of the Sturtevant type with an annual capacity of 3,000 tons of converted timber at Lillooah. This plant will be used for kiln-seasoning miscellaneous timbers from India, Burma, and the Andamans, selected by the Forest Economist, Forest Research Institute. The kiln-seasoned timber will be distributed among the four State Railways for carriage building and repair work, and in this way much valuable knowledge will be obtained in the Carriage and Wagon Works of the State Railways concerning the suitability of these timbers.

Meanwhile trials of small lots of some of the more common indigenous timbers for carriage building were continued at the Carriage Shops of many Railways and results are being carefully watched. The timbers selected were :—

- from Burma, Tavoy wood,
- from the Andamans, Pyinma, and
- from India, C. P. teak.

The former was seasoned in the Forest Department kilns at Rangoon and the two latter by the Forest Research Institute at Dehra Dun. A selection was made of mixed Andaman timbers and mixed Burmese timbers for two further coaches to be built during 1928-29. This selection was made when

Wagons.—It was explained in last year's report that the question of wagon requirements had been carefully reviewed by the Railway Board in 1926-27, in the light of improved methods of working and organisation, aided by the large sums of money which had been made available in recent years. As a result of this examination the conclusion was arrived at that none of the broad gauge systems would require any additional general service wagons in 1927-28, nor probably in 1928-29, so far as could be foreseen, and further that on most broad gauge railways it would be possible to scrap without replacement a number of old general service wagons of obsolete types, which otherwise would have been renewed. The effect of this policy has been that 4,569 wagons were scrapped during 1927-28, 2,467 of them only being replaced. There was thus a net reduction of 2,102 in the number of broad gauge wagons during the year although at the same time due to replacement of certain old types of vehicles by vehicles of larger capacity there has been a slight increase in the total tonnage capacity of 1,008 tons.

On the metre gauge 1,767 wagons were added during the year representing an increase in capacity of 24,555 tons.

62. Standardization of Locomotives.—Out of the 8 new types of Broad and Metre Gauge locomotives referred to in last year's Report* and included in the original trial orders, XB and XD types (Broad Gauge) and YD types (Metre Gauge) were placed in service during the latter part of the year. The preliminary trials of each of these three types gave every satisfaction. The designs for the remaining five types were completed, and trial locomotives of four types are expected to arrive in India during the first six months of the year 1928-29.

The Locomotives Standards Committee met twice during the year and decided upon three further types of locomotives, including

1 Broad Gauge, 4 cylindereed, 28 ton axle load, goods locomotive,

1 Broad Gauge, small tank locomotive, intended for short distance passenger service,

and 1 Metre Gauge small tank locomotive for similar service.

At the close of the year, 8 Broad Gauge, 4 Metre Gauge and 1 Narrow Gauge standard types of locomotives were on order.

63. Standardization of Rolling Stock.—Progress has also been made with the design of the Indian Railway Standard Broad and Metre Gauge wagons and Coaching underframes during the year.

Pattern Broad Gauge wagons of three types and pattern 68' 0" Broad Gauge coaching underframes were received. The designs for other types are well advanced and pattern vehicles of all the Broad and Metre Gauge. Standard types originally proposed are expected to arrive in India during the next twelve months.

Three further types of Broad Gauge wagons, a Broad Gauge four-wheeled coaching underframe and one Metre Gauge wagon were decided upon during the year and orders were placed for the necessary pattern vehicles for these types together with pattern vehicles for the original 2' 6" gauge standard types.

Designs for standard Broad Gauge lower class coaching bodies of the following type's were finally approved during the year under review :—

Bogie I I I Class.

„ Inter and I I I .

„ Full Inter.

„ I I I Luggage and Brake.

Designs for standard Broad Gauge bodies for Horsebox, Motor Van, Goods Brake Van and a Metre Gauge Goods Brake Van were under preparation in India at the close of the year. The design and construction of

* NOTE —

Broad Gauge Standard locomotive types XB, XD, XC, XE and XA.

Metre Gauge Standard locomotive types YD, YB and YC.

pattern vehicles for a Broad Gauge standard steel-bodied 4-wheel Motor Van are also being arranged by the Consulting Engineers.

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65. Supply of Rails and Fishplates from indigenous sources.—A new contract for the supply of the State and Company managed railways requirements of rails and fishplates for a period of seven years was entered into with Messrs. The Tata Iron and Steel Company. The requirements for the year for which orders were accepted by the Company amounted to 182,389 tons of rails and 6,425 tons of fishplates. At the end of the year the quantities supplied amounted to 169,258 tons of rails and 6,418 tons of fishplates, leaving an undelivered balance of 13,131 tons of rails and 7 tons of fishplates. The balance was carried over into the year 1928-29.

66. Development of the use of Indigenous Timbers for Sleepers and Carriage Building.—Investigations have been continued, with the collaboration of the staff of the Forest Research Institute, Dehra Dun, into the possibilities of the increased use of various indigenous timbers for sleepers and for coach building. Much useful work has been done and more can be done but some years must elapse before definite conclusions can be obtained as to the suitability of all the various species now being tried out.

Five lacs of Himalayan coniferous sleepers, chiefly chir (*Pinus Longifolia*), were treated during the year in the North-Western Railway sleeper treating plant at Dhilwan in the Punjab. This plant plays a very important part in the sleeper supply of Northern India and has had considerable influence in regulating the price of deodar sleepers. An incising machine for use with fir and spruce sleepers has been obtained. It is expected that the use of this machine will result in the utilization of a larger number of fir and spruce sleepers of which a large supply is available in the Himalayas. Another creosoting plant was under erection during the year at Naharkatiya in Assam. This plant will treat Assam hard woods and is expected to begin work during the cold weather of 1928-29. The Mysore Government have also erected a plant at Bhadravati to treat local hard woods with wood tar creosote. The erection of a plant for the treatment of sal half round sleepers and other hard woods at a station in Orissa on the Bengal Nagpur Rail Railway has recently been sanctioned by the Board. Investigations are also being made for the establishment of a powellizing plant to treat local species on the West Coast in South India.

The Railway Board have sanctioned the erection by the East Indian Railway of a kiln-seasoning plant of the Sturtevant type with an annual capacity of 3,000 tons of converted timber at Lillooah. This plant will be used for kiln-seasoning miscellaneous timbers from India, Burma, and the Andamans, selected by the Forest Economist, Forest Research Institute. The kiln-seasoned timber will be distributed among the four State Railways for carriage building and repair work, and in this way much valuable knowledge will be obtained in the Carriage and Wagon Works of the State Railways concerning the suitability of these timbers.

Meanwhile trials of small lots of some of the more common indigenous timbers for carriage building were continued at the Carriage Shops of many Railways and results are being carefully watched. The timbers selected were —

- from Burma, Tavoy wood,
- from the Andamans, Pyinma, and
- from India, C. P. teak.

The former was seasoned in the Forest Department kilns at Rangoon and the two latter by the Forest Research Institute at Dehra Dun. A selection was made of mixed Andaman timbers and mixed Burmese timbers for two further coaches to be built during 1928-29. This selection was made when

the members of the Mechanical Section of the Indian Railway Conference Association met at Dehra Dun in February 1927 and were given the opportunity of seeing over the Forest Research Institute and becoming better acquainted with the work being carried on there.

07. Sleeper Pool Committee—The Sleeper Pool Committee, with the Director, Civil Engineering, Railway Board, as Chairman, and the Timber Advisory Officer to the Railway Board as Secretary, held its annual meeting at Simla in July 1927. The working of the Pool, and the various Groups it comprises, was considered to have been satisfactory. The total numbers of sleepers purchased and distributed were 2,856,523 Broad Gauge, 1,514,813 Metre Gauge and 176,105 Narrow Gauge. The only wooden sleepers imported during the year, to meet special unforeseen demands, were 51,223 Broad Gauge Jarrah sleepers for the Eastern Bengal Railway and 40,417 Metre Gauge Jarrah sleepers for the Assam Bengal Railway. A meeting between the Committee of the Eastern Sleeper Group and representatives of the Governments of Bengal, Madras, Burma, Assam, the Central Provinces, Bihar and Orissa and other States concerned was held at Calcutta in January 1928, to make arrangements for the future supply of, and to fix prices for, sleepers in this area. No definite decision was obtained and the matter is now under the consideration of the Governments concerned and the Railway Board.

68. Stores Standardization Committee.—In Chapter I of this Report reference has been made to the steps which have been taken to reorganise the Stores Department of the State-worked railways and to the appointment of a Stores Standardization Committee. This Committee consists of the Technical Member of the Board and the Controllers of Stores of the four State-worked railways. It held its first meeting in January 1928, when the standard specifications for various classes of iron, steel, and non-ferrous metals, for oils, paints, and lubricants were taken into consideration. It is intended that the Committee shall meet quarterly and that the proceedings of these meetings with the orders of the Board on their recommendations shall be communicated to all railways periodically.

69. Value of railway materials purchased—The value of stores purchased by Indian Railways in 1927-28 shows a large increase from Rs. 28.03 crores to Rs. 35.87 crores. The principal increases were under Permanent Way (377 lakhs), Rolling Stock (244 lakhs), Electric plant (80 lakhs), Building and Station materials and Fencing (33 lakhs), Tools and Stores (25 lakhs) and Bridge work (15 lakhs). The value of indigenous material fell slightly from Rs. 15.49 crores to 15.16 crores inspite of an increase in permanent way of 21 lakhs, in Tools and Stores of 8 lakhs, and under Building and Station materials and Fencing of 8 lakhs. The fall was due to a decrease of 34 lakhs under the head 'Rolling Stock' and 31 lakhs under 'Other Materials'.

VALUR OF IMPORTED MATERIALS.

Heading	Purchased direct.	Purchased through Agents in India.	Total imported materials.	Value of indigenous materials.	Total purchases 1927-28.	Total purchases 1926-27.
	Rs. crores.	Rs. crores.	Bs. crores.	Rs. crores.	Rs. crores.	Rs. crores.
Rolling-stock.	5.76	0.98	6.74	0.49	7.23	4.79
tools and stores	0.99	2.98	3.97	3.94	7.91	7.66
Pennam-Mit-way	4.42	0.87	4.79	5.61	10.40	6.68
Electric plant	1.48	0.91	2.86	0.02	2.38	1.68
Building and station materials and fencing	0.30	0.66	0.86	0.33	1.19	0.86
Bridge work.	0.34	0.15	0.49	0.16	0.65	0.60
Workshop machinery.	0.43	0.39	0.82	0.01	0.83	0.70
Engineer's plant	0.26	0.18	0.44	0.02	0.46	0.42
Other materials*		0.24	0.24		4.82	4.89
TOTAL		6.76	20.71		35.87	28.03

* Other materials consist of coal and coke, stone, bricks, lime and ballast, etc.

70. Purchases through the Indian Stores Department.—The purchases by Class I Railways, excluding His Exalted Highness the Nizam's Guaranteed State Railways, through the Indian Stores Department for the years 1926-27 and 1927-28, were as follows:—

	(In thousands of rupees.)	
	1926-27.	1927-28.
Textiles	26,02	28,12
Cement	7,31	14,48
Creosote.		12,58
Lubricating and other Oils and greases	11,96	4,63
Paints and varnishes	2,60	4,34
Electric fans, lamps and other electrical stores	2,46	4,29
Plant and machinery	6,64	4,08
Steel and steel sections including steel spring	8,24	
Water supply materials.		88
Parts of Rolling stock	75	
Miscellaneous.	1,37	88
Total	67,35	74,28

71. Expenditure on the fabrication and manufacture of stores in India.—The statement in paragraph 69 showing the value of stores purchased under principal headings does not, however, take into account the very large expenditure incurred by the railways themselves on subsequent fabrication and manufacture nor the cost of large engineering works carried out '*in situ*'. The following statement shows the approximate expenditure on the fabrication of purchased stores, separate figures being given in the case of stores imported and stores of Indian manufacture or of indigenous origin. These figures are exclusive of the value of the stores used in the fabrication and manufacture or in the engineering works.

	Cost of fabrication and manufacture of stores imported direct or of imported stores purchased in India	Cost of fabrication and manufacture of stores of Indian manufacture or of indigenous origin
	(In thousands of rupees)	
1. Construction of Locomotives	32,04	29,74
2. Construction of Boilers	94	14
3. Construction of coaching stock including underframes	44,41	23,82
4. Construction of Goods stock including underframes	67,73	24,53
5. Construction of spare parts of Locomotives	40,93	28,55
6. Construction of spare parts of Coaching and Goods stock	31,50	28,67
7. Construction of Other Stores	19,31	42,06
8. Work done for other Departments, i.e., departments other than that supervising the workshops	83,72	70,02
9. Engineer's plant	9,95	3,12
10. Permanent way	7,72	40,26
11. Bridge work	9,48	1,60
12. Structural or other engineering works	81,75	22,94
Total	4,29,48	3,15,45

Cost of structural and other engineering works carried out ' *in situ* '.

(In thousands of rupees.)

Bridge work	76,11
Structural and other engineering works	4,34,40

5,10,51

ASSAM-BENGAL RAILWAY



Garrett Engine

CHAPTER VI.

STAFF.

72. Number of stall.—The total number of employees on Indian Railways and in the Railway Board and other offices at the end of the year 1927-28 was 800,102 as compared with 772,583 at the end of 1926-27. The increase in route mileage during the same period was 699 miles. The following table shows the number of employees by communities on 31st March 1927 and 1928:—

Year.	Europeans.	STATUTORY ; INDIANS					GRAND TOTAL
		Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total	
1926-27	5,076	558,764	170,018	14,352	24,353	767,487	772,503
1927-28	5,110	673,901	179,262	14,374	27,466	794,992	800,102

73. Cost of staff.—The following statement shows the cost of staff employed on Class I Railways during the years 1926-27 and 1927-28 :-

Bailway System.	1926-27. Rs.	1927-28. Rs
Assam Bengal	58,13,675	63,39,743
Bengal and North-Western	71,11,372	72,82,816
Bengal Nagpnr .	2,77,16,640	3,01,06,532
Bombay, Baroda and Central India	4,39,14,424	4,58,89,057
Burma	1,62,35,564	1,61,96,893
Eastern Bengal .	2,44,66,745	2,56,07,927
East Indian	6,53,76,520	6,76,49,780
Great Indian Peninsula	5,84,93,346	5,76,62,205
Jodhpur	24,51,578	26,29,419
Madras and Southern Mahratta	2,43,14,075	2,50,65,117
Nizam's Guaranteed State	54,86,340	55,01,479
North-Western	6,29,39,027*	6,73,40,471
Rohilkund and Kumaon .	17,27,683	17,04,378
South Indian	1,83,05,534	1,93,45,913
TOTAL	36,33,52,423*	37,88,21,679

These figures of cost include not only the total pay of the staff but their allowances (except travelling allowances), gratuities and provident fund bonuses. With the exception of the (Great Indian Peninsula and Rohilkund and Kumaon Railways all Railways show an increase in expenditure on staff in 1927-28, which is attributable to the large construction programme and to ordinary increments in the time scale of pay

74. Recruitment and training of officers.—The regulations for the recruitment and training of officers in India for the Indian Railway Service of Engineers, the Transportation (Traffic) and Commercial Departments; and the Mechanical Engineering and Transportation (Power) Departments were

* Revidtd figures.

revised in form and republished. Regulations for the recruitment and training in India of officers for the Electrical Engineering and Signal Engineering Departments were incorporated in the Regulations for the Mechanical Engineering and Transportation (Power) Departments.

Six vacancies in the Indian Railway Service of Engineers and seven in the Transportation (Traffic) and Commercial Departments were filled during the year under these regulations. The quota committees formed by Provincial and Local Administrations nominated 88 candidates to appear for the two competitive examinations.

Towards the close of the year arrangements were started for the selection of the first batch of special class apprentices for the Mechanical Engineering and Transportation (Power) Departments under the new regulations.

The Board have under preparation a scheme for the recruitment and training in India of officers for the State Railway Coal Department and also regulations for the recruitment in India of Medical officers for State-managed railways.

It has also been considered whether any special arrangements are necessary for the recruitment of engineers for the Bridge Department of State railways. As the practical work in connection with bridges, including construction and erection, can be performed by officers of the Civil Engineering Department who have to deal constantly with problems of bridge maintenance and erection, and as the number of specialist Bridge Engineers, required for designing bridges and devising methods for girder strengthening, is small, the Railway Board have come to the conclusion that no special scheme of recruitment is required.

75. Indianisation.—The following statement shows by Class I Railways the number of gazetted officers on State-managed Railways and officers of corresponding rank on Company-managed Railways on 1st April 1928 as compared with 1st April 1927. Full details of the numbers by departments will be found in Appendix F which also contains similar information relating to subordinates on scales of pay rising to Rs 250 per mensem and over.

Statement of gazetted officers on State-managed Railways and officers of corresponding rank on Company-managed [Class I] Railways [excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways] on the 1st April 1928 as compared with April 1927

Name of Railway.	1st APRIL 1927						1st APRIL 1928						[INCREASE, DECREASE-					
	Statutory Indians						Statutory Indiana						Statutory Indians.					
	Europeans	Hindus	Muslims	Anglo-Indians	Total	Grand Total	Europeans	Hindus	Muslims.	Other classes	Total	Grand Total	Hindus	Muslims	Anglo-Indians.	Other classes	Total.	Grand Total
A. B. . .	53	10		0	10	72	52	11	4		22	74	- 1	+ 1	+ 1	-4	+3	+2
U.N.	162	26	6	12	45	307	169	35	5	16	2	217	- 8	+7		+4	+2	+13
B. & N. W	41	8			6	661	64	6		1		70	+3		+1		+1	+4
B., B. & C. I. .	148	21	1	10	15	47	196	140	21	3	11	16	49		+1	+1	+2	-8
"Bama	94			14	6	24	118	06	7	1	10	6	24	120	+2	-48	-4	+2
B. B.	78	36	3	11*	4	64*	132	64	37	5	16	6	68	147	+8	+1	+3	+16
B. I. . .	226	00	15	56	6	136	362	213	74	17	86	7	154	367	-13	+14	+2	+18
G. I. P. . .	102	25	6	45	0	45	347	190	86	4	14	10	661	246	-2	+8	-1	+1
M. & S. M. . .	126	30		7	8	40	168	126	20	0	8	43	167	-8	-1	+1	+3	-1
N. W.	201	78	21	21*	6*	186*	327*	186	64	31	34	118	827	-15	+4	+8	+8	+1*
R. & K. . .	12	2	1		3	15	11	2	1		8	14	-1					-1
S. I.	105	40*	2	4	3	48*	154	101	48	2	6	1	51	158	-8	+3	-4	+3
	56*	10*	1	11*	2*	34*	80*	8	2	13		24	87	+7	-3	+1	+2	-1
TOTAL	1,516*	349*	58	166*	54	627.	2,143	4,485	584	65	186	68	898	8,176	-81	485	47	+16

* Revised figure.

Statement showing percentages of total officers employed.

	BASTEEN BENGAL, EAST INDIAN, GREAT INDIAN PININHULA AND NORTH-WESTERN RAILWAYS		TOTAL CLASS I BAILWAIS (EXCLUDING NISAMTH GUARANTEED STATE AND JODHPUR RAILWAYS)	
	1st April 1927.	1st April 1928.	1st April 1927.	1st April 1928.
Europeans	65-26*	6191	70-74*	68-18
Statutory Indians-				
Hindus	18-63*	2051	16-28*	17-63
Muslims	4-22*	4-33	2-71	2-98
Anglo-Indians	9-55*	1012	7-75*	8-36
	2-34*	313	2-52	2-85
TOTAL	34-74*	3809	29-26*	3182

* Revised figures

The number of Indians filling gazetted posts increased from 29-26 per cent to 31-82 per cent. On the four State-managed lines the increase was - from 34-74 per cent, to 3809 per cent.

76. Vacancies among officers and how filled.—In accordance with the practice of the last two years a detailed statement is included as Appendix G of this report showing the number of appointments created and vacancies which occurred among officers of gazetted rank on State-managed railways and of corresponding rank on Company-managed railways and how they were filled in the last two years. These figures are summarised in the tables below, separate statements being given for *permanent* vacancies as distinct from *total* vacancies (temporary as well as permanent)

State-managed Railways.—

Statement showing the number of *permanent* appointments created and vacancies which occurred among officers of gazetted rank on State Railways during the year 1927-28, and how they were filled

Item.	No. of new appointments created during the year.	No. of appointments abolished during the year	No. of vacancies -which occurred during the year	No. of vacancies which occurred during the year, less those filled during these years remaining- to be filled	No. of net vacancies to be filled	No. of vacancies not filled up during the year.	No. of vacancies actually filled	FILLED BY					
								Statutory Indians.					Total
								Hindus	Muslims	Anglo-Indians, and Domestic Euro-			
	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agency			19	2	28	1	27		13	1	6	1	21
2. Engineering			7	10	28	8	20	4	7	1			16
3. Townships and Commerce.													
4. Mechanical Engineering	9*		4	1	14	3	11	7	2	1	8	1	4
5. Stores Department			2		2	2							
6. Other Departments			8		15	1	14	6	5			1	8
7. Total	36		38	13	89	17	72	23	27	3	16	3	49
{ 1927-28	15	8	34	18	61	13	48	18	22	5	1	2	30
{ 1926-27													
8. Percentage of Europeans to No. of vacancies filled. 1927-28	37.3												
{ 1928-27	32.0												
9. Percentage of Statutory Indians to No. of vacancies filled. 1927-28	62.5												
{ 1926-27	68.0												

* Include posts treated for the training of probationers.

Statement showing the **total** number of appointments created and vacancies which occurred among officers of gazetted rank on, State Railways during the year 1927-28, and how they were filled.

Item	1	No. of new appointments created during the year	No. of appointments abolished during the year.	No. of vacancies which occurred during the year	No. of vacancies which occurred in previous years not filled in these years remaining to be filled.	No. of net vacancies to be filled.	No. of vacancies not filled up during the year	No. of vacancies actually filled.	Europeans	Hindu	Muslims.	FILLED BY		
												Statutory Indians.		
												Anglo-Indians and domiciled Europeans.	Other classes	Total.
		2	3	4	5	6	7	8	9	10	11	12	13	14
1 Agency.					2	2	2							
2 Engineering		22*		19	2	43	6	37	14	15	4	6	1	28
3, Transportation and Commercial.		12*			11	29	8	21	4	8	1	8		17
4 Mechanical Engineering		10*		4	17	27	5	22	18	2	1		1	4
5 Stores Department				2		2	2							
6. Other Departments		12*		6		18	2	16	8	5		2	1	i
7. Total .	{ 1927-28 . { 1920-27	56		38	27	121	25	96	44	30	3	16	3	52
		54	0	34	25	107	27	80	42	26	7	3	2	38
8. Percentage of European number of vacancies filled.	{ 1926-27 . { 1937-73	42.5												-
9. Percentage of Statutory Indians to number of vacancies filled	{ 1926-27 { 1927-28	47.5												..

* Ittctados posts created for the training of probationers

Of the officers appointed to the permanent staff during the year 68 per cent, were Indians as compared with 62 per cent, in 1926-27 and 32 per cent, in 1925-26. Of the total vacancies filled during the year 54 per cent, were filled by Indians as compared with 47.5 per cent, in 1926-27 and 44 per cent, in 1925-26.

Analysed by Branches the figures for appointments to the permanent staff show that the percentages of Indians appointed were to the Engineering Branch 78 per cent., to the Transportation and Commercial Branch 50 per cent., to the Mechanical Branch 36 per cent, and to other Branches 57 per cent. Other Branches include Electrical, Signal, Bridge, Medical, Statistical and Coal

compared with the figures for 1926-27 is mainly due to the fact that only 5 appointments were made to the Transportation and Commercial Branches during 1927-28 as compared with 18 appointments in 1926-27. Of the permanent appointments, in the Engineering Branch 70 per cent, were filled by Indians, in the Transportation and Commercial Branches 40 per cent, in the Mechanical Branch 23 per cent., in the Stores Branch 75 per cent, and in other Branches 50 per cent. Corresponding percentages for 1926-27 were Engineering 60 per cent., Transportation and Commercial 78 per cent., Mechanical *nil*, Stores 64 per cent, and others 55 per cent. Taking the years 1926-27 and 1927-28 together 53 per cent, of the officers appointed to the permanent staff of Company-managed Railways have been Indians.

77. As regards the higher subordinate grades a detailed statement will be found in Appendix F showing by Railways, the number of employees on scales of pay rising to Rs. 250 and over on the 1st April 1928 as compared with 1st April 1927. A summary of the figures is given below:—

Statement of subordinates on scales of pay rising to Rs. 250 per Mensem and over on Class I Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1928 as compared with 1st April 1927.

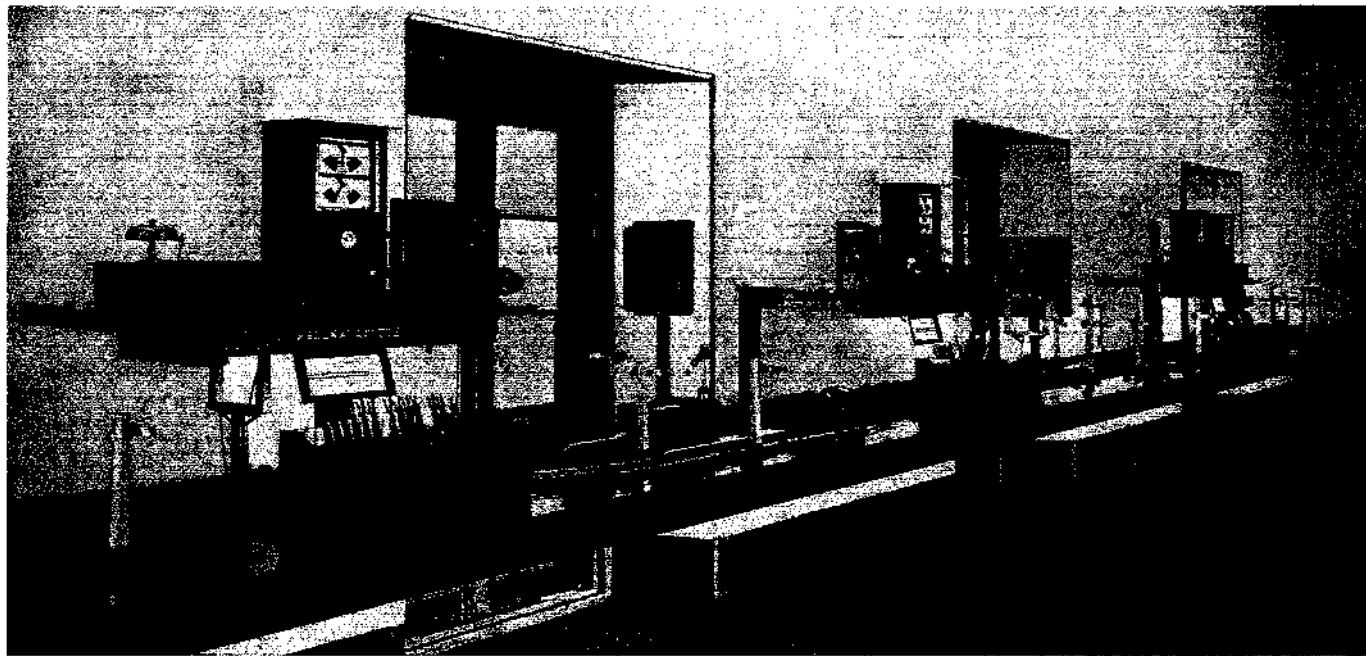
Name of Railway.	1ST APRIL 1927.										1ST APRIL 1928.										INCREASE +, DECREASE —					
	Statutory Indians.										Statutory Indians.										Statutory Indians					
	Hindus.	Muslims	Anglo-Indians	Other classes	Total.	Grand Total.	Europeans	Hindus	Muslims	Anglo-Indians	Other classes	Total	Grand Total	Europeans	Hindus.	Muslims	Anglo-Indians	Total.	Grand Total.							
A.B. . .	19	28	3	37	9	77	96	32	27	3	41	7	78	100	+8	-1		+4	-3	+1	+4					
B.N. .	322	178	14	40	13	614	980	317	171	13	880	0	673	890	-5	-7	-1	-29	-1	-41	-46					
B.&N.W.	33	14	4	55		73	106	30	13	5	59	1	73	108	-8	-1	+1	+4	+1	+8	+3					
B.&B. & G I	144	261	32	37	189	829	973	148	267	80	860	169	826	974	+4	-4	-2	+3		-8	+1					
Burma	22	87	0	27	41	904	386	19	105	12	248	46	410	429	-3	+18	+8	+21	+4	+46	+43					
E. B. . .	126	128	7	178	8	314	440	108	141	9	188	11	349	457	-18	+13	+2	+15	+6	+86	+17					
E.I. .	621	878	34	1,006	10	1,427	2,048	11	419	48	1,069	10	1,481	2,675	+27	+4	+9	44	+54	+27						
G.I P.	335	100	30	720	142	1,857	1,592	305	217	86	742	157	1,457	-30	+63	+6	+22	+15	+96	+66						
M. & S M ..	75	86	1	182	18	234	800	78	35	2	176	16	229	804			+1	-6	-5		5					
N.W.	322	343	10	404	73	966	1,288	389	362	160	864	96	982	1,341	+37	+19	+13	-40	+24	+16	+68					
R.&B. K .	6	4	1	12	1	18	24	7	4	1	12	1	18	25	+1					+1						
B.I. . .	49	65	5	168	0	254	800	53	75	3	175	7	260	818	44	+6	-2	+7	-2	+9	+13					
Railway Board and other railway offices	4	64	9	18	7	118	122	5	92	10	18	8	128	133	+1	+8	+1	+1	+10	+11						
Total	2,078	1,773	290	2,878	484	6,342	8,422	2,042	1,219	827	3,792	526	6,564	8,606	-36	+144	+31	+5	+42	+222	+136					

Statement showing percentages of total senior subordinates employed.

	EASTERN BENGAL, EAST INDIAN, GREAT INDIAN PENINSULA AND NORTH WESTERN RAILWAYS		TOTAL CLASS I RAILWAYS (EXCLUDING H. E. H. THE NIZAM'S GUARANTEED STATE AND JODHPUR RAILWAYS)	
	1st April 1927.	1st April 1928	1st April 1927.	1st April 1928
Statutory Indians—	27-17*	25 63	24-68*	2373
Muslims	1962*	2137	21-08*	2230
Other classes	4-22*	465	8 51*	3.80
	44-54*	43.21	44-98*	4406
	4-45*	514	5-75*	611
TOTAL	72-83*	74-37	7532*	76-27

Revised figures.

RAILWAY SCHOOL OF TRANSPORTATION, CHANDAUSI



Model Room

During the year there was an increase of 222 in the number of Indians holding these posts and a decrease of 36 Europeans. More than three-quarters of the posts are now held by Indians.

78. Training of staff.—During the year 80 officers, 486 subordinates and 20 probationary signallers, or 586 in all attended the Railway School of Transportation, Chandausi. The courses held were as follows:—

Special course for Senior Scale officers.—Two short courses of six days each.

Special courses for Commercial officers.—Two courses of fourteen days each, in railway economics, accounts and commercial working.

Senior courses.—Seven courses of 30 days each for junior officers and senior subordinates.

Junior courses.—Eight courses of 30 days each for Transportation subordinates.

Area courses.—Eight courses of three weeks each for Transportation staff of the Lucknow, Allahabad and Moradabad Divisions of the East Indian Railway and of the Delhi and Ferozepore Divisions of the North-Western Railway.

Probationary Signallers' course.—A nine months' course for Probationers from the Lucknow, Allahabad and Moradabad Divisions of the East Indian Railway commenced on November 1st, 1927.

In addition to the above courses a two months' course was held for training selected candidates as Instructors for Area schools

The Transportation model room contains a miniature railway 2½" gauge. This railway which is 150 feet in length (60' single line and the remainder double line) has ten stations and twelve signal cabins. Full size block instruments are operated throughout and all stations are interlocked. The number of students who can be taught conveniently on this model at one time is 14. The electric engines pick up current from a third rail. During the year a new model tank engine was obtained from Messrs. Bassett Lowke, * Ltd, London. Each model cabin is in communication with train controllers where charts of the train-running are plotted as is done in actual working. During the year an improvement has been introduced by dividing the control office into two and separating the control office from the model room, where loud speakers have been installed and all the students of one class can work simultaneously, thereby getting very much more practice.

There is a full size lay out consisting of two cabins and locking frames, a bracket home signal, and a pair of facing points with facing point lock, locking bar and detectors. The main line signal arm is mechanically slotted from the second cabin and the loop line arm is electrically slotted, the latter being connected with a Siemens mercury treadle which acts as a replacer and is operated by rolling a pair of wheels over the track

The Locomotive model room is equipped with a engine cab and foot plate, also part of the locomotive boiler showing the fire box, boiler stays, etc. Fitted on the foot plate is a vacuum ejector and indicator, a steam regulator, gauge glasses and injectors.

The catering continues to be in the hands of a contractor, who also keeps a small shop where stores and provisions can be obtained. For the senior students there are separate mess rooms for officers, European subordinates, Muhammadans and Hindus, while the juniors are provided with messes for orthodox Hindus, unorthodox Hindus and Muhammadans. There are two tennis courts, a seven-hole golf course and hockey and cricket grounds. The health of the school has remained excellent throughout the year in spite of periodical plague epidemic in Chandausi city and the surrounding villager

79. Area Schools.—There has not been very much change in the Area Schools since the last report.

The East Indian Railway Asansol school is still very handicapped for lack of accommodation. Arrangements are being made to provide another

RAILWAY SCHOOL OF TRANSPORTATION, CHANDAUSI



General View of Grounds

lecture room by adding an upper storey to the present building. But, as stated in the last annual report, it is intended to remove the school from Asansol to Gomoh eventually and designs and estimates are being prepared.

The Lyallpur school has been improved somewhat since the last report. The Transportation model room is now equipped with a W gauge track. The instruments in use are Neal's Token instruments single line, Pryce and Ferreira's new type block instruments double line, and Tyres Block instruments double line. The Locomotive section is well equipped with models of the different locomotive gears, section models of the vacuum brake, etc. Further development of this school has, however, been stopped as it is found that the expansion of it would entail the acquisition of very high-priced land, which would make the whole scheme too expensive; it has recently been decided to move the school to Kot Lakhpat (near Lahore), where a suitable and inexpensive site has been selected. An estimate for the Kot Lakhpat scheme was sanctioned shortly after the close of the year under review.

The Bina school is also only a temporary one, accommodated in buildings designed for other purposes. Some improvements have been made. The model room is equipped and working with a 3" gauge track. The instruments in use are Neal's Token instruments single line and Tyres three-way one wire Block Instrument double line. Plans and estimates are under preparation for a new school at Dhond.

80. Railway Staff College, Dehra Dun.—It was mentioned in last year's report that the Railway Board had decided to build a Staff College at Dehra Dun to give training in the various sides of Railway work to junior officers, just as Chandausi and other area schools do for the subordinate-staff. The Board have recently sanctioned a scheme for this Railway Staff College at an estimated cost of Rs 23,37,840. The college is intended primarily for the training of probationary and junior officers already employed on railways but classes for more senior officers will be held in time. For the present it will meet the needs of State-managed Railways and will deal with transportation and commercial work and with certain allied subjects connected with these aspects of railway working. Good progress has been made on the work.

81. Labour Position on Indian Railways.—In Chapter V of the last Annual Report reference was made to the investigations of the State Railways Workshops Committee in the early months of 1926 and some account was given of the advantages which it was hoped would be attained as a result of the introduction of improved workshop methods and organisation. Improvement in fact actually became apparent in 1927-28 in reduction of cost of repairs of rolling stock, but there is one important effect of these measures, which was not mentioned in last year's Report, namely, the resulting possibility of an appreciable reduction in the labour force of workshops owing to improved machinery and better organisation, and some embarrassment has arisen in several places on account of this.

Unrest in Khargpur Workshops.—For instance, an examination by the Bengal Nagpur Railway Administration showed that an immediate reduction* of about 1,600 men in the workshops at Khargpur had become possible, and in August 1927 the Agent announced his intention of reducing the labour force at Khargpur by this number. At the same time, he offered special terms to workmen who were willing to resign and these were accepted by about 300¹ men. The reduction was, however, resented by the workmen and on the 7th of September, when notices of discharge to the number required were issued, they adopted a policy of passive resistance attending the workshops but doing no work. This continued until, on the 12th of September, the Agent was constrained, by the fear of disturbances among the men, to close the workshops until such time as he should receive an assurance from the men's leaders that they were willing to work. The workshops were eventually re-opened on the 8th of December 1927. As vague charges of victimisation and unfair treatment had been made, the Agent decided to depute an officer of the B. N. Railway, who was not connected with the management.

of the workshops, to examine the list of discharges and to report to him. At the request of the Agent, the Government of India also agreed to depute an officer to be associated with the officer nominated by the Agent in this enquiry, the object of which was not only to review the list of selections for discharge in order that any cases of unfair treatment might be brought to notice, but also to examine the application to individual cases of the rules and orders under which the sums due to the men discharged had been determined and to see that due consideration had been or would be paid to any cases of special hardship. As a result of this enquiry 23 workmen who had been discharged were reinstated, and in a few cases the compensation given to the men who had been discharged was enhanced.

Further, in view of the anticipated necessity of effecting reductions of labour in the workshops of other railways, as well as a further reduction at Khargpur, the Government of India considered it desirable that the question how such reduction could best be effected should be fully investigated, and therefore deputed two officers, one a railway officer with workshop experience and the other a non-railway officer of administrative experience with a knowledge of labour conditions, to visit the railways on which the need for reduction in workshop labour was understood to be imminent. The duties of these officers were to report to the Government regarding the arrangements which should be made in order to secure as far as possible efficient and economical working in the workshops concerned and at the same time to safeguard the interests of the workmen when a large reduction of establishment was found necessary. In particular, the non-railway officer was specially charged to report in each case what terms would suffice to secure a substantial number of voluntary resignations and the terms which ought in fairness to be given to the men selected for compulsory discharge when that became unavoidable. By the end of the year these officers had examined the position in the workshops of the South Indian Railway and had made their recommendations to Government.

Lillooah Workshops.—Early in 1928 demands were received from workmen in the Carriage and Wagon Workshops of the East Indian Railway at Lillooah for increased wages. On the 5th of March, before the examination of these demands had been completed, the men resorted to passive resistance, entering the shops but refusing to work. On the 6th of March, the Agent announced that the examination showed no justification for any general increase in wages, but that an investigation, whether the wages earned by any class or classes of workmen at Lillooah were lower than those earned under similar conditions in other workshops in Calcutta and its vicinity, was still proceeding. On the 7th of March the men came into the workshops, but again refused to work and it became necessary to close the shops until an assurance should be received that the men were prepared to work. The workshops had not been re-opened by the end of the year.

CHAPTER VII.

MISCELLANEOUS.

82. Amenities and improvements for the general public.—In accordance with usual practice a brief description is given below of the steps taken by the principal railways in the provision of amenities and improvements for the travelling public. 14 Indian refreshment rooms were built during the year and vendors' stalls were provided at 80 stations. 41 additional waiting rooms were opened and 75 waiting halls for 3rd class passengers. Extensions or additions were carried out to 80 waiting halls. Special attention has been devoted by railway administrations in recent years to the necessity for providing a good supply of drinking water at stations and many improvements have been carried out or taken in hand on all railways.

Assam Bengal Railway.

Six additional mixed trains were introduced during the year. Refreshment rooms were provided at two stations. Hindu and Muhammadan hotels were built at one station and vendors' stalls were provided at two stations. Additional waiting accommodation was provided at 23 stations and ladies waiting rooms at four stations. The lighting arrangements at two stations were improved by the provision of high power lamps.

Bengal and 'North-Western Railway.

Six additional mixed trains were introduced on different branches.

75 additional watermen were appointed during the hot weather for supply of water to passengers at stations and on certain sections of the railway the system of carrying cool drinking water in buckets and earthen pots in trains was introduced on trial.

3rd class passenger halls were completed at Hajipur, Naugachia, and Raxaul during the year. 1st and 2nd class waiting rooms were provided at Pharenda and the waiting room at Mahendrughat for 1st and 2nd class passengers was enlarged and bathrooms added to it.

Bengal Nagpur Railway.

With the opening of the Chandil-Barka kana line, a new express between Ranchi and Howrah was introduced to run *vid* Tatanagar, the old train *vid* Adra becoming the Gomoh Express. Extra passenger services were introduced on eleven sections and sentinel coaches on five sections.

In order to facilitate the supply of water to trains at stations an experiment was made with water drums on wheels and 100 of them have been distributed among stations. Special sheds for keeping the water clean and cool were put up at Tangerbansli, Bishnupur and Salboni and the supply of water was improved at Bermo.

An Indian refreshment room was opened at Waltair, and stalls and kitchens for Indians have been put in at 14 stations and tea stalls at 10 stations.

An inter class waiting room for Indian ladies was opened at Gondia and new passenger halls were provided at 7 stations. Waiting rooms were provided for 1st, 2nd and inter class passengers at Chandrakona Road and a waiting hall at Posoita.

Burma Railways.

Electric berth lights were in the course of being provided in first class compartments, electric lights and fans were installed in three rakes of four wheeled coaching stock, and panel shutters of 3rd class coaches were substituted by Venetians.

Extra platform hydrants were provided and Hindu watermen appointed at certain important stations. Waiting halls were extended in size at several stations to meet the growth of passenger traffic.

Bombay, Baroda and Central India Railway.

On the broad gauge the electrification of the suburban section between Colaba and Borivli was inaugurated on the 15th January 1928 from which date a mixed service of steam and electric trains was introduced

Special attention was given to the convenience of pilgrims attending the monthly Poonam Fair at Dakor, additional special trains being run and through carriages put on as an experiment from Bombay. The latter venture unfortunately was not well patronised

Very successful results were obtained by the introduction of Holiday Excursion trains for passengers of all classes during the Christmas Holidays, an inclusive charge being made to cover not only the special reduced fares but the catering charges *en route*.

The system of providing travelling watermen during the hot weather, which has proved very popular in the past, has been continued and the watering arrangements at 13 stations have been improved by the provision of extra hydrants and taps, etc.

The existing arrangement to provide hot Indian meals and refreshments on 19 Down and 20 Up, 3 Down and 4 Up, has become increasingly popular with the travelling public. An Indian refreshment room was opened at Anand and Hindu and Muhammadan tea-stalls were built at 12 stations at an aggregate cost of lis. 57,000 either as additions or to replace unsatisfactory types.

As regards waiting halls a priority list of stations for all gauges has been prepared and it has been arranged either to provide additional halls or to increase the existing accommodation at all these stations within the next quinquennial period.

During 1927-28 waiting halls were constructed or extended at 17 stations, extra waiting rooms were provided at 5 stations.

14 stations were equipped with foot-overbridges during the year and a programme has been drawn up for the erection or extension of foot-bridges at other stations within the next 2 years.

The comforts of passengers waiting for trains were enhanced by the provision of platform benches, train indicator boards and the better lighting of waiting halls at many stations.

18 stations and yards were equipped with electric light and numerous electric lights have been added at other stations for the convenience of passengers. At 16 stations high power lamps were installed on the platforms.

Eastern Bengal Railway.

On the broad gauge 23 additional suburban and local trains were introduced on different sections and 5 down suburban trains were extended from the inner to the outer zones.

On the metre gauge instead of the Bengal and North-Western Railway train terminating at Katihar and involving a change into the Eastern Bengal Railway train for stations on the Amingaon section, one through train from Allahabad to Amingaon and *vice vend* has been introduced running over both railways. This through train has afforded oogyrenience especially to the cooly

traffic between the United Provinces, Bihar and Assam. Three Sentinel trains were introduced each way between Narayanganj and Dacca to counter-act motor bus competition.

The supply of drinking water has been receiving the special attention of the Administration. Pure drinking water is not ordinarily available in the country traversed by this railway and the position was worse than usual during the year on account of the exceptional dryness of the weather. The difficulty was, however, solved to a certain extent partly by the supply of filtered water to certain stations by means of travelling tanks and partly by the provision of tube wells and extra masonry wells. Improvements in water supply have been carried out at 17 stations at a cost of one lakh

At Parbatipur a new masonry building was constructed to replace the old structure for the Hindu and Muhammadan refreshment rooms. Minor additions were also made to the Hindu and Muhammadan refreshment rooms at Katihar. The Administration has provided waiting halls at 8 stations, extensions and improvements to waiting halls at 8 stations, latrines for passengers at 6 stations, extension, widening and raising of platforms at 7 stations, masonry benches at several stations and a new platform at one station. Inter and third class ladies waiting rooms were provided at 6 stations and a new upper class waiting room was constructed at one station.

East Indian Railway.

The fitting of external lights to carriages was proceeded with during the year. These lights illuminate badly lit platforms and also the doorways of carriages, reducing mishaps in entraining and detraining to a minimum. Another purpose served is the easy detection of unauthorised persons attempting to board a moving train.

A tube well was sunk at Patna Junction and a reinforced concrete drinking water tank was provided at Asansol. At Moradabad water taps were provided on the main station platform.

At Benares Cantonment additional vendors' shops were provided in the 3rd class waiting halls and additions and alterations were carried out to the Hindu refreshment room. The vendors' stalls at Dinapore were dismantled and rebuilt and 4 additional vendors' stalls were constructed at Gaya.

Passenger platforms were raised at Simbhaoli, Jowalapur, Maholi and Sitapur Cantonment while the platforms at Amroha, Rajghat, Kathghar and Banthra were extended.

Bathing places were provided at Kiul, Moghalsarai, Shahjahanpur and Bareilly. At Prayag Ghat considerable improvements were made in connection with the Magh Mela, such as raising the palisading, providing five new gates and watering arrangements.

Great Indian Peninsula Railway.

Improvements in the supply of drinking water to passengers have been completed at 8 stations during the year and are in hand at 7 other stations.

One dining room, 3 tea stalls and 10 food stalls were brought into use for the convenience of 3rd class passengers during the year. Waiting halls have been completed at 18 stations.

The passenger platforms at 54 stations have been lengthened. The platform sheds at 8 stations in the Bombay Suburban area have been extended to afford more protection to passengers and the platforms at 3 stations on the Harbour Branch have been paved. Upper class waiting rooms were provided at 3 stations. The foot overbridges at 10 stations have been provided with coverings and a covered way was provided between the broad and narrow gauge platforms at Nagpur. Foot overbridges have been constructed at five stations, electric lights have been provided in the platform halls at two stations and the floor of one third class waiting hall was paved. A pilgrim shed was provided at Kurduwadi. High level platforms were provided at 2 stations and a new passenger platform was provided at Poona.

Jodhpur Railway.

Improvements made in rolling stock include the adoption of elliptical roofs on all stock giving greater air space, the abolition of centre luggage racks making carriages more airy, and the provision of top drop windows in upper class stock for ventilation of upper bunks. Three bogie inter class carriages were provided with complete cooking compartments for Hindus.

Third class passenger halls have been provided at four stations and waiting rooms have been constructed at 2 stations.

Madras and Southern Mahratta Railway

The passenger train services have been extended and improved on several sections.

The water supply at 7 stations was improved and water taps provided on platforms at 9 stations. An Indian refreshment room at Cuddapah and at Madanapalle Road and a Muhammadan refreshment room at Jalarpet were opened during the year. Refreshment stalls were provided at 10 stations on the broad gauge and 7 stations on the metre gauge.

Extensions to 3rd class waiting halls were completed at 7 stations on the broad gauge and 9 stations on the metre gauge. Waiting halls were constructed at 2 stations and special waiting rooms for Gosha ladies were opened at Cuddapah and Nellore. The station at Jalarpet has been completely remodelled on modern lines, spacious waiting rooms and refreshment rooms being provided for passengers of all classes.

His Kaalted High/cess the Nizam's Guaranteed State Railways.

Refreshment rooms for Hindus and Muhammadans have been opened at Dornakal, Kazipet and Purna. Separate Indian sweet-meat and refreshment stalls were provided at Aurangabad. Waiting halls were provided on the platform at Hyderabad (metre gauge) and Jadcharla. The roofing of No. 2 platform Secunderabad broad gauge and the metre gauge island platform were completed. High level platforms and waiting halls with benches and improved approaches were provided at several local halts-

North Western Railway.

Excluding new sections opened for traffic 45 additional passenger trains were introduced during the year on various sections. In addition extra shuttle trains were run for different periods on 17 sections to compete with road-motor traffic.

Many tube wells, some with mechanical pumps and some with hand pumps, have been installed at about 35 stations. Cool water tanks with taps have been provided at Jullundur City. Water cooling shelters have been constructed at 16 stations.

Separate Hindu and Muhammadan refreshment rooms have been opened at Rohri and Indian refreshment rooms have been opened at Lyallpur, Jullundur City and Rohtak. Vendors' shops have been constructed at 9 stations.

Waiting sheds have been provided on passenger platforms at 14 stations.

Third class passenger waiting halls have been provided at 11 stations, and have been extended at 5 stations. Platform benches have been provided at most of the stations on the Karachi and Multan Divisions. Inter class ladies' waiting rooms have been provided at Wazirabad, Sialkot, Bhatinda and Khairpur Mir's, and 3rd class waiting rooms have been provided at 4 stations.

Additional booking offices for 3rd class passengers have been opened at 3 stations. Branch booking or parcel offices have been opened in Karachi, Lahore, Kartarpur, Amritsar, Delhi and Raw

BOMBAY. BARODA, & CENTRAL INDIA RAILWAY



Breaches in Main Line near Itola, July 1927

On the metre gauge the line between Sanawad and Nimar-kheri and Nimar-kheri and Attar was breached on 12th July 1927 and passenger trains had to be transhipped. In the same month there were several breaches on the Ahmedabad-Dholka Railway causing dislocation of train service of this section and stoppage of goods booking via Dhandhuka Junction. Through communication was restored from 1st March, 1928. On the 24th July 1927 owing to heavy rain the Dhrangadra branch was breached at several places between Wadhwan and Halvad resulting in complete suspension of traffic to and from this Branch. Through communication was restored on 30th August between Raj-Seetapur and Dhrangadra and on 3rd November between Dhrangadhra and Halvad. Other breaches which occurred in July were between Bechraji and Dethali, Moodhera Road and Bechraji, and on the Wadhwan and Viramgam section.

Bengal Nagpur Railway.

Very bad floods occurred at the end of July 1927. The line for a distance of over 11 miles in the vicinity of Kenduapada was completely wiped out and traffic was interrupted for a period of nearly 2 months. The same storm completely washed away the bridge over the Khorkhai river near Rairan[^]pur station on the Onlajori—Badampahar branch and damaged the Khorkhai bridge at Tatanagar and the Brahmini bridge at Panposh. The storm was a phenomenal one and not likely to recur more than once in a century. At Kenduapada the track has been restored and four Irish bridges have been put in to prevent similar damages in future. The rebuilding of the bridge at Rairangpur and repairs to the damaged bridges are in hand.

Assam Bengal Railway.

On the night of 30th September 1927 owing to a heavy flood in the Fatinga river the retaining wall at mile 288F on the hill section was washed away. Through communication was restored on 3rd October. A 90' bank at mile 353 was also washed away on 14th October, through communication being restored on 19th October.

The Matijuri bridge at mile 210 was seriously endangered by heavy flood in the stream, causing a pier to move. Transshipment was resorted to for one day until communication was restored.

Bengal and North-Western Railway.

Between August 11th to 13th, 1927, a heavy flood in the Kosi river breached the line between Parsarma and Supaul and between Supaul and Thurbhita and train service between these points had to be suspended. Through running of trains was restored on August 25th. Simultaneously the line between Bhaptiahi and Raghupur Ghat was seriously damaged and the running of trains on this branch had to be suspended indefinitely.

Burma Railways.

Except for serious floods on the Mu Valley district interruptions to traffic were few in number during the year. The principal breaches were as follows:—

Between Pidaung and Namti from 7th to 17th September 1927.

Between Alon to Kanzwe from 14th to 19th September 1927.

Between Mogaung and Namti from 3rd to 10th October 1927.

Between Kinu and Tantabin from 10th to 23rd October 1927.

Between Bonchaung and Mawlu from 16th to 22nd October 1927.

East Indian Railway.

The Tari Ghat branch was breached on 1st August 1927 and was repaired the next day. It was again breached on the 3rd August and repaired the same day.

The Raiwala-Rikhikesh Branch was breached in several places on 24th August 1927. Repairs were effected by the 29th August. Further breaches occurred on 9th September and it was not until 21st September that through running could be resumed.

Breaches also occurred on 9th September on the Hardwar-Dehra Dun Branch and were repaired the same day.

Jodhpur Railway.

Considerable floods occurred in Sind in August and September 1927 which caused interruption to traffic and the closing of the Khadro and Jhudc-Branch lines for approximately six weeks.

Owing to the overflowing of the Pichiak Bund the Pipar Bilara Light Railway was seriously breached on 21st August between Bhawi and Bilara.

Madras and Southern Mahratta Railway.

On November 1st, 1927, a cyclone crossed the North East line near Nellore and later crossed the North West line in the neighbourhood of Nandalur. 21 wagons of a goods train capsized at Padugupadu and 11 wagons of another goods tram at Talamanchi. All communication was interrupted between Madras and Tanguturu and serious damage was caused to railway buildings and Signal posts from Kavali to Manubolu. Through running was resumed on November 4th. On the North West line all communication was interrupted beyond Puttur from Madras and from Yerraguntla from Gooty. Very serious delays were caused to trains but through running was not interrupted. Damage was caused to the roofing of station buildings, quarters, goods sheds, etc.

On November 2nd, 1927, a small bridge at mile 402 between Gollaproliv and Durgada on the North East line was damaged by floods rendering the passage of trains impossible. Through running was resumed on November 6th.

North Western Railway.

No serious breaches occurred on the main line but sections of the railway were breached as follows :—

Nushki to Duzdap—

From 22nd May to 23rd May 1927.

„ 16th July to 18th July 1927

„ 11th February to 13th February 1928

„ 12th February to 16th February 1928.

Phagwara-Rahon-Jaijon for three days.

Hyderabad-Badin from 3rd to 13th August 1927.

Kalabagh-Bannu from 25th August to 27th August 1927.

Tank-Girni Road from 25th August to 29th August 1927.

Sibi-Bostan from 30th September to 3rd October 1927.

Khanai-Killa Saifulla from 13th to 15th February 1928

On August 21st, 1927, a cyclonic storm overturned 7 coaches and a goods vehicle of a train on the Larkana-Dodapur section and blocked the line for 30 hours. There was no loss of life or injury to passengers or staff.

South Indian Railway.

On the broad gauge the Shoranur-Nilambar Railway was breached for a length of about 4 telegraph apete on April 26th, 1927, and was restored for traffic on April 27th. Several slips of earth and boulders occurred between Kallar and Runneymede on the Nilgiri Railway on the 8th and 9th February

1928 resulting in a complete cessation of traffic between Mettupalaiyam and Coonoor. The slips were cleared and through running was resumed on February 14th.

A accidents.

84. Accidents.—The following table shows the numbers of passengers, railway servants and other persons killed and injured, apart from accidents in Railway Workshops, in 1926-27 and 1927-28 :—

Cause.	KILLED.		INJURED	
	1926-27.	1927-28.	1926-27.	1927-28.
<i>A.—Passengers.</i>				
(1) In accidents to trains, rolling-stock, permanent way, etc.	16	45	126	104
(2) In accidents caused by movements of trains and railway vehicles exclusive of train accidents.	324	339	1,117	1,046
(8) In accidents on railway premises in vehicles, etc., were not concerned.	7	3	21	29
TOTAL	347	387	1,264	1,179
<i>B.—Railway Servants.</i>				
(1) In accidents to trains, rolling-stock, permanent-way, etc.	25	23	126	166
(2) In accidents caused by movements of trains and mil way vehicles exclusive of train accidents.	319	323	1,253	1,323
(3) In accidents on railway premises in which the movement of trains, vehicles, etc., were not concerned.	46	54	2,204	2,713
TOTAL	390	400	3,583	4,202
<i>C.—Other persons.</i>				
(1) In accidents to trains, rolling-stock, permanent-way, etc.	19	39	35	84
(2) In accidents caused by movements of trains and railway vehicles exclusive of train accidents.	2,107	2,203	793	732
(8) In accidents on railway premises in which the movement of trains, vehicles, etc., were not concerned.	30	41	61	68
TOTAL	2,150	2,283	889	884
GRAND TOTAL	893	3,070	5,786	6,265

85. The number of passengers killed increased by 40 and the number of passengers injured decreased by 85. Passenger train miles increased by 4,635,000 over the previous year. The following statement shows the number of passengers killed and injured on all railways in the last 5 years :—

PASSENGERS.		
		Injured.
1923-24 .	372	1,272
1924-25 .	418	1,312
1925-26 .	377	1,323
1926-27 .	347	1,264
1927-28 .	387	1,179

Accidents in workshops during the year accounted for the death of 24 railway servants and injuries to 6,114.

86. On Class I Railways the number of railway servants killed in accidents which occurred by movements of trains and railway vehicles exclusive of train accidents increased by one and the number injured by 67. The following table analyses the main causes of the accidents :—

Cause	NUMBERS KILLED.		NUMBERS INJURED.	
	1926-27.	1927-28.	1926-27.	1927-28.
1. Misadventure or accidental	203	226	888	935
2. Want of caution or misconduct on the part of the injured person.	98	84	265	267
3. Want of caution or breach of rules, etc., on the part of servants other than the persons injured.	11	2	37	40
4. Defective apparatus or system of working, dangerous places, dangerous conditions of work or want of rules or systems of working.	1	2	4	14
TOTAL	313		1,189	1,256

87. Out of a total of 3,069 persons killed to 1,831 were trespassers and 310 committed suicide,

88. The following statement and the railways during the last two years under the causes.A

fuller statement showing the accidents in greater detail under the separate railways is to be found in Appendix D of Volume II of this report :—

	1926-27	1927-28
1. Running over cattle	10,053	9,684
2. Derailment not involving passenger trains	4,946	4,343
3. Accidents due to failure of couplings and draw gear	2,930	3,368
4. Accidents due to failure of machinery of engines, springs, etc., or faulty working of crew, or other causes	2,211	9,212
6. Bursting of tubes and boilers of engines	604	568
6. Derailment of passenger trains	381	383
7. Broken rails	330	353
8. Collision involving goods trains or goods vehicles	378	254
9. Fires in trains or at stations or bridges	283	245
10. Running over obstructions on the line	320	258
11. Trains running over obstructions or vehicles at level crossings	37	136
12. Flooding of permanent way	132	164
13. Passenger trains running in the wrong direction through points but not derailed	90	115
14. Collisions between light engines	68	89
15. Collisions involving passenger trains	75	67
16. Accidents due to failure of axles	46	60
17. Land slips	44	38
18. Accidents due to failure of tyres or wheels	49	30
19. Accidents due to failure of brake apparatus	19	20
20. Failure of bridges or tunnels	20	15
21. Miscellaneous	447	445
Total	23,463	22,847

The total number of accidents shows a decrease of 616 compared with the previous year inspite of an increase in total train miles of 8.9 million miles.

'Running over cattle' still accounts for the largest number of accidents, 42 per cent, of the whole, followed by 'derailments not involving passenger trains' (19 per cent.) and 'accidents due to failure of couplings and draw bars' (15 per cent.).

* Collisions involving passenger trains show a decrease although passenger train miles increased by over 4½ million miles.

'Fires in trains or at stations or bridges', 'collisions involving goods trains or goods vehicles' and 'bursting of tubes and boilers of engines' show a decrease, but 'broken rails', 'accidents due to failure of axles' and 'collisions between light engines' were rather more numerous. 'Floodings of permanent ways again show an increase.

Cases of "trains run over obstructions or vehicles at level crossings" show a considerable increase, while this is partly due to the increasing number of motor vehicles also to the fact that in the previous year level crossings of shown under this head but also under "trains" line will be noticed that under

89. A short description is given below of the more serious accidents which occurred during the year : —

Level crossing accident in Verka Station yard.—On the 1st October 1927 at 14-10 hours No. 82 down passenger train collided with motor bus No 2180-A, at the level crossing in Verka station yard on the Amritsar-Pathankot section of the North-western Railway. 10 bus passengers were killed and 18 injured. The motor bus was badly smashed and was carried 414 feet on the cowcatcher of the engine to the point where the engine stopped. The accident is reported to have been due to the rash and negligent driving of the driver of the bus.

Deraiment of 30 Down, Mixed on the Bengal and North-Western Railway.—At about 20-30 hours on the 22nd January 1928 whilst 30 Down Mixed was travelling between Haiya Ghat and Kishanpur stations on the Bengal and North-Western Railway an empty road-van attached next to the engine was derailed on Bridge No. 11-A (10 spans of 20 ft. girders) at mile 8/8 and striking the parapet wall of the abutment was thrown against the superstructure of the 3rd class bogie carriage, following immediately behind, which was torn off the undercarriage and completely wrecked. The under-carriage was derailed to the left of the line and the road-van to the right of the line in the direction the train was travelling. The coupling between the road-van and the engine was broken and the engine ran on ahead and was pulled up some 80 ft. beyond the wreck. The remainder of the train remained on the track and was practically undamaged. In this accident eight persons were killed and fifteen injured and the damage to rolling stock is estimated at Rs 10,000. The finding of the Senior Government Inspector was that the accident was due to the Deraiment of an empty road-van between the engine and the heavy bogie passenger stock which caused the breaking of the coupling and the parting of the train.

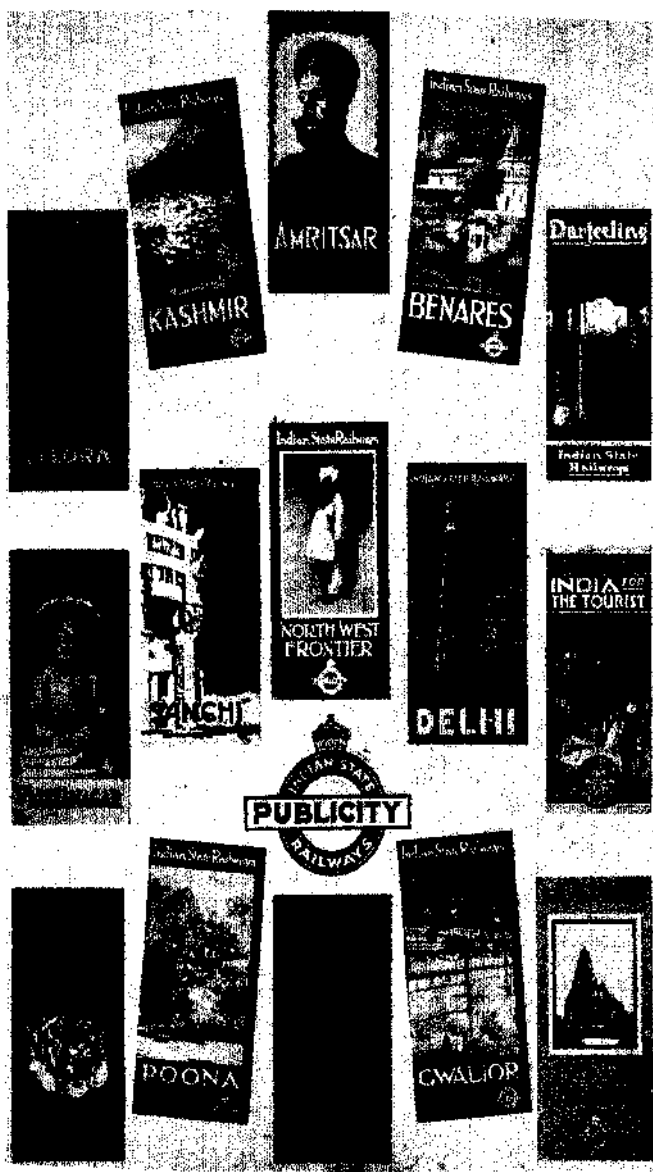
Deraiment of No. 4 Down Mail on the Burma Railways.—At about 3-12 on the morning of 28th January 1928, No. 4 Down Mail while travelling at 30 miles per hour derailed 24 feet short of Bridge No. 161 at mile 110/1 on the main line of the Burma Railways system, due to the malicious removal of fishplates and bolts by a person or persons unknown. The engine tender and three third class passenger coaches capsized into the nullah bed and were entirely wrecked. Two brakevans following the tender got across the gap and were partially destroyed, while the remaining vehicles pulled up unharmed just short of the bridge. The engine crew and twenty-three third class passengers were killed outright, fourteen more died in hospital as a result of extensive scalds and shock. The guard and twenty third class passengers suffered from slight injuries and shock.

The up and down lines were both interrupted by the wreckage and the total damage was about one lakh of rupees. The injured were promptly evacuated and the up line was cleared by 17-55 the same day, but the down line was blocked till the 21st February.

Four persons who were suspected of train wrecking were sent up for trial. One of them who confessed was convicted and sentenced to death and the other three were acquitted by the Sessions Judge, Pegu. The condemned prisoner was however subsequently acquitted on appeal to the High Court.

Level crossing accident at Henzada Shore (Burma Railways).—On March 12th, 1928, at about 18-15 hours Down Light Engine No. F. 84, travelling tender foremost, was approaching the level crossing near the home signal at Henzada Shore (Burma Railways), when a motor lorry loaded with rice, attempted to cross in front of it. The lorry partially 'stalled' across the line and failing to get clear in time, was smashed and carried 100 feet along the track before the engine could be stopped. Of the five people sitting in the front seat two were killed outright, two died in hospital and one received serious injuries. A swth mangrss seated outside on the rice bags, but he saw the engine approving i m p e d dear. The driver of the

CENTRAL PUBLICITY BUREAU, RAILWAY BOARD



Samples of Pamphlets produced

lorry, who subsequently died as a result of his injuries, was considered primarily to blame for rash and negligent driving

Level crossing accident between Thayagon and Okjo on the Burma Railways.—On 18th March 1928, at about 1-10 hours a light engine proceeding towards Rangoon at 20 miles per hour collided with a motor bus on the level crossing at mile 103/22 P between Thayagon and Okpo on the main line of the Burma Railways. Both gates were open and the engine hit the back of the bus killing three of its passengers and injuring eight others. The gate-keeper was tried and convicted under section 101 of the Indian Railways Act (1890) and sentenced to rigorous imprisonment for one year.

90. Safety First—The Central Publicity Bureau completed a film on Safety First during the year and copies of the film were distributed to Railways and displayed widely by the railways' travelling cinemas. A "Safety First" pamphlet applicable to the conditions on Indian railways generally is under preparation by the Central Publicity Bureau assisted by the Publicity Officers of railways. When the pamphlet is ready, vernacular translations of the different sections relating to different classes of staff will be published in the shape of small brochures.

The following is a brief account of Safety First measures on some of the railways.—

Bengal Nagpvt Railway—The principles of Safety First have been impressed on the staff by photographs and articles in the Railway Magazine and by special headings in the Weekly Gazette. Safety First appliances in accordance with the Factory Act are provided in the workshops

Eastern Bengal Railway—The measures taken to promote Safety First propaganda in the workshops were two-fold, namely, the provision of Safety First appliances in accordance with the Factory Act and secondly instructions to staff. In the way of appliances, protection guards to machinery, under-slung hangers or troughs for beltings, goggles for men working in electric or acetylene welding, overcoats and head caps for men working with spray painters and caution plates for high tension electric wires have been provided where necessary. As regards the second, the supervising staff are required to instruct those employed under them in the avoidance of accidents, and at all times to encourage habits of thought and consideration which will prevent injuries to themselves or to their fellow workers. Warning notices are frequently issued drawing attention to the possibility of accident if rivet heads and chippings are allowed to fly in the direction where other men are working. Only authorised beltmen are permitted to attend to belting. The staff are prohibited from doing any work where high tension wires exist, without a written guarantee from the electrical representative that the current has been cut off, from that particular line.

Great Indian Peninsula Railway.—The Safety First campaign was continued with the aid of the booklets published in the previous year. The Safety First film consisting of three parts, 3,690 feet altogether, was exhibited in the cinema shows given at different stations. Local bodies are taking an interest in the Safety First propaganda and the railway has been asked to supply copies of the booklet for the use of municipal school teachers.

North-Western Railway.—In order to impress on the public mind the importance of Safety First a number of sketches on the subject were prepared and exhibited in the North-Western Railway Demonstration Car. The Safety First film referred to above was also shown demonstrating forcibly the precautions to be observed by passengers while travelling by railway and the serious consequences if those precautions are ignored. The Railway Magazine was also used as a medium for propaganda on the subject and several illustrative sketches were published pointing out the moral. Appropriate slides also were shown in the cinema displays.

91. Publicity.—The year 1927 marked a very considerable advance in the Publicity activities of Railways. The Central Publicity Bureau of the Railway

d on 1st April 1927, a Chief

Publicity Officer was appointed and provided with an Assistant and a **small** clerical staff. The office was located in Victoria Terminus, Bombay, **but** was transferred to Delhi in March 1928.

The first three months were spent in organising and in working **out** schemes for the development of existing Publicity business and in formulating a programme for progress in new fields. Among some of the principal lines upon which it was decided to concentrate attention are:—

- Cinema film production and display;
- Poster production and display;
- Pamphlet production and display;
- Publication of an Indian State Railways Magazine;
- Demonstration trains;
- Upper and lower class special excursion trains;
- Press propaganda in India;
- Press propaganda in Europe, America and other parts of the world;
- Reciprocal publicity with the leading railways of the world

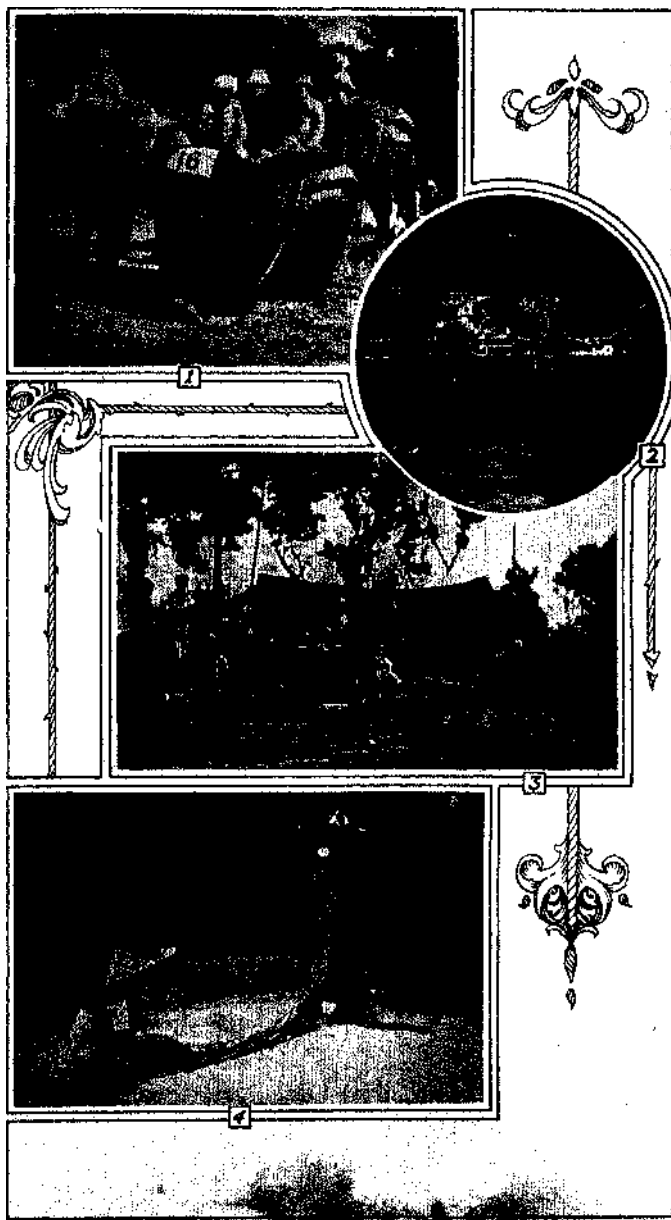
The most important of these activities is undoubtedly the cinema film production and display as 80 per cent, of this is directed towards encouraging railway travelling, primary industries and the welfare of agriculturists and villagers. It must be remembered in this connection that owing to the very large proportion of illiterate people in India, the cinema is the outstanding method of conveying information to the masses. Each State Railway is now provided with a travelling cinema projection outfit which moves continuously from place to place over the system and by this means the propaganda films issued from the Central Publicity Bureau are widely circulated. That these displays, which are free, are fully appreciated is proved by the patronage accorded to them. For the six months ending December 1927 with a total of 396 displays, an attendance of 7½ lakhs of spectators was registered. Progressive census shows that this figure is steadily mounting. The work in this branch of the Publicity work has so much increased that the appointment of a special Assistant became essential, and has been created.

A large number of posters by leading artists has been prepared for display in India and in the principal countries of the world focussing attention on the attractions which India has to offer to travellers and tourists. Following up these posters many attractive pamphlets have been written up by first class journalists and are now available in the leading Information and Travel Bureaux in India, Europe, America and other countries.

The production of the " Indian State Railways Magazine " commenced in the month of October 1927, and from the outset proved extremely popular. This publication is intended to be partly a publicity medium and partly to encourage the railwaymen of India to take a wider outlook on railway and general affairs; it contains a variety of articles on travel, archaeology, shikar, transportation, welfare, fiction and natural history.

Upper and third class conducted tours and bazar specials have been run by several of the railways with considerable success and the extension of these is contemplated in the near future.

An intensive advertising campaign has been carried out in Great **Britain** and from the number of enquiries received regarding tours in India there can be no doubt that it has proved successful. This publicity was **carried** out jointly with the Peninsular and Oriental Company, who report that there has been an increase of 300 per cent, in their cold weather short period passenger traffic to India. Shortly after the inauguration **of the Central** Publicity Bureau, the need was felt for a representative in **England** for the purpose of giving information and advice to potential travellers at Home and to handle enquiries arising out of **cross propaganda** A Publicity Officer **was appointed and temporary offices and in the West end of London in** which a State **Raily Burears spened**. There is no doubt that this



1. Pigeonhole in India
2. Nainital

departure has entirely justified itself and it has been decided that in 1929 a similar appointment will be created and an office opened in New York.

A brief account of the Publicity work on the principal railways is given below :--

Assam Bengal Railway.

A small pamphlet with photographs illustrating the handling of tea on the Railway at the jetties was printed and largely distributed to tea garden managers and tea agency houses in England and India to endeavour to show the advantages of shipping of tea from Assam direct to the United Kingdom.

Bengal-Nagpur Railway.

In addition to press advertisements, posters and pamphlets were issued during the year and others are under preparation. A film of the Rath Jatra Festival at Puri in 1927 has been shown by the Cinema Car at various stations and also at Cinema theatres throughout the country. In connection with the visit of British sea-planes to Rambha on the Chilka lakes in January 1925 pamphlets in the vernaculars were distributed in the surrounding districts informing people of the proposed visit of the sea-planes and of the special reduced return fares to Rambha. On the occasion of the Mahadeo Mela in the Central Provinces vernacular pamphlets were distributed advertising intending pilgrims of the conveniences provided by the Railway and of the reduction in fares for travelling to the Mela

Bombay, Baroda and Central India Railway

Two Christmas Tourist trains for residents in India, one for first class passengers and the other for second and third class passengers were run from Bombay; both trains were widely advertised and proved very successful.

Early in 1928 a Hospital fete on a large scale extending for a fortnight took place in Bombay. An attractive stall was provided by the Railway and was devoted to advertising the Electric Suburban Service and the advantages of living in the country. Cinema performances were given every 1 hour or even more frequently and the stall attracted much attention. An offer of free-even tickets for a year to purchasers of land adjoining the Railway met with a satisfactory response.

Close touch is maintained with the Indian Press and a large number of paragraphs and photographs have been published drawing attention to the facilities offered by this Railway. The vernacular papers are also assisting in the matter. 40,000 Gujarati pamphlets on the pilgrim centre of Dakor have been printed and circulated with the assistance of Government. 20,000 Gujarati and 20,000 Hindi pamphlets on Muttra have also been distributed. A large number of pictorial posters have been prepared dealing with the following subjects:—Muttra, the Peninsular and Oriental Punjab Express, Week-end concession tickets, Tourist resorts, etc. Advertisement cards are printed at frequent intervals in the railway press and distributed widely by post and hand. A number of postal circulars have been issued from time to time drawing attention to the numerous tourist centres and the advantages of a holiday in hill stations reached by this Railway. A number of enlarged photographs of places of interest on the Railway have been supplied to the American Express Company for display in their offices in America. About 5,000 packs of playing cards advertising the Railway have been designed and are on sale on trains and at bookstalls, clubs and hotels

Eastern Bengal Railway

In addition to presadvertisements several posters and pamphlets were issued during the year and others are under consideration. A broad gauge cinema car was built and put into service in August 1927 and more than 150 exhibitions were given at different

An excursion train at cheap fares was run in conjunction with the Darjeeling-Himalayan Railway from Sealdah to Kurseorlg and Darjeeling in June 1927 for upper class passengers and their servants. All the accom*modation in the tram was fully booked up some days before the running of the train. 146 upper class passengers were carried and the financial results were satisfactory. An account of a 3rd class conducted excursion and two Bazar Specials run on this railway is given in a separate paragraph.

East Indian Railway.

An intensive publicity campaign was carried on during the year by means of advertisements in the Press, pamphlets and folders, the travelling Cinema Car, handbills and pictorial menu cards

The Poultry demonstration car visited 90 stations, where suitable lectures illustrated by lantern slides or cinema films were delivered and literature distributed

Great Indian Peninsula Railway

A reprint was issued of the Imperial Indian Mail booklet and of the vernacular leaflets dealing with Muttra, Nasik and Pandharpur— A booklet on Paehmari is now in the press and one on Mahableshwar is under preparation A booklet was also issued on the ' Punjab Limited \ Special posters were issued in connection with 5-H-week fete, 3rd Class Excursion Tours, the Punjab Limited, Jnnnerdeo Fair and Wedding Specials The Easter Holiday concessions were widely advertised, posters and hand bills being issued in English and three vernaculars.

The shows by the Cinema Car continued to be popular and the attendance has been very satisfactory Displays were given at the following agricultural fairs Burman (12 miles from Kareli station), Palwal, Muttra, Ahmadnagar and Kurduwadi. Each fair lasted about a week and films of agricultural interest were shown each night together with other films Audiences numbered about 2,000 at each show. The Information Bureau continues to increase in popularity and a large number of over-seas tourists are entrusting their travel arrangements to it Complete travel arrangements including reservation of hotel accommodation and sight seeing arrangements were made for several parties all of whom expressed their satisfaction for the help received.

Jodhpur Railway.

Notices were published in newspapers and posters were distributed in connection with the following fairs held on places adjacent to this railway :—

Kamdeo Fair at Ilunicha near Phalodi station; Cattle Fair at Parbatsar near Makrana station, Pir Pithoro Fair, Oderolal Fair near Khesano station and Chaitri Fair near Tilwara station.

North-Western Railway.

The Cinema Car visited 217 stations on the line, the total number of visitors being about 582,000. The films were obtained either through the Chief Publicity Officer or hired from film companies and consisted of educational, dramatic and comic films. Slides on Safety First and those giving publicity to :ailway concessions, etc , were also shown besides propaganda slides which included pictures of famous shrines.

An illustrated pamphlet in Gurmukhi was prepared to give publicity to the famous Sikh shrine at Nankana Sahab and a large number of copies were widely distributed among the Sikh community. Some of the Sikh papers reproduced the whole pamphlet in their issues. That this pamphlet served its purpose is shown by the fact that the number of pilgrims who travelled to Nankana Sahab by rail was 65,67 as in 1927 against 45,730 in 1926 and 55,000 in 1925. These figures as was of pilgnims who travelled on foot or by motor lorries

NORTH-WESTERN RAILWAY



Visitors to the Demonstration Train

Two illustrated Folders entitled " Through the Khyber Pass " and " The Queen of our Hill stations (Simla)" were also widely distributed Posters were issued during the year advertising Nankana Sahab, the Demonstration Train, the Punjab Limited, the Lahore-Lueknow Express, Lahore Christmas Week and the Khyber Pass During the year under review hundreds of thousands of handbills were distributed in the areas concerned on the occasion of the opening of new lines or branch booking offices the introduction of new train services and the granting of holiday concessions

South Indian Railway.

A Publicity Branch was inaugurated on the 1st March 1927 under a whole time officer and considerable progress was made during the year in all branches of publicity work Stimulation of pilgrim traffic especially engaged its attention An advertising campaign was conducted with the object of attracting pilgrims to 12 selected festivals Pamphlets on the more important pilgrim centres, " Conjeeveram and Tiruchendur," " Rameswaram and Chidambaram " and " Trichmopoly and Srirangam " were published in English, Hindi, Tamil and Telugu

The concession fares granted to the holiday resorts in the south were advertised with good results Black and white posters and booklets were issued to advertise cheap return fares to the Nilgiris and Tenkasi during the Congress and Christmas and Easter seasons Illustrated pamphlets on the Nilgiri and Kodai Hills were widely distributed abroad as well as in India

Special publicity work was organised during the Madras Congress week of 1927, a special enquiry office being opened during the period and a liberal distribution of propaganda literature being made The advertising of the special trains and cheap return fares contributed in no small measure to the large returns received during the period Enquiry offices of this nature were also opened during large festivals in or near temples and were found to be of great assistance to pilgrims.

92. Demonstration Trains.—An account was given in last year's report of the Eastern Bengal Railway Demonstration Train This was the first Demonstration Tram used in India The tram was again run for one month during the year under review from February 22nd to March 23rd, 1928 Several improvements were carried out in the light of the experience gained in the previous year and both the general public and the participating departments of the Government of Bengal were satisfied with the usefulness of the tram. Sufficient charges were recovered from the participating departments to cover the running expenses

The experiment of the Eastern Bengal Railway was followed by the introduction of a similar train on the North-Western Railway This train was arranged in collaboration with the Punjab Government and the following departments participated •—

Agriculture, Veterinary, Co-operative Societies, Public Health and Industries.

The aim of the train was to educate and impart knowledge of modern productive methods to the rural community of the Punjab Six third class bogies were converted into Demonstration cars in which proper exhibits relating to the activities of each department were shown A separate car was furnished by the North, western Railway and contained exhibits pertaining to railway activities The train toured throughout the Punjab from December 2nd 1927; to 1928, visiting 69 important rural centres and travelling as 500 miles The success of the tour surpassed all expectation subspinion was unanimous that the train served a

93.E Bazar tied to	Bengal Railway in October 1927 gers was	Third Class Conducted Excursion And a c t 3rd oth arranged	Piducted excursion limi- on the Goalundo Section
---	--	---	---

of the Eastern Bengal Railway to Calcutta. The average distance of the stations to Calcutta was 128 miles and a lump sum fare of Rs. 4 per passenger was charged. This fare included 3rd class conveyance by special train to Calcutta and back, the cost of conveyances in Calcutta, gate money at the principal places of interest, Puja fee at Kalighat, a free cinema show by the railway cinema and three meals. Out of the 639 passengers, 619 had never visited Calcutta before and 130 had never performed a railway journey. The value of the excursion lay in publicity and good will secured rather than the immediate financial gain.

In January 1928 a similar excursion limited to 100 passengers was run from Calcutta to Kamakhya, a place of Hindu pilgrimage reached *vid* Amingaon. No special train was arranged on this occasion, the pilgrims being carried in two bogie carriages attached to the Assam Mail. The demand for tickets exceeded the supply and the excursion was most successful in every way.

Another experiment undertaken by the Eastern Bengal Railway was the running of two Trade or Bazar Specials, the Pujah Bazar Special in September 1927, and the Winter Bazar Special in December 1927. Each train consisted of seven third class carriages specially adapted for use as travelling shops, a catering car, an electric charging van and a cinema car. Space in the travelling shops was let to firms who did profitable business in the course of the 30 days during which each train toured over the Broad Gauge system. On the first occasion some difficulty was experienced in letting out the available accommodation, such a train being an innovation and looked upon somewhat doubtfully by the trade. The success achieved, however, was so pronounced that on the second occasion the demand for space was considerably more than the supply. Although direct profit was not the aim, yet in framing the scale of charges payable by firms for space in the train, care was taken to keep the rates high enough to obviate any justifiable complaint from local traders as to preferential treatment being given to the firms participating in the train.

94. Anti-Malarial Work.—In many cases there are opportunities for intensive malarial work in railway settlements and the Railway Board have recently referred the whole question for consideration by the Standing Committee of Railway Medical Officers.

Eastern Bengal Railway.—This railway has submitted a detailed scheme for the reorganisation of their medical service and in connection with this scheme a special post of Malariologist has been created. Special Malaria Medical Officers have been posted at Calcutta, Khulna, Paksey and Saidpur. Anti-malarial measures were taken during the year based on previous experience as well as on the advice of experts from the Tropical School of Medicine, Calcutta. A special investigation of the larvae inhabiting every tank, stream and burrow pit within the railway area was carried out on the Saidpur District and malarial diagrams of all station yards were prepared by the District Medical Officer, Saidpur, who established the fact that a giga tribe of mosquito formerly supposed to be entirely a hill breeder could occasionally be found in the plains. The larvae identified by him were confirmed at the Tropical School of Medicine at Calcutta. In consequence of the experience gained from the special investigation on the Saidpur District and with the introduction of intensive anti-malarial measures all over the Railway under the supervision of the Malariologist, it is expected that there will be a substantial reduction in sickness among the staff from malaria during the next year.

Assam Bengal Railway.—Anti-Malarial work and Campaign against Kala Azar was continued by the Medical Department and the results obtained were satisfactory. The portion of the railway the railway situated in Upper Assam, especially the Lumding district still the bad name for unhealthiness with the staff. An X-Ray apparatus was called is the cottage Hospital at Chittagong and has treat usefulness since created.

NORTH-WESTERN RAILWAY



Interior of Demonstration Train (Public Health Gar)

Bengal-Nagpur Railway.—A post of a Malariologist was created from February 1st, 1928, and measures have been taken to combat malaria in those areas where its incidence is greatest. In the Raipur-Vizianagram Construction special attention has been paid from the beginning to the southern stretch from the Madras frontier to Parvatipuram owing to the virulent type of malaria which was prevalent there, and an anti-malarial campaign was organised to give protection to the staff and labour working on the construction. The efforts to combat this disease have met with great success and the condition of this area remained good during the year. In the Saranda tunnel works although the results were not so good as in 1926-27 the amount of malaria was not sufficient to hamper the work of the construction. At Dangoaposi station the anti-malarial drains were almost completely obliterated when the yard was washed out and the line breached in August 1927. There was a short outbreak of malaria in consequence but the drains have since been repaired and the oiling resumed.

Bombay, Baroda and Central India Railway -Larval destruction has been carried out as far as possible on the Bombay section and though the results are not entirely satisfactory the number of admissions for malaria in Grant Road and Parel Dispensaries were slightly less for the year. It is realised, however, that the conversion of all malarial places into non-malarial places can be effected only by a complete metamorphosis in the character of the site which can only occur in the course of the next decade. During inspection rounds 40 female anophelines were caught in gangmen's chawls between Parel and Santa Cruz, out of which 31 were *A. Subpictus*, 5 were *A. Stephensi*, 3 were *A. Vagus* and 1 was *A. Culicifacies*. The upper subordinates would not tolerate the domiciliary visits by an outside inspector although asked to do so by the Medical Officer in the interests of anti-malarial work, hence a systematic inspection of the quarters could not be made. During the dry season the staff was only sufficient to do the fringe work of the whole area from Colaba to Santa Cruz but in the wet season the area could hardly be covered once a fortnight. From November 1927 to March 1928 about 3,000 cubic feet of hollows and depressions were filled in by the Medical Department during spare hours. 2½ cwt. of Paris Green and 3 tons of crude oil were used as larvicides during the year.

Great Indian Peninsula Railway.—Anti-malarial measures have been continued as in former years. These consist of filling in or draining swamps and collections of water where malaria carrying mosquitoes have been discovered and spraying with oil such collections of water which could not otherwise be dealt with. At important centres there are inspectors charged with the duty of searching out actual and likely breeding places and action is being taken to prevent the spread of infection by mosquitoes. The measures are carried out in close co operation with the local authorities.

Madras and Southern Mahratta Railway —Malaria while not so severe as on some of the other Railways, accounts for a great deal of time lost in consequence of illness. It is particularly bad in the Guntakal District and between Hubli and Collem, causing at times definite difficulty in carrying on the running of trains on the Ghat section between Castle Rock and Collem. It is intended during the coming year to depute a member of the Medical Department "to study the most recent methods of mosquito control at Kasauli with a view to undertaking if possible more efficient methods of malaria prevention in some worst affected areas.

His Majesty's Guaranteed State Railways.—In the year 1927-28 the incidence of malaria was less than usual and the incidence of this though malaria still causes more sickness than any other single disease. In addition to the customary measures taken to prevent and minimise the disease copies of the book entitled "Malaria" by Knowles and R. Senior White were distributed among members of the Medical

places having been filled with ash in

drains and swamps

which it was not possible to fill with ashes, mosquito larvae-eating fish were introduced. For the local type of malaria cinchona febrifuge has been found extremely useful and during the year 252 lbs. of this substance and 40 lbs. of quinine sulphate was used. Intra-muscular or intervenous injection of quinine was found to be most efficacious and safe and a new treatment has recently been started by a substance named plasmoquin.

North-Western Railway.— Pools and drains were oiled and depressions where water lodged were filled up at a number of stations. No regular campaign of anti-malarial measures has yet been in operation but it is proposed to institute a campaign in the near future when the necessary staff have been secured.

95. Distinguished Visitors.—During the year under review India was honoured by the visit of Their Majesties the King and Queen of Afghanistan on their way to Europe, and by a short sojourn in Calcutta just after Christmas by His Highness the Prime Minister of Nepal. Their Afghan Majesties travelled from Chaman to Karachi by rail in a train specially built for the purpose in record time by the North-Western Railway, and thence to Bombay by sea.

In addition to these distinguished visitors the Railway Administrations had also to make arrangements for the long and extensive tours of the Royal Commission on Agriculture and later in the year for the first visit of the Indian Statutory Commission. Every endeavour was made to provide for the Commissioners as much comfort and convenience during their journey as possible, and the Agricultural Commission in a special letter to the Railway Board expressed their high appreciation of the assistance rendered by the railways in making their tour a success.

NORTH-WESTERN RAILWAY



Drawing Room of His Majesty the King of Afghanistan's Train

APPENDIX A.

List showing Railways in India alphabetically arranged under each gauge according to system of working.

[NOTE.—The railways under construction or sanctioned for construction on the 31st March 1928, are shown in italics.]

Name of Railway.

Working or Constructing Agency.

I.—STATE LINES WORKED BY THE STATE.

5' 6" gauge.

Eastern Bengal	Eastern Bengal Railway
East Indian	East Indian Railway.
Great Indian Peninsula	Great Indian Peninsula Railway.
North "Western	North Western Railway.
South Bihar*	East Indian Railway.

3' 3³/₈ gauge.

Aden	Aden Railway.
Cawnpore-Burhwal Link	East Indian Railway.
Eastern Bengal	Eastern Bengal Railway.

2' 6" gauge.

Eastern Bengal	} Eastern Bengal Railway.
Kalka-Simla	
Kangra Valley	} North Western Railway-
Kohat-Thal	
Trans-Indus (Kalabagh-Bannu)	
Zhoh Valley (Khanai-Ilindubagh)	
Killa Saifulla	

2' 0" gauge.

Dera Ismail Khan-Tank Decauville	North Western Railway.
Jorhat (Provincial)	MaoNeill & Co.

II.—STATE LINES WORKED BY COMPANIES.

5' 6" gauge.

Bengal-Nagpur	Bengal Nagpur Railway Company.
Bezwada Extension	Nizam's Guaranteed State Railways Company.
Bombay, Baroda and Central India	Bombay, Baroda and Central India Railway Company.
Kolar Gold -elds	} Madras and Southern Mahratta Railway Company.
Madras and Southern Mahratta	
South Indian	South Indian Railway Company

3' 3³/₈ gauge.

Alnavar-Dandeli (Provincial)	Madras and Southern Mahratta Railway Company.
Alon-Ye-U	Burma Railways Company.
Assam-Bengal	Assam Bengal Railway Company.
Bangalore-Harihar	Madras and Southern Mahratta Railway Company.
Bombay, Baroda and Central India	Bombay, Baroda and Central India Railway Company.
Burma	} Burma Railways Company.
Burma Extensions	
Dhone-Kurnool	Madras and Southern Mahratta Railway Company.
Dronachellam (Dhone) Kurnool Extension	Nizam's Guaranteed State Railways Company.
Hindupur (Yesvantpur-Mysore Frontier),	Madras and Southern Mahratta Railway Company.
Jodhpur-Hyderabad (British Section).†	Jodhpur Durbar.

* Although pleased line, it is, for

under the "State lines worked

† The Indian State Section of this railway an integral part of the Jodhpur Railway
This line is worked by the administration of the Jaipur Railway

Name of Railway.

Working or Constructing Agency.

II.—STATE LINES WORKED BY COMPANIES—*concl'd.*

3 $3\frac{3}{8}$ gauge— <i>conoid</i> .	
Lucknow-Bareilly	Rohilkhund and Kumaon Railway Company.
Madras and Southern Mahratta	Madras and Southern Mahratta Railway Company.
Moulmein-Ye	Burma Railways Company.
Nilgiri	South Indian Railway Company.
Palampur-Deesa.*	Bombay, Baroda and Central India Railway Company.
Pegu-Kayan	} Burma Railways Company.
Pyinmami-Taungdwingyi	
To <i>unydwingyi-Kyaukpadauny</i>	} South Indian Railway Company.
South Indian	
Southern Shan States	Burma Railways Company.
Travancore (British Section)	} South Indian Railway Company.
Travancore (Indian State Section).t	
Tirhoot	Bengal and North Western Railway Company.
T 6" gauge.	
Broach-Jambusar	Bombay, Baroda and Central India Railway Company.
Morappur-Hosur	South Indian Railway Company.
Purulia-Ranchi	} Bengal Nagpur Railway Company.
Raipur-Dhamtari	
Satpura	} South Indian Railway Company.
Tirupattur-Krishnagiri	
2 0" gauge.	
Tumsar-Tirodi Light	Bengal Nagpur Railway Company.

III.—BRANCH LINE COMPANIES' RAILWAYS UNDER GUARANTEE TERMS.

(A) WORKED BY THE BRANCH LINE COMPANY.

2' 6" gauge.	
Ahmadpur-Katwa	Ahmadpur-Katwa Railway Company.
Bankura-Damoodar River	Bankura-Damoodar River Railway Company.
Burdwan-Katwa	Burdwan-Katwa Railway Company.
Futwah-Islampur	Futwah-Islampur Railway Company.
Kalighat-Falta	Kalighat-Falta Railway Company.

(B) WORKED BY THE MAIN LINE.

5' 8" gauge.	
Hardwar-Dehra	East Indian Railway.
3' $3\frac{3}{8}$ gauge.	
Chaparmukh-Silghat†	} Assam-Bengal Railway Company.
Katakhal-Lalabazar‡	
2' 6" gauge.	
Dasghara-Jamalpurgunj	Bengal Provincial Railway Company.

IV.—BRANCH LINE COMPANIES' RAILWAYS UNDER REBATE TERMS WORKED BY THE ICMN LINE.

5 6" gauge.	
Amritsar-Patti	} North Western Railway.
Hoshiarpur-Doab (Jullundur Mukerian).	

* This line is owned jointly by MAnpur Durbar

† Although for convenience other railways, this line is the Property of

Name of Railway.	Working or Constructing Agency.
IV.—BRANCH LINE COMPANIES' RAILWAYS UNDER REBATE TERMS WORKED BY THE MAIN LINE— <i>contd.</i>	
5' 6" gauge—condd.	
Hoahiarpur-Doab (Phagwara-Rahon)	} North Western Railway.
Mandra-Bhaun	
Sara-Sirajganj	} Eastern Bengal Railway.
Sialkot-Narowal	
Southern Punjab (Main Line)	} North Western Railway.
Southern Punjab (Jullundur-Doab)	
Southern Punjab (Ludhiana Extension).	
Southern Punjab (Sutlej Valley)	
Tapti Valley.	Bombay, Baroda and Central India Railway Company.
3' $\frac{3}{8}$" gauge.	
Ahmedabad-Parantij	Bombay, Baroda and Central India Railway Company.
2' 6" gauge.	
Champaner-Shivrajpur-Pani Light	Bombay, Baroda and Central India Railway Company.
Dhond-Baramati	} Great Indian Peninsula Railway.
Ellichpur-Yeotmal	
Godhra-Lunavada	Bombay, Baroda and Central India Railway Company.
Jacobabad-Kashmor	North Western Railway.
Khulna-Bagerhat	Eastern Bengal Railway.
Larkana-Jacobabad	North Western Railway.
Mayurbhanj	Bengal Nagpur Railway Company.
Nadiad-Kapadvanj	Bombay, Baroda and Central India Railway Company.
Pachora-Jamner	} Great Indian Peninsula Railway.
Pulgaon-Arvi	
2' 0" gauge.	
Darjeeling-Himalayan Extensions	Darjeeling-Himalayan Railway Company.
V.—BRANCH LINE COMPANIES' RAILWAYS UNDER GUARANTEE AND REBATE TERMS.	
3' $\frac{3}{8}$" gauge.	
Jamnagar-Dwarkat	Jainnagar and Dwarka Railway Company.
Mymensingh-Bhairab Bazar	Assam-Bengal Railway Company.
VI.—COMPANIES' LINES SUBSIDIZED BY THE GOVERNMENT OF INDIA.	
3' $\frac{3}{8}$" gauge.	
Bengal and North Western*	Bengal and North-Western Railway Company,
	bengal Dooars Railway Company.
	: Jodhpur Durbar.
	Rohilkund and Eumaon Railway Company.
Bengal-Dooars Extensions*	
	Band Railway Company.
	Dehri Rolitas Light Railway Company.
	Shahdara (Delhi) Saharanpur Light Railway

(Delhi) Saharanpur
and only from Government
Shahdara, Saharanpur, and by the Durbar.

Name of Railway.	Working or Constructing Agency.
VII.—COMPANIES' LINES SUBSIDIZED BY LOCAL GOVERNMENTS.	
3' 3 ³ / ₈ " gauge. Dibru-Sadiya	Assam Railways and Trading Company.
2' 0" gauge. Darjeeling-Himalayan	Daijeehng-Himalayan Railway Company.
VIII.—UNASSISTED COMPANIES' LINES.	
3 3 ³ / ₈ " gauge. Ledo and Tikak-Margherita Colliery.	Assam Railways and Trading Company.
2 6" gauge. Bengal Provincial Jess-ore-Jhenidah Singn-Panehnoi River	Bengal Provincial Railway Company. Jhenidah Railway Syndicate. Smgri Panchnoi River Tramway Company.
2' 0" gauge. Jagadhri Light Kulasekarapatnam Light . Tirupatt-Tiruchanur Light Tuvellore Light	Jagadhri Light Railway Company. East India Distilleries and Sugar Factories Limited of Madras. Tirupati-Tiruchanur Light Railway Company. T. N. Chetty & Sons, Madras.
IX—DISTRICT BOARD LINES.	
5 6" gauge. Suramangalam-Salem Tennli-Repalle .	South Indian Railway Company. Madras and Southern Mahratta Railway Company.
3' 3 ³ / ₈ " gauge. Bezwa-da-Masulipatam Podanur-Pollaehi Tanjore District Board Tinnevely-Tirchendur	Madras and Southern Mahratta Railway Company. } South Indian Railway Company.
X.—COMPANIES' LINES SUBSIDIZED BY DISTRICT BOARD.	
3' 3 ³ / ₈ " gauge. Bengal Dooars .	Bengal Dooars Railway Company.
2' 6" gauge. Arrah-Sasaam Light Baraset-Basirhat Light Bukhtiarpur-Bihar Light Tezapore-Balipara Light	Arrah-Sasaram Light Railway Company. Baraset-Basirhat Light Railway Company. Bukhtiarpur Bihar Light Railway Company. Tezapore-Balipara Light Railway Company.
2' 0" gauge. Howrah-Amta Light Howrah-Sheakhala Light .	Howrah-Amta Light Railway Company. Howrah-Sheakhala Light Railway Company.
XL—INDIAN STATE LINES WORKED BY INDIAN STATES..	
3' 3 ³ / ₈ " gauge. Bhavnagar State . . Bikaner State . . . Gondal Jetalsar-Rajkot Jodhpur .	Bhavnagar Durbar. Bikaner Durbar.

Name of Railway.

Working of Constructing Agency.

XI.—INDIAN STATE LINES WORK-
ED BY INDIAN STATES—
concl.

3' 3³/₈ " gauge—*concl.*

unagad State	Junagad Durbar,
Khijadiya-Dhan	tiondal Railway.
Morvi	Morvi Durbar.
Mysore	Mysore Durbar.
Porbandar State	Poibandar Durbar.
Udaipur-Ohitorgarh	Mewar Durbar.

2 6 gauge.

Bodeli-Chhota Udaipur	Baroda Durbar,
Cutch State	Cutch Durbar.
Dholpur-Bari	Dholpur Durbar.
Gaekwar's Baroda State	Baroda Durbar.
Kolar District	Mysore Duibar.
Mohari-Barauli	Dholpur Durbar

2 0 gauge.

(xwalior Light	Gwalioi Durbar.
Pipar-Bilara Light	Jodhpui Durbar.
Tarikere-Narasimharajapura Light	MvMue Duibar.

XIJ —INDIAN STATE LINES WORK-
ED BY THE MAIN LINE.

5 6" gauge.

<i>Ilahawalvayar-Cholistan</i> (Indian. State Section).	} North Western Railway.
Bhopal Itarsi (Indian State Section).	
Bhopal-Ujjain	} Great Indian Peninsula Railway.
Bina-Goonna-Baran	
Jammu and Kashmir (Indian State Section),†	} North Western Railway.
Jind-Panipat (Indian State Sec- tion).‡	
Karepalli-Kothagudium	} Nizam's Guaianteed State Railways Coin- pain.
Kazipet-Balharshah	
Khanpur-Chachran	} Noith Western Railway.
Ludhiana-Dhuri-Jakhal	
Nagda-Ujjain	} Bombay, Baioda and Central India Railway Company.
Petlad-Cambav (Anand-Tarapur Sec- tion).	
Petlad-Cambay (Tarapur-Cambay Section).	} North Western Railway.
Rajpura-Bhatinda	
Sirhind-Rupar	

33³/₈ " gauge.

Cooch Behar State	Eastern Bengal Railway.
Dhrangadra	} Bombay, Baroda and Central India Railway Company.
Gaekwar's Mehsana	
Hingoli Branch	Nizam's Guaianteed State Railways Com- pany.
Jaipur State	Bombay, Baroda and Central India Railway Company.
Jamnagar	Jamnagar and Dwarka Railway Company.
Kolhapur State	Madras and Southern Mahratta Railway Company.
Okhamandal	Jamnagar and Dwarka Railway Company.
Palanpur-Deesa. §	Bombay, Baroda and Central India Railway Company.
Parbhani to Purli	Nizam's Guaranteed State Railways Com- pany.

+ The British section of this railway forms on inestral of the North Western Railway

‡ The section of this railway in B r i t i s h t e r r i t o r y forms an integral part of, the North Western

§ This line is owned jointly by and the Palnpur Durbar.

Name of Railway.	Working or Constructing Agency.
XII.—INDIAN STATE LINES WORKED BY THE MAIN LINE— <i>conold</i> .	
3' 3 ³ / ₈ " gauge— <i>conold</i> .	
Sangli State	Madras and Southern Mahratta Railway Company.
Secunderabad-Gadwal	Nieain's Guaranteed State Railways Company.
Shoranur-Cochin	South Indian Railway Company.
2 6" gauge.	
Jhagadia-Thawe Road* <i>piplod Devgad-Bana</i>	Bombay, Baroda and Central India Railway Company.
Parlakimedi Light	Bombay, Baroda and Central India Railway Company.
Rajpipla State	Bombay, Baroda and Central India Railway Company.
XIII.—COMPANIES' LINES GUARANTEED BY INDIAN STATES.	
5' 6" gauge.	
Nizam's Guranteed State	Nizam's Guaranteed State Railways Company.
3 3 ³ / ₈ " gauge.	
Hyderabad-Godavari Valley	Nizam's Guaranteed State Railways Company.
2 6" gauge.	
Bangalore-Chick Ballaptir Light	Mysore Durbar.
XIV.—LINES IN FOREIGN TERRITORY WORKED BY BRITISH INDIAN RAILWAY COMPANIES.	
3' 3 ³ / ₈ " gauge.	
Peralam-Karaikkal	} South Indian Railway Company.
Pondicherry	
West of India Portuguese	
	Madras and Southern Mahratta Railway Company.

* Closed for trafflo from 26th July 1927.

APPENDIX B.

Notes on the relation of the Government to Railways in India.

(Reprinted from the Report for 1914-15 and brought upto date.)

Diversity of Relations between the State and Railways.—One of the special features of the Indian Railway system is the diversity of conditions that prevails in the relation of the State to the various lines in respect of ownership and control. Of the important lines situated in British India or in which the Government of India is interested, four (the North-Western,* Eastern Bengal, East Indian (with which has been amalgamated the Oudh and Rohilkhand Railway from the 1st July 1925) and Great Indian Peninsula Railways) are owned and worked by the State; six (the Bombay, Baroda and Central India, Madras and Southern Mahratta, Assam-Bengal, Bengal-Nagpur, South Indian and Burma) are owned by the State but worked on its behalf by companies enjoying a guarantee of interest from the Government; three important lines (the Bengal and North-Western, Rohilkhand and Kumaon and Southern Punjab) and many of less importance are the property of private companies, some being worked by the owning companies and some by the State or by the companies that work State-owned systems; several minor lines are the property of District Boards or enjoy a guarantee of interest granted by such Boards.

The diversity of conditions is in certain respects less important than might at first appear for the following reasons:—

The Government of India exercises under the Indian Railways Act, 1890, in respect of all railways in British India (and also, by virtue of arrangements with Indian States, in respect of certain railways passing through such States), certain general powers. Thus a railway may not be opened until a Government Inspector has certified that it has been constructed so as to comply with requirements laid down by the Government and can be used for the public carriage of passengers without danger to them. The Government of India can also, in the interest of the safety of passengers, require a railway to be closed, or the use of particular rolling-stock to be discontinued, or may prescribe conditions for the use of the railway or the rolling-stock. They can appoint a Railway Commission to investigate complaints on certain matters such as the withholding of reasonable traffic facilities or the grant of undue preference.

In addition, the Government of India (or in some cases Local Governments) exercise under the provisions of contracts detailed control over the management of all Railways in British India greatly exceeding that which is secured by the Indian Railways Act. They also have a certain financial interest in all companies in British India, and a preponderating interest in most of the Railways which are of the first importance.

History of Relations of the Government and Companies.—The main causes which have led to the present diversity of conditions in regard to the agency by which railways are managed, and the relations of the Government with the various classes of companies now in existence, are summarised in the following paragraphs:—

The first proposals for the construction of railways in India were submitted in 1844 to the East India Company in England by Mr. R. M. Stephenson, afterwards Chief Engineer of the East Indian Railway, and others; they included the construction of lines by railway companies to be incorporated for the purpose and the guarantee by the East India Company of a specified return. A contract for the construction by the East Indian Railway Company of an experimental line of 100 miles from Calcutta towards Mirzapore or Rajmehal at an estimated cost of 1,000,000*Rs.* was made in 1849, and a return of 5 per cent, was guaranteed by the East India Company on the Capital; and a similar contract was made in the same year with the Great Indian Peninsula Railway Company for line from Bombay to Ealyan at an estimated cost of £00,000*2*. But the policy of entrusting generally the construction of Indian railways to guaranteed companies was not adopted until 1854 on the recommendation of Lord Dalhousie, who, in a minute, dated 20th April 1853, explained his reasons for preferring the agency of companies, under the supervision and control of *the Government*, to the construction of lines on behalf of the Government by its own officers. He held that the State Engineer officers would make railways as well and as cheaply, and as expeditiously as companies; but that the withdrawal from how duties of the large number

*Includes the Delhi Umballa Ka which was purchased by the Secretary of State on 31st March 1926.

of officers required would be detrimental to the public interest, that the conduct of commercial undertakings did not fall within the proper functions of any Government and least of all within the functions of the Government of India, since the dependence of the population on the Government was, in India, one of the greatest drawbacks to the advance of the country, and that the country would therefore benefit by the introduction of English energy and English capital for railway purposes, with the possibility that such energy and capital would in due course be encouraged to assist in the development of India in other directions.

Old Guaranteed Railways.—The policy supported by Lord Dalhousie was adopted, and between 1854 and 1860 contracts for the construction of Railways in India were made by the East India Company, or (after 1858) by the Secretary of State for India with the East Indian, Great Indian Peninsula, Madras, Bombay, Baroda and Central India, Sind (afterwards, the Sind, Punjab and Delhi), Eastern Bengal, Great Southern of India (afterwards, when amalgamated with the Carrfittic Railway Company—see below—the South Indian) and Calcutta and South-Eastern Railway Companies. Under these contracts the railway companies undertook to construct and manage specified lines, while the East India Company (or the Secretary of State for India) agreed to provide land and guaranteed interest on the capital, the rate fixed being in various cases 5, $4\frac{3}{4}$ and $4\frac{1}{2}$ per cent according to the market rates prevailing when the various contracts were made. Half of any surplus profits earned was to be used towards repaying to the Government any sums by which it had been called upon to supplement the net earnings of any previous period in order to make good the guarantee of interest; and the remainder was to belong to the shareholders. In practically all matters of importance except the choice of staff, the companies were placed by the contracts under the supervision and control of the Government which had power to decide on the standard and details of construction; the rolling-stock to be provided, the number, time and speed of trains; the rates and fares to be charged; the expenditure to be incurred; the standard of maintenance; and the form of accounts. The railways were to be held by the companies on leases terminating at the end of 99 years, and on such termination the fair value of their rolling-stock, plant and machinery was to be paid to them. But provision was also made to enable the Government to purchase the lines after 25 or 50 years on terms calculated to be the equivalent of the companies' interest therein and also to enable the companies to surrender their lines to the Government and to receive in return their capital at par.

Early Attempts to Secure Funds for Railway Construction without a Guarantee.—An attempt to secure the construction of railways in India, on terms more favourable to the Government than those of the contracts with the original guaranteed companies, was first made in 1862, when a subsidy, but not a guarantee, was granted to the Indian Branch Railway Company which proposed to make feeders to the trunk lines in Northern India, and did actually make one such line. Similar assistance was granted later to the Indian Tramway Company, which made a short line in Madras. In 1864, the terms granted to the two companies mentioned were taken as a standard for general adoption with a view to the encouragement of similar companies. The chief provisions were that the Government, besides giving the necessary land free of costs, would grant an annual subsidy for 20 years at a rate not exceeding £100 per mile of line, with an addition in respect of large bridges costing more than £10,000. These terms failed to attract capital, and the two unguaranteed companies which had begun work found themselves after a few years unable to proceed without further assistance from the Government. Consequently, in 1867, a contract was entered into with the Indian Branch Railway Company (which soon after changed its name to the "Oudh and Rohilkhand Railway Company") by which the company was guaranteed interest at 5 per cent, per annum on the cost of certain lines to be carried out by it, on conditions similar to those laid down in the contracts of the period 1854—1860. Similarly, the Indian Tramway Company, after having been given in 1868 a guarantee of 3 per cent, per annum, went into liquidation in 1870, and became absorbed in a new company called the Carnatic Railway Company (afterwards amalgamated with the Great Southern of India Railway Company to form the South Indian Railway Company), with which the Secretary of State entered into a contract guaranteeing interest on its capital at 5 per cent, per annum. In 1869, Sir John Lawrence summed up the result of the experiment of the construction of railways by unguaranteed companies as follows:—"The Government of India has for several years been stirring to induce capitalists to undertake the construction of railways in India at their own risk, and on their responsibility with a minimum of Government interference. But the attempt has entirely failed, and it has become obvious that no capital can be obtained for such undertakings otherwise than under a guarantee of interest fully equal to that which the Government would have to pay if it borrowed directly on its own account."

The attempt to encourage unguaranteed companies having thus been unsuccessful, it became necessary to decide why the of giving on guaranteed companies, of the we that had provided his constructed, the first railways in India, should be continued. The Government of India expressed their objections to

this course. They doubted whether their power of control over such companies secured the greatest possible economy in construction. They also disliked the arrangements under which they guaranteed the interest on the capital of companies, and thus became responsible for loss on working while having only a comparatively remote prospect of profiting by the result of successful working. Two important changes were consequently made in the practice that had been followed since the beginning of railway construction in India:—

1. Arrangements were made with some of the most important of the guaranteed companies that, in lieu of the provision that half of any surplus profits was to be applied in repayment of sums advanced by the Government under the guarantee of interest, half of the surplus profits for each half-year should be the property of the Government. In consideration of this modification, the Government relinquished, in the case of three companies, the Great Indian Peninsula, the Bombay, Baroda and Central India and the Madras, its right to purchase the lines at the end of the first 25 years from the dates of the respective contracts.
2. It was decided by the Secretary of State that the time had arrived when in both raising and expending such additional capital as might be required for new lines in India, the Government should secure to itself the full benefit of its own credit and of the cheaper methods which it was expected that it would be able to use. Accordingly, for several years after 1869, the capital expenditure on railways was chiefly incurred direct by the State and no fresh contracts with guaranteed companies were made except for small extensions. Among the lines constructed or begun by State agency and from State capital between 1869 and 1880 were the Indus Valley, Punjab Northern, Rajput an-a-Malwa, Northern Bengal, Rangoon and Irrawaddy Valley and Tirhoot.

Progress in the Construction of Railways.—By the end of 1879, in about 25 years from the introduction of railways in India, 6,128 miles of railway had been constructed by companies which had expended, approximately, £97,872,000 (these figures include the Calcutta and South-Eastern and Naihati Railways which were constructed by companies but were purchased by the Government in 1868 and 1872, respectively). By the same date 2,175 miles of railway had been constructed by the Government at a cost of £23,695,226.

Introduction of Modified Guarantee Terms.—In 1880, the necessity for great and rapid extension of the railway system was urged by the Famine Commissioners, appointed after the great famine of 1878, who estimated that at least, 5,000 miles were still necessary for the protection of the country from famine. It was held by the Government of the time that a limit was necessary on the capital borrowed annually; and it was clear that the limit fixed was not high enough to allow of such progress in railway construction as was desirable. With reference to this difficulty the Famine Commissioners remarked: "that there would be manifest advantages in giving free scope to the extension of railways by private enterprise if it were possible; and, though the original form of guarantee has been condemned, it may not be impossible to find some substitute which shall be free from its defects, and may secure the investment of capital in these undertakings without involving the Government in financial or other liabilities of an objectionable nature."

Action in the direction suggested by the Commission was taken by the formation of three companies without a guarantee (the Bengal Central in 1881 and the Bengal and North-Western and Rohilkhand and Kumaon in 1882), and three new guaranteed companies (Southern Mahratta in 1882, the Indian Midland in 1885, and the Bengal-Nagpur in 1887). The Bengal and North-Western and the Rohilkhand and Kumaon Railway Companies are referred to more fully, in a later paragraph. The Bengal Central Railway Company's operation were not successful at the outset, and a revised contract was entered into with the company, with effect from the 1st July 1885, under which the Secretary of State guaranteed interest at 3½ per cent, on the company's capital the balance of net earnings remaining after payment of interest on advances by the Secretary of State and debenture capital (but not the share capital) being divided between the Secretary of State and the company in the proportions of three-quarters to the former and one-quarter to the latter. The new contract gave the Secretary of State the right to take possession of the line on the 30th June 1905, or subsequently at intervals of 10 years, on repaying the company's capital at par. The rate of interest guaranteed to the Southern Mahratta Railway Company was also 3½ per cent.; if this case the balance of net earnings remaining after payment of interest on Advances by the Secretary of State (but not on share or debenture capital) was divisible in the same way as in the case of the Bengal Central Railway Company. The guaranteed Indian Midland and Bengal-Nagpur Railway Companies who 4 per cent in the Secretary of State was entitled to three-quarters of the surplus profits in excess of all interest charges. The lines constructed by the three companies as mentioned declared to be the property of the Secretary of State who had the right to determine the contracts at the end of

approximately 25 years after their respective dates, or at subsequent intervals of 10 years, on repaying at par the capital provided by the companies.

The Assam-Bengal Railway Company was formed on similar lines in 1892, except that any surplus profits were to be divided between the Secretary of State and the company in proportion to the capital provided by each. The rate of guarantee in this case was $3\frac{1}{2}$ per cent, for the first six years and thereafter 3 per cent. The Burma Railways Company was formed in 1897 to manage and develop the line in that Province that had been constructed by the State. Interest at $2\frac{1}{2}$ per cent, was guaranteed on the share capital raised by the company, and the surplus profits were originally divisible in the proportion of four-fifths to the Secretary of State and one-fifth to the company, but since 1908 the division has been proportional to the capital invested by each in the undertaking. The contract with the Burma Railways Company is terminable by the Secretary of State in 1928, or on subsequent occasions, on repayment of the company's capital at par.

The terms of guarantee given to the companies formed since 1880 have thus been, much more favourable to the Government than in the case of those formed before 1869.

Termination of Contracts of the Old Guaranteed Companies.—In dealing with the guaranteed companies formed before 1869 and with those formed in 1881 and subsequently, it has been the practice (except in the cases mentioned above, when the purchase of some of the old guaranteed lines was postponed in order to secure to the Government a share in surplus profits) to use in some way or other at the earliest possible date the right reserved by the Government of terminating the contracts of the various companies. The method of making use of this right has differed in different cases. The Eastern Bengal, Oudh and Rohilkhand and Smd-Punjab and Delhi lines were purchased and transferred to State management, the last named now forming part of the North Western Railway. Similarly, the Bengal Central line was purchased and made part of the Eastern Bengal Railway. The Madras and the Indian Midland lines were acquired but left, after acquisition, under the management of companies working other lines with which it was advantageous to amalgamate them. In the cases of South Indian, Bombay, Baroda and Central India, Southern Mahratta, and Bengal-Nagpur, the course adopted has been to arrange for the continuance of management by the original company (or by a new company closely related to the old one), but to secure more favourable financial conditions for the State by one or more of the following methods:—reduction of the amount of capital retained by the companies in the undertakings, reduction of the rate of interest guaranteed by the State on such capital and modification in favour of the Government of the clauses relating to the division of surplus profits. This method was adopted also in regard to the East Indian and the Great Indian Peninsula Railways, but the contracts under which they were being worked having terminated on the 31st December 1924 and the 30th June 1925 respectively, the management of these lines has been taken over by State from those dates.

Arrangements between the Government and Companies at present.

—The relations between the Government and the guaranteed companies now working railways may be summarised as follows:—

The lines that they work are the property of the State.

The greater part of the capital is the property of the Government, either through having been originally supplied by it or through the acquisition by the Government of the greater part of the companies' interests on the termination of old contracts.

When funds are required for further capital expenditure, the Government has the option either of providing them or of calling on the company to provide them. Both the Government and the company receive interest at a fixed rate on their capital and surplus profits are divided between the Government and the company in the various proportions provided for by the contracts. The company's share is in most cases only a small proportion of the total amount.

All the contracts are terminable at the option of the Secretary of State, at specified dates; and on termination the company's capital is repayable at par.

The administrative control exercised by the Government over the companies is as follows:—

The company is bound to keep the *rolling stock*, in good repair, in good working condition, and fully supplied with rolling stock, plant, and machinery; to keep the rolling-stock in good repair and in good working condition; and to maintain a sufficient staff for the purposes of the line;—all to the satisfaction

The Secretary of the may any to carry out any alteration or *improvement in the* working that he may think necessary for the safety of the *efficient* working of the line.

The Secretary of State may require the company to enter into agreements, on reasonable terms and conditions, with the administrations of adjoining railways for the exercise of running powers, for the supply to one another of surplus rolling-stock, for the interchange of traffic and rolling-stock and the settlement of through rates, and for additions and alterations to, or the redistribution of, existing accommodation in junctions or other stations in view to their convenient mutual use.

The train service is to be such as the Secretary of State may require. In order to secure a general control over the rates quoted by companies, the Secretary of State has retained power to settle the classification of goods and to authorise maximum and minimum rates within which the companies shall be entitled to charge the public for the conveyance of passengers and goods of each class.

The company has to keep such accounts as the Secretary of State may require, and these are subject to audit by the Secretary of State.

In all other matters relating to the line the company is made subject to the supervision and control of the Secretary of State, who may appoint such persons as he may think proper for the purpose of inspecting the line, auditing the accounts, or otherwise exercising the powers of supervision and control reserved to him. In particular, the Secretary of State has the right to appoint a Government Director to the Board of the company, with a power of veto on all proceedings of the Board. All the moneys received by the company in respect of the undertaking, whether on capital or revenue account, have to be paid over to the Secretary of State.

All expenditure by the company has to be stated and submitted for the sanction of the Secretary of State.

Thus, the Government has the preponderating financial interest in the lines worked by the two classes of guaranteed companies, those formed before 1809 and retained as working agencies with reduced capital after purchase, and those formed on terms more favourable to the State after 1880; it has exceedingly wide control over the methods of working; and it has the right of taking possession of the lines at specified times on repayment at par of the capital of the companies.

Other Lines worked by Companies.—In addition to the lines referred to above, and apart from lines constructed by Branch line companies, District Boards and Indian States, two lines of some importance have been constructed by companies which receive no direct assistance by the Government, namely, the Bengal and North-Western Railway and the Rohilkhand and Kumaon Railway. (The Rohilkhand and Kumaon Railway Company was guaranteed interest at 4 per cent during construction and received for 10 years thereafter a subsidy of Rs. 20,000 per annum. This ceased in 1894.) While, however, these companies have no guarantee or other direct payment from the Government, they derive some advantage (partly through direct participation in profits and partly through reduction of expenses) from the fact that the working of certain State lines has been entrusted to them, the Tirhoot Railway to the former company and the Lucknow-Bareilly Railway to the latter. Their lines can be purchased by the State in 1932 on terms which are different in respect of the different sections of the lines, but are, on the whole, much more favourable to the companies than those provided for in the contracts with the guaranteed companies. Failing purchase in 1932, the lines will become the property of the State in 1981. The general administrative control exercised by the State over these companies and the control over expenditure are similar to that which is exercised, as explained above, over guaranteed companies.

APPENDIX C.

The Organisation for Government control.

The initial policy of the Government of India for the construction and working of railways was the establishment of guaranteed railway companies of English domicile. Control over the operations of these companies was at first secured through the appointment of a Consulting Engineer of Guaranteed Railways. Some years later local Consulting Engineers were appointed for the exercise of control over guaranteed railways and over State-owned railways in the construction of which the State had been financially interested and which had been leased to companies for working. These officers embodied the duties of supervision and control on behalf of the Government of India and of an Inspector under the Government of India Railway Act. The Government of India were not directly concerned with the ownership of railways until 1868 when the Calcutta and South Eastern Railway was surrendered to the Indian Government under the terms of the contract between the Secretary of State and the Company.

Owing to the Government of India having in 1869 definitely adopted the policy of direct construction and ownership of railways, a period of rapid development or railway construction ensued and it became necessary to relieve the Public Works Department Secretariat of the Government of India in some measure of the detailed control of railways. Accordingly in 1874 a State Railway Directorate was established and the greater portion of the State Railway establishment and business connected with State Railway Administration was transferred to the control of the Director of State Railways, an officer who functioned on much the same lines as the head of a department under the Government of India. The Consulting Engineer to the Government of India for State Railways was at the same time associated with him but all important matters had still to be referred to the Public Works Department. A special Deputy Secretary in the Railway Branch of the Secretariat of the Public Works Department was also appointed to conduct the correspondence between the Government of India and these officers.

Early in 1877 a further change was made in the organisation responsible for the administration and control of State Railways and in the place of one Director of State Railways three Directors of territorial systems and one Director of State Railways Stores were appointed. These territorial divisions comprised the following systems:—

Central	1,179 miles.
Western, and	927 miles.
North Eastern	830 miles.

This division of the administration on a territorial basis proved unsatisfactory in practice as it resulted in the issue of conflicting orders as far as the management of open lines was concerned although no difficulty was experienced in the supervision of new construction.

As the number of lines under construction had decreased and in order to remedy the defect just mentioned, it was decided in 1880 to abolish the Directors of the Central and Western Systems and to transfer the work allotted to them to the Consulting Engineers of the neighbouring guaranteed railways. The abolition of these two appointments resulted in an increase in the administrative work of the Secretariat and it was found necessary to raise the status of the Deputy Secretary to whom the powers previously exercised by the Directors had been entrusted, to that of Director General of Railways.

In the revised organisation the Consulting Engineer to the Government of India for State Railways was associated with the Director General of Railways and assisted the latter primarily in an advisory capacity in matters of civil engineering while the Director of Stores similarly acted in matters concerning stores and rolling-stock and at the same time was an adviser in matters affecting establishment. The Director of Traffic was appointed at the same time as an adviser on traffic problems and the accounts work of the department was placed under the Accountant General, Public Works Department.

Government control and supervision of the Guaranteed Railways continued to be exercised by the Local Consulting Engineers to Government. There were five such officers at the time with headquarters at Bombay, Madras, Calcutta, Lahore and Lucknow. The Consulting Engineers at Mallan and Bombay worked directly under the Government of India, while the Consulting Engineers at Calcutta, Lahore and Lucknow were under the immediate orders of the Government of India. Under this arrangement practically all powers effecting the day to day management of the

railways were vested either in the Consulting Engineers or in the Government, both for the guaranteed railway companies and later on for State Railways which had been leased for working to railway companies.

The following is a list of the administrative appointments that existed in 1881:—

1. Member of the Governor General's Council, Public Works Department.
2. Secretary, Public Works Department.
3. Deputy Secretary, Railway Branch.
4. Under Secretary, Railway Branch.
5. Consulting Engineer of State Railways.
6. Director General of Railways.
7. Director of Construction.
8. Accountant General, Public Works Department.
9. Director of State Railways, Stores.
10. Three Assistants to the Director General of Railways.
11. Consulting Engineers for Guaranteed Railways at Calcutta, Lahore and Lucknow.
12. Deputy Consulting Engineers for Guaranteed lines, Calcutta, Lahore and Lucknow.

Madras and Bombay.

13. Joint Secretary, Railway Branch and Consulting Engineer for Railways.
14. Deputy Secretary, Public Works Department.

Punjab.

15. Secretary, Public Works Department.

By this time also Local Governments and Administrations had been induced to take a practical interest in the management of railways and in a few cases short extensions had been constructed from funds the interest of which Local Governments had accepted responsibility to pay. Such lines were controlled by the Local Government* concerned under the general supervision of the Government of India.

After 1881 further alterations of a more or less detailed character were made in the administrative organisation and by 1890 the following changes had taken place. Instead of a Deputy Secretary and Under Secretary, Railway Branch, there were then only an Under Secretary and an Assistant Secretary, Railways in the General Branch. The posts of Director of State Railways, Stores, and Director of Construction had disappeared and in their place there was an Under Secretary, who was an *ex-officio* Deputy Director General of Railways. The post of Accountant General, Railways, had also been abolished and the Accountant General, Public Works Department, was once more made responsible for this work.

Further changes were made in 1897. In that year the post of Director General of Railways was abolished and the post of a Secretary to the Government of India in the Public Works Department was created in its place. The other administrative and secretariat appointments at the headquarters of the Government of India at the time were:—

- (1) Director of Railway Construction and Deputy Secretary and *ex-officio* Director of Stores.
- (2) Director of Railway Traffic, and Deputy Secretary and *ex-officio* Director of Railway Statistics.
- (3) Two Under-Secretaries.
- (4) Two Assistant Secretaries.
- (5) One Mechanical Assistant.

The post of Consulting Engineer for State Railways was also abolished and his duties transferred to the two Directors. The stipension of the accounts work of the Department, however, still remained under the Accountant General, Public Works Department, who was also an *ex-officio* Deputy Secretary to the Government of India.

In October 1901, Sir Thomas Robertson, C.V.O., was appointed by His Majesty's Secretary of State for India in Council as Special Commissioner for Indian Railways to enquire into and report on the administration and working of Indian Railways. In his report, which became available in 1903, Sir Thomas recommended that the administration of the railways in India should be entrusted to a small Board consisting of a President or *Chief Commissioner* who should have a thorough practical knowledge of railway working, and should be a member of the Viceroy's Council for railway matters and two other *Commissioners* should be men of high railway standing

and should have a similar training to that of the President. He recommended that the Board should, in addition to the necessary office establishment, be provided with—

- (1) A Secretary who should have received a suitable training in the practical working of railways, and who should be *ex-officio* a Secretary to the Government of India.
- (2) A Chief Inspector of Railways, to advise on all technical, engineering and mechanical questions.
- (3) A suitable number of Government Inspectors.

Sir Thomas Robertson's recommendations were carefully considered by the Governor General in Council and the Secretary of State, and early in 1905 it was decided that the Railway Branch of the Public Works Department of the Government of India should be abolished and that the control of the railway systems in India should be transferred to a Railway Board consisting of three persons, a Chairman and two Members. The Chairman of the Board was vested with the general control of all questions committed to the Railway Board with power to act on his own responsibility subject to confirmation by the Board. The Railway Board were authorised to delegate to the Chairman or a member the power of settling questions which might arise on any tour of inspection, such decision to be recorded subsequently as an act of the Railway Board. The Board was made subordinate and directly responsible to the Government of India in the Department of Commerce and Industry.

The Railway Board assumed office in March 1905 and were provided with the following establishment:—

1. Secretary.
2. Examiner of Accounts.
3. Under Secretary, Construction.
4. Under Secretary, Traffic.
5. Registrar.
- Py. Director of Railway Construction.

Certain changes were, however, made in the following year and the establishment then consisted of:—

1. Secretary.
- 3 Assistant Secretaries; one each for Establishment, Construction and Traffic.
- 1 Registrar.
- 1 Director of Railway Construction.
- 1 Railway Accounts Officer.

Sir Thomas Robertson had further suggested in his detailed recommendations that extended powers, both administrative and financial, should be delegated to Boards of Directors of Companies, that the appointments of Consulting Engineers should be abolished and that the work which they performed under the* Railways Act should be entrusted to a body of Government Inspectors to be appointed for the purpose. These recommendations were given effect to in a modified form in 1908

Within a short time after the constitution of the Railway Board, it was found that work was being hampered by having the Commerce and Industry Department between the Railway Board and the Governor General in Council and in October 1908 on the recommendations of the Railway Finance Committee presided over by Sir James Mackay (now Lord Inchcape), the following changes were introduced:—

1. The appointment of the Chairman of the Railway Board was changed into that of President of the Railway Board and enhanced powers were vested in the President.
2. The Board with its staff became collectively the Railway Department distinct from and independent of the Department of Commerce and Industry, though remaining under the administrative charge of the Hon'ble Member, Commerce and Industry Department, as the Railway Member.
3. The President of the Board was given direct access to the Viceroy as if he were a Secretary to the Government of India.

At the same time in consequence of the amalgamation of the Public Works Department Accounts and Civil Audit Establishments under the control of the Finance Member of the Government of India the appointment of Accountant General, Public Works Department, was abolished and the appointment of Accountant General Railways, was revived.

In 1909 the post of Director of Railway Construction was abolished and the appointment of Chief Engineer with the Board for the purpose of advising the Railway Board on technical matters C o n n e c t i n g was created.

In January 1914, it was decided that the importance of financial and commercial considerations in connection with the control of Indian railway policy justified a modification of the rule that the President and Members of the Railway Board should all be men of large experience in the actual working of railways. It was then decided that in future one member who equally with the others might be appointed President should be selected for commercial and financial experience and a member with the necessary qualifications was appointed.

This arrangement was, however, altered in 1920 when it was decided that all the three members of the Board should possess railway experience. To assist the Board, however, in the consideration of financial questions, the post of Financial Adviser to Railway Board was created.

Owing to the expansion of railways in India and the increased work thrown on the Board a second Assistant Secretary, Engineering, was appointed in 1914, and in 1916 the duties of the Construction Branch were divided between one branch dealing with Projects under an Assistant Secretary and a second branch dealing with Way and Works which was sometimes under a separate officer and at other times under the Secretary or Chief Engineer. In 1922 the charge of the Way and Works branch was divided between the Assistant Secretary in charge of Projects and the Assistant Secretary in charge of Stores.

In November 1922, the Board's establishment was strengthened by the appointment of a Chief Mechanical Engineer. This appointment was created to enable the Board to have at headquarters a reliable adviser on matters connected with mechanical engineering.

During 1921 a Committee presided over by Sir William Acworth visited India and one of the questions referred to was the evolution of a satisfactory authority for the administration of the varied functions which the Railway Board had to perform as:-

- (a) the directly controlling authority of the three State-worked systems aggregating 9,028 miles,
- (b) representative of the predominant owning partner in systems aggregating 22,949 miles,
- (c) the guarantor of many of the smaller companies,
- (d) the statutory authority over all railways in India.

The Acworth Committee recommended in their report:—

- (1) that a new Department of Communications responsible for railways, ports and inland navigation, road transport and posts and telegraphs under a Member of Council in charge of Communications should be created,
- (2) that under the Member of Council for Communications there should be a technical staff consisting on the railway side of a Chief Commissioner and four Commissioners and that of the four one should be in charge of finance and the organisation and staff of the office and the other three Commissioners should be in charge of three respective divisions, Western, Eastern and Southern,
- (3) that the technical staff attached to the Commission should be strengthened specially on the traffic side

The Government of India, though they did not accept the first recommendation of the Acworth Committee, agreed to the re-organisation of the Railway Board being undertaken on the principles underlying the report of the Acworth Committee. The appointment of a Chief Commissioner was accordingly sanctioned in November 1922, and in accordance with the recommendations of the Acworth Committee he is solely responsible, under the Government of India, for arriving at decisions on technical questions and advising the Government of India on matters of Railway policy; he is not liable to be over-ruled, as the President was, by his colleagues in the Railway Board.

The first duty of the Chief Commissioner was to work out detailed proposals for the re-organisation of the Railway Board and as a first step he made recommendations to the Government of India for the immediate appointment of a Financial Commissioner. This recommendation was strongly endorsed by the Indian Retrenchment Committee and the appointment of the Financial Commissioner was made in April 1923 with the sanction of the Secretary of State. The further proposals of the Chief Commissioner for the re-organisation of the Railway Board were accepted by the Government of India and the Secretary of State and were introduced from the 1st April 1924. **It was decided, however, for reasons connected with the present statutory position of the Railway Board, and to avoid confusion with the provisions for a Railway Commission under Chapter V of the Railways Act, to retain the name " Railway Board "** for the headquarters organisation of the Railway Department instead of " Railway Commission " as recommended by the Acworth Committee.

The Railway Board as now defined consists of the Chief Commissioner as President, the Financial Commissioner and two Members, the Chief Commissioner being

Secretary to the Government of India in the Railway Department. The proposal of the Acworth Committee that the Indian Railways should be sub-divided into three territorial divisions with a Commissioner in charge of each was not accepted, and the work of the Members of the Board is now divided on the basis of subjects and not on a territorial basis. One Member deals with technical subjects and the other with general administration, personnel and traffic subjects, the Financial Commissioner representing the Finance Department on the Board and dealing with all financial questions.

The reorganisation carried out in 1924 had for one of its principal objects the relief of the Chief Commissioner and the Members from all but important work so as to enable them to devote their attention to larger questions of railway policy and to enable them to keep in touch with Local Governments, railway administrations and public bodies by touring to a greater extent than they had been able to do in the past. This object was effected by placing a responsible Director at the head of each of the main branches of the Board's work, namely Civil Engineering, Mechanical Engineering, Traffic and Establishment. The former Chief Engineer and the Chief Mechanical Engineer who had been employed mainly in consultative work, became Directors and together with the Directors of Traffic and Establishment have been made responsible for the direct disposal of the work of their branches under the general orders of the Railway Board.

The posts of Joint Secretary and 4 Assistant Secretaries were replaced by 6 Deputy Directors working under the Directors and in charge of branches dealing with Establishment, "Works, Projects, Stores, Statistics and Traffic. One Assistant Director was also added to supervise the Technical Branch and the Drawing Office. The disposal of the general work of the Railway Board was provided for by the continuance of the post of Secretary in whose name all letters and orders of the Board are issued. The position of the Board as a Department of Government of India has been maintained and it works under the Member for Commerce and Railways. As already stated the Chief Commissioner is the Secretary to the Government of India in the Railway Department and orders issued by the Board over the signature of the Secretary are orders of the Government of India.

Experience of the working of this organisation during 1924-25 and the decision agreed to by the Legislative Assembly in September 1924 to separate railway finances from the general finances of the country made it necessary to appoint a Deputy Director and an Assistant Director of Finance. An Assistant Director of Statistics was also added during that year. Later a Director of Finance was added to the establishment occupying, as regards disposal of work, the same position as the Directors referred to above.

Further experience of the reduction of work resulting from the large delegation of powers and responsibility to the Agents of State-managed Railways and the Board of Directors of Company-managed railways enabled a re-arrangement of work to be made during 1925-26 accompanied by a reduction in the staff. Under this re-arrangement the posts of 3 Deputy Directors, an Assistant Director and the Assistant Secretary were held in abeyance. The personnel work was transferred from the Director of Establishment to the Secretary and a temporary post of Deputy Secretary was created. Further a separate technical office was established to take charge of the technical work of the engineering branches. The Technical Officer also acts as *ex-officio* Secretary to the permanent Standardisation Committees which have been appointed to deal progressively with all questions of standards of equipment.

The present superior staff under the Railway Board, therefore, consists of 5 Directors, 4 Deputy Directors, a Technical Officer, 2 Assistant Directors, a Secretary and a Deputy Secretary

APPENDIX D.

Resolution regarding the separation of railway from General Finances, adopted by the Legislative Assembly on the 20th September 1924.

" This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways.

- (1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.
- (2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year plus one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent, on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

- (3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve, provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.
 - (4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital; and to strengthen the financial position of railways in order that the services tendered to the public may be improved and rates may be reduced.
 - (5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure to which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.
 - (C) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Assembly from their body. The members of the Standing Finance Committee for Railways shall be *ex-officio* members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight selected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.
- The Railway Department shall place the estimate of railway expenditure before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demand for grants for railways and shall, as far as possible, instead of the expenditure programme revenue show the expenditure under a depreciation fund created as per the new rules for charge to capital and revenue.

- (7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and Member of Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the railway budget including depreciation fund and

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the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after separation, the detail it shall give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

- (8) These arrangements shall be subject to periodic revision but shall be provisionally tried for at least three years.
- (9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to Company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends—

- (G) that the railway services should be rapidly Indianised, and further that Indians should be appointed as Members of the Railway Board as early as possible, and
- (H) that the purchases of stores for the State Railways should be undertaken through the organisation of the Stores Purchase Department of the Government of India."

APPENDIX E.

**Government of India, Railway Department, Resolution No. 2131-F.,
dated the 19th February 1925, on the subject of the financing
of branch lines of railways.**

The Governor General in Council, with the sanction of His Majesty's Secretary of State for India, is pleased to issue the following orders on the subject of Financing of Branch Lines, in supersession of all previous orders on the subject.

1. Branch and Feeder Lines are constructed under an agreement by which the State guarantees a minimum return on the capital, or alternatively, undertakes that the line shall receive, out of the earnings of the main line from traffic contributed by the branch, such a sum, known as a rebate, as will make up the total earnings of the branch to a given sum, while the branch in each case shares with the main line any profits exceeding the guaranteed minimum.

2. This method of encouraging the construction of lines originated 30 years ago simply because the Government of India was unable to furnish the necessary capital.

3. The Aeworth Committee pointed out that this method, while enabling lines to be built which would otherwise not have been built, has no other merit. The financial terms usual before the war are now quite inadequate and if the system is to continue they will have to be revised. All the witnesses before the Committee who asked for a revision of the terms admitted that, if the main line were in a position to build a given branch itself, they would prefer that it should be done by the main line rather than that it should be done as a separate undertaking.

4. Amongst the disadvantages pointed out by the Committee are the following:—

- (?) The Branch Line Company is usually a fifth wheel to the coach. It implies in some cases a separate construction staff; it always implies a separate* Board of Directors, and separate accounts.
- (ii) Where the branch is worked by the main line, if its Directors feel that the management is unsatisfactory, they not only make representations to the main line administration, but in the last resort can appeal to the Railway Board which does not make for harmony.
- (iii) Capital raised by a small private undertaking, even with a Government guarantee, will cost more than money raised by the State.
- (iv) Inconceivable confusion results from the multiplication of independent Railway Companies—each company, small or great, desires to reserve for itself a separate sphere of influence; and jealously demands that, if any new-comer intrudes into that sphere, he shall pay toll to the original concessionaire. This only complicates a situation which ought to be considered solely from the point of view of the public interest. New proposals for the extension or connection of lines by small independent companies are either refused owing to protests by the old company or only permitted on a basis of elaborate accounting between the new company and the old for the profits which hypothetically would have belonged to the old line had the new line not been opened.

5. The only arguments urged in favour of the Branch Line Companies were:—

- (i) That money had been raised which the Government of India was unable to furnish,
- (u) That a claim was made that the Branch Line Company obtained from local sources money that would never be subscribed to a Government loan.
- (iii) That there may be cases of a Branch Line of smaller gauge *worked independently*, which the Branch Line Company can operate more economically than a main line.

6. The Aeworth Committee, therefore, so far from approving of this system considered that the aim of the Government should be to reduce by amalgamation the number of existing companies and that it should only be in cases where the State cannot or will not provide adequate funds that private enterprise in the direction should be encouraged.

7. The disadvantages pointed out by the Aeworth Committee require to be even further amplified. The existing Branch line Companies have ceased for some time to raise additional capital for capital Governments. They have either obtained overdrafts from various Banks for this purchases heavy rates of interest or issued debentures at special rates of interest of 7 per cent.) or in several cases asked

for money to be advanced to them by the Railway Board. So far, therefore, from reducing the amount that the Government of India have to raise in the open market, they are at present increasing that amount.

8. Another serious disadvantage which is not mentioned by the Acworth Committee is that the main line usually works the Feeder or Branch Line for a remuneration which, in most cases, is limited to a maximum of a fixed percentage of the gross earnings of the Branch Line (usually 40 per cent, or 50 per cent)—terms of remuneration which at present are grossly inadequate. The result of this arrangement is that many of the main lines whose working expenses are from 60 to 80 per cent, of the gross earnings are saddled with heavy expenditure which ought to have been debited to Branch Line Companies. Where the Branch Line Companies are "successful," that is, where the shares stand at a high figure, their profits are inflated owing to their working expenses being thus artificially reduced. Again, where in the case of less "prosperous" Branch Line Companies, the Government has to make a direct subsidy in order to make up the guaranteed interest on the capital, the amount paid by way of subsidy does not reveal the true loss of the Government in connection with the Branch Line Company. To this subsidy should be added also the additional loss incurred from the main line working the Branch Line at less than the actual cost. Even this, however, does not give a complete statement of the loss sustained by Government in connection with these Companies. These Companies have been supplied with land free of charge and the cost of such land is not taken into account either in the Capital or the Revenue Accounts of the Companies concerned.

9. The only real argument in favour of these Companies is that they must be utilised in cases where the Government itself is unable or declines to raise the necessary amount of capital for new constructions. It is doubtful whether such a position is likely to recur in the future. It is admitted that to use the agency of these Companies is a far more expensive method of raising money for the construction of railways than direct Government loans can ever be. The amount of assistance given by Branch Line Companies in the past has been trivial; the total amount of capital raised through the agency of Branch Line Companies has only been about Rs. 10½ crores—an amount which in itself is less than the lapse that occurred last year in the provision for capital expenditure in the Railway Budget.

10. The difficulties and complications now experienced in connection with these Branch Line Companies are out of all proportion to the insignificant financial facilities offered by the Companies. The Government of India have therefore decided that the Branch line policy should be abandoned and that an endeavour should be made to reduce the number of the existing Branch Line Companies. If on any occasion the Government of India should be unable to find funds for construction (which is not the case at present), and should it be considered advisable to tap fresh sources for subscription to railway loans by offering terms different from those given to the ordinary Government loans, that is, by offering not only a fixed rate of interest, but a share in the profits of a particular Branch Line, there appears to be no particular advantage of using a financial half-way house specially to float a loan on such terms; there appears to be no reason why the Government should not float the loan direct. But it will probably be found sufficient to raise short term debentures at a high rate of interest—to be liquidated when the loan market is favourable—a procedure adopted now by the Branch Line Companies, but at a higher rate of interest than would be necessary for the Government.

11. There remains the case of the District Board Railways for which some of the capital or the security for the capital is secured by a special cess levied by the District Board throughout the district.

The Acworth Committee pointed out that where a District Board was the promoter of a new Branch Line, considerations other than purely commercial came into play with the result of further complications and confusion. In a footnote to the report they referred to the views expressed by the Madras Government who had drawn attention to a case in which, although no short circuiting was involved, there had been a delay of over 10 years in arriving at a solution in regard to the terms for working a District Board Railway by the South Railway Company. The amount of capital raised by District Boards for such lines when only Rs. 137 lakhs while the amount raised by Company lines subsidised District Boards amounts to Rs. 2¼ crores. These amounts are insignificant and with the total capital raised by the Government and it is clear that the Government of India in raising the loans is quite disports the complication which have resulted in the working of the railway raised direct by the District Boards do not relieve the main of India; the money is ultimately borrowed from the Government.

12. The legal position regarding the power of the local Boards in the matter of railway construction and management of Indian Railways A.H. 1890 which, in the absence of the depletion extends to all District Board railway and in part of the provision made in the

matter in the District or Local Boards Act of the province concerned. It is only in the Madras Presidency that the question has assumed prominence and it will suffice to indicate briefly the nature of the provisions contained in the Madras Local Boards Act, 1920. Action under section 113 of that Act can only be taken "with the previous sanction of the Government of India." Having obtained such sanction, a District Board may either itself construct and maintain a railway within, or partly within, the local area under the control of the Board, or may subscribe to any debenture loan raised by the Government of India or by any other local authority or by any company for the construction or maintenance of any railway which the Board considers likely to be of benefit to the district, or may guarantee the payment from the district fund of such sums as it shall think fit as interest on capital expended on any such railway (that is, whether the railway is constructed by the Government of India or by any other local authority or by a Company).

Section 236 of the same Act provides that the accumulations of a local railway cess may be utilised for all or any of the purposes specified in section 113, including the guaranteeing of payment of interest on capital spent on a railway.

A District Board in Madras, therefore, can guarantee the payment from the district fund of the money sufficient to make up minimum interest on capital expended on a railway within its area whether such railway is constructed by the Government of India or by a Company, the only disadvantage attaching to this particular form of guarantee being that the Act does not make the payment of the guaranteed interest a first charge on the District Board Fund.

13. The Government of India could not reasonably use their powers under the Indian Railways Act, 1890, or under *e.g.*, section 113 of the Madras Local Boards Act, 1920, to prevent a District Board or a local body from constructing a light railway or a tramway which had no physical connection with any existing main line and which that local body proposed to work itself or through a local company. But as things stand at present there is no reason for continuing the practice under which District Boards are allowed to make money out of Branch Lines connected with a main line when they themselves cannot make any arrangements for the working of the lines and require to have them run by the main lines.

14. These District Board railways must not be confused with the light and feeder railways which constitute a provincial subject under the Devolution Rules. The provincial subject in question comprises "light and feeder railways and extra-municipal tramways in so far as provision for their construction and management is made by provincial legislation." That is to say, it comprises only individual light or feeder railways or extra-municipal tramways for the construction and management of which specific provision has been made by an Act of the local legislature of the province concerned. Hitherto, no such legislation has been enacted with the result that entirely in question in the provincial schedule, as also the qualifying words to entry 5(c)* in the central schedule, have no operation, and all existing railways of every description are included in the central subject defined in the last-named entry. It should also be observed that the provincial subject in question is "subject to legislation by the Indian Legislature in the case of any such railway or tramway which is in physical connection with a main line or is built on the same gauge as an adjacent line," the effect being that a provincial bill designed to provide for the construction of a light or feeder railway or extra-municipal tramway in physical connection with a main line or built on the same gauge as an adjacent main line would require the previous sanction of the Governor General under clause (f) of sub-section (3) of section 80 A of the Government of India Act; and it may be presumed that few occasions are likely to arise in which provision will be made by local legislation for the construction of a light or feeder railway not answering one or other of these descriptions.

15. The proposal set forth in this Resolution are not designed to evade the legitimate operation of the legal position described, in the case of District Board railways, in paragraph 12 and in the provincial light and feeder railways, in paragraph 14; but it follows from the Boards that Local Governments and District or Local Boards should not, in the event of special circumstances, be encouraged to build branch or feeder lines. Words, the normal procedure will be the construction by the Government of at its cost by a Company, of a branch line which a District Board of Government desires to have constructed and is prepared to guarantee. But, of the Government programme not permit the construction of such a line within a reasonable possibility of permitting a District Board or Local Government from its own funds would require

16. The above the procedure adopted in the past and the procedure which it but the future for the financing of the construction of branch line dopt in the remunerative from the Point of view
* "Railways and so for they are not classified as provincial

of railway earnings only. But there are cases where the Local Governments or local authorities may desire that a line should be constructed which will not be remunerative on railway earnings and the construction of which is desired by them for purely local reasons on account of the administrative advantages it is likely to confer or for the development of a particular area. It is proposed that in future the Railway Board in such circumstances should have power to arrange for the construction of the line from railway funds if the Local Government or the local authority guarantees the Railway Board against loss. The guarantee would be to the effect that the local authority would make up the difference between the net earnings and the interest and other charges payable. As it is not desirable that the Central Government should make any profit out of such contributions by local authorities, it is also proposed that where contributions have been made by a local authority for this purpose the repayment of such contributions should be a first charge on any net profits subsequently realised from the line, should the line prove remunerative.

17. The Central Government must, however, retain the power to decide whether a line is to be built or not; the proposals in the preceding paragraph must not be taken to imply that a Local Government by giving a guarantee can require the Railway Board to construct a line. Proposals of a Local Government might run counter to the general railway policy or might take the form of short-circuiting railway traffic and so lead to a reduction of receipts from existing lines.

18. These proposals have been circulated to Local Governments and have been generally welcomed by them as affording a suitable method of reconciling central and local interests and of providing for local bodies and Local Governments a method of securing the construction of railways which may be required for purely local reasons, and which, while not likely to prove remunerative on purely railway earnings, are likely to provide such indirect benefits to Local Governments and local bodies as will more than repay the amounts paid under the guarantee. Several such arrangements have already been made with Local Governments.

APPENDIX F.

Statement of Gazetted Officers and Officers of corresponding rank employed on Class I Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1928 as compared with 1st April 1927.

Statement of Unassisted Officers and Officers of corresponding rank employed on Class I Railways, Railway Board and other Railway officers (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1928 as compared with 1st April 1927.

Item	A. B.		R. W.		U. & N. W.		D. & P. O. L.		B. & M. A.		E. B.		J. E.		G. I. P.		M. & S. M.		K. W.		R. & W.		S. L.		Ry. Board and Microfilm- Out officers		TOTAL		
	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	1927	1928	
1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	14	14	
1. Agency Employees																													
1-01. Managers	8	3	3	4	2	4	7	7	4	3	4	4	7	5	7	8	3	4	7	7	1	1	3	3	2	2	58	62	
1-02. Supervisors																													
1-03. Foremen																													
1-04. Clerks																													
1-05. Stenographers																													
1-06. Messengers																													
1-07. Janitors																													
1-08. Other classes																													
1-09. Total			2	3			1	1	2	2			5	4	2	1	2	2	2	2			1	2			17	17	
2. TOTAL	8	3	7	7	2	4	8	8	6	5	4	4	12	9	9	9	7	8	9	9	1	1	4	5	2	2	74	78	
3. Railway Board																													
3-01. Managers	30	30	27	29	21	21	31	41	33	34	31	34	70	64	71	77	47	47	51	75		5	51	46	10	22	505	568	
3-02. Supervisors																													
3-03. Foremen	4	5	10	10	2	2	12	12	1	3	17	17	41	48	8	9	20	18	48	47			23	23	1		120	137	
3-04. Clerks	3	2	2	2							1		5	6	4	2		1	9	6			2	2			24	24	
3-05. Stenographers	3	2	8	10			3	3	10	6	2	2	4	17	3	2	2	3	16	18			1	2	1		65	67	
3-06. Messengers							4	4					2	8	4	5	7		2	2			2	1	1		22	30	
3-07. Janitors	9	10	20	20	2	2	19	19	11	10	21	22	56	78	21	20	22	22	76	73			21	26	3	1	202	214	
3-08. GRAVE TOTAL	38	38	47	49	23	23	70	83	44	44	52	56	125	147	92	97	69	69	127	120	5	5	74	71	13	23	617	677	
4. Transportation																													
4-01. Managers	6	19	22	21	11	12	20	20	22	22	19	22	37	42	42	23	22	44	41			Included under Commercial		14	15	17	15	204	200
4-02. Supervisors																													
4-03. Foremen	1	1	11	10	2	2	6	5			8	10	5	6	2	2	6	6	11					5	8	2	2	57	51
4-04. Clerks	1	1	3	3			1	2			6	4	6	7	1	1		6	7						1	1	26	26	
4-05. Stenographers	6	2	1	5			2	3	1	1	5	14	10	3	3	2	3	1	2					1	1		1	38	32
4-06. Messengers							5	5	5	5			1	1					2	1							13	13	
4-07. Total	6	4	15	15	2	2	14	14	8	8	19	19	24	24	6	6	9	9	20	21					8	7	4	125	121
4-08. GRAVE TOTAL	14	24	47	47	13	14	44	43	22	23	34	38	76	81	43	40	52	51	64	62			20	20	10	10	410	401	

APPENDIX F—contd.

Statement of Gaothed Officers and Officers of corresponding rank employed on Class I Railways, Railway Board and other Railway Offices (excluding H. B. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1928 as compared with 1st April 1927—contd.

Item.	A. B.		D. N.		D. & N. W.		D. E. & O. I.		R. C. M. A.		T. B.		E. J.		G. I. P.		M. & S. M.		N. W.		R. & E.		S. I.		Ry. Board and Miscellaneous Offices.		TOTAL.	
	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.
2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
A. Road—																												
P. W. Employees	53	68	168	159	61	64	149	148	94	95	78	84	226	213	193	190	156	155	201*	186	12	11	103	118	56*	69	1,136*	1,085
D. C. Railway Officers																												
(a) Division	39	11	28	28	1	0	21	21	4	7	38	37	60	74	23	28	33	29	76*	74	2	2	40*	48	10*	8	249*	264
(b) Division	3	6	6	5	..	..	1	3	..	..	..	..	13	17	6	4	..	1	21	31	1	1	3	2	1	2	38	46
(c) Anglo-Indians	5	7	12	16	..	..	10	11	14	10	11*	16	24	26	13	14	7	9	21*	24	..	..	4	5	11*	13	100*	102
(d) Other officers	..	..	..	..	..	..	15	18	8	6	4	5	6	7	9	10	8	3	..	13	..	..	3	1	2*	1	24	25
Total	10	23	46	59	8	8	47	49	28	28	54*	63	100	124	26	19	43	42	126*	141	3	3	49*	53	24*	24	482*	502
B. R. C. M. A.	73	72	227	217	66	70	196	189	115	120	122*	127	263	247	227	246	168	167	237*	223	15	14	134*	123	10*	27	2,148	2,175
C. T. B.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
D. G. I. P.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
E. M. & S. M.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. N. W.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
G. R. & E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H. S. I.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
I. Ry. Board and Miscellaneous Offices.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(a) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Division	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Other officers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

* Revised figures.

APPENDIX F—contd.

Statement of Subordinates, drawing Rs. 250 per mensem and over or on scales of pay rising to Rs. 250 per mensem and over, employed on Class I Railways, Railway Board and other Railway offices (including H. K. H. the Nizam's Guaranteed State and Jodhpur Railways) on 1st April 1928 as compared with 1st April 1927.

Item.	A. B.		B. N.		B. & N. W.		B. D. & C. I.		DURGA.		M. B.		R. I.		G. I. P.		M. & S. M.		T. W.		R. & E.		S. I.		TOTAL.		
	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
L. Agency Department—																											
1-01. Nizam's																											
1-02. Statutory Railways—																											
(a) Muslim																											
(b) Hindu																											
(c) Anglo-Indians																											
(d) Other classes																											
(e) Total																											
GRAND TOTAL																											
L. Agency Department—																											
2-01. Nizam's																											
2-02. Statutory Railways—																											
(a) Muslim																											
(b) Hindu																											
(c) Anglo-Indians																											
(d) Other classes																											
(e) Total																											
GRAND TOTAL																											
S. Transportation—																											
3-01. Nizam's																											
3-02. Statutory Railways—																											
(a) Muslim																											
(b) Hindu																											
(c) Anglo-Indians																											
(d) Other classes																											
(e) Total																											
GRAND TOTAL																											

Revised figures.

APPENDIX F—concl'd.

Statement of Subordinates, drawing Be. 250 per mensem and over or on scales of pay rising to Rs. 250 per mensem and over, employed on Class I Railways, Railway Board and other Railway offices (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on 1st April 1928 as compared with 1st April 1927—concl'd.

Name.	A. H.		B. K.		B. & N. W.		D., H. & C. L.		R. & M. A.		E. S.		L. F.		G. I. P.		M. & A. S. M.		N. W.		R. & K.		S. I.		TOTAL.			
	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.	1928.		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
A. General.																												
401. Transport			Included under Transportation.		3	2	Included under Transportation.							11	10	10	8	Included under Transportation.		6	12			1	2	21	21	
402. Railway Station			Included under Transportation.															Included under Transportation.										
403. Station			1	1		1								36	30	23	27			11	11			5	4	71	70	
404. Station														4	6	2	4			4	2					10	13	
405. Anglo-Station														10	10	6	15			4	2	7	7			27	33	
406. Other classes																	8	8								8	10	
407. Total			1	1		1								46	45	39	62			19	19	7	7	9	6	116	126	
GRAND TOTAL			1	1		4	2							55	52	49	89			25	21	7	7	4	5	145	159	
B. Other Department.																												
408. Transport			31	37	265	252	14	14	77	75	14	18	65	60	304	326	64	55	60	60	166	163	4	4	29	34	1,152	1,069
409. Railway Station																												
410. Station			3	3	23	13			15	27	3	9	15	17	38	47	17	28	4	6	49	38	1	1	7	5	169	204
411. Station			1	1	2	2	1	1	5	2	1	1	1	1	5	7	2	1	1	1	27	25					47	50
412. Anglo-Station			18	16	102	179	16	18	320	356	100	112	72	78	564	602	124	120	109	96	106	208	2	2	127	124	1,795	1,521
413. Other classes			7	6	7	4			47	64	7	12	1	1	4	25	25	9	6	27	20	1	1	2	1	127	127	
414. Total			24	26	228	196	17	19	362	371	115	122	83	97	600	640	160	178	114	108	200	230	5	5	128	122	2,123	2,080
GRAND TOTAL			24	26	493	488	21	23	440	442	130	140	157	159	975	1026	224	233	174	168	454	493	9	9	165	166	2,221	2,149
C. Other Department.																												
415. Transport																												
416. Railway Station																												
417. Station			1	1	4	2			5	6	2	2	4	4	18	15	2	2	1	1	10	12			1	2	62	67
418. Station									1																		9	6
419. Anglo-Station			1	1	10	12	1	1	4	2			5	5	16	14	5	5	5	5	6			2	5	57	64	
420. Other classes					1				2	3							1	1			2						9	8
421. Total			2	3	15	14	1	1	12	11	2	2	11	11	34	29	8	8	6	6	28	27			3	7	127	124
GRAND TOTAL			5	3	37	32	1	1	16	16	2	2	11	11	41	35	10	12	6	6	44	40			3	5	164	164

2. Other Departments—

11-01. Europeans	6	4	27	20	8	5	19	19	—	—	—	1	79	84	5	5	9	1	5	8	..	..	1	1	167	167	
11-02. Mandatory Indians—																											
(a) Muslims	7	7	48	46	9	4	56	55	52	21	39	40	100	197	35	27	11	12	21	68	9	2	17	20	628	627	
(b) Muslims	..	..	1	..	..	..	..	..	..	..	5	1	1	7	9	..	..	..	18*	19	..	..	..	..	39*	38	
(c) Anglo-Indians	1	4	74	69	19	18	21	22	15	16	21	10	64	77	28	22	22	20	10*	10	1	1	4	4	229*	228	
(d) Other classes	1	..	2	1	..	1	25*	26	10	11	1	1	1	29	20	7	7	11*	15	..	..	..	..	6	6	60	67
(e) Total	10	21	125	112	22	25	114*	115	62	33	61	67	172	214	47	49	40	38	96*	109	5	3	24	27	729*	721	
11-03. GRAND TOTAL	10	10	122	140	24	28	132*	134	22	29	62	68	201	220	72	74	49	41	101*	117	8	5	26	28	822*	1,008	
12. Railway Board and other Railway offices—																											
12-01. Europeans	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	5	
12-02. Mandatory Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	84	82	
(a) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	10	
(b) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	11	
(c) Other classes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	8	
(d) Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	218	222	
12-03. GRAND TOTAL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	222	222	
13. Senior Subordinates—																											
13-01. Europeans	19	22	322	317	29	10	144	145	12	19	120*	106	527	594	335	305	73	75	322	310	9	7	43	55*	2,078*	2,042	
13-02. Mandatory Indians	22	27	175	171	11	13	221	227	57	105	122	141	672	612	165	217	36	26	342*	202	4	6	69*	76	1,775*	1,729	
(a) Muslims	3	2	12	12	4	5	32	30	9	19	7	9	21	43	30	26	1	2	127*	170	1	1	5	3	296*	227	
(b) Anglo-Indians	27	27	109	100	25	29	277	270	227	245	175*	162	1,007	1,009	720	742	122	176	604*	392	12	12	163	175	2,791*	2,722	
(c) Other classes	9	7	13	9	..	1	159	159	41	43	6	11	16	10	142	157	15	15	72*	96	1	1	9	7	284*	252	
(d) Total	27	26	214	207	29	29	289	289	266	210	214*	219	1,227	1,491	1,057	1,162	234	229	1,060*	662	12	12	251*	260	3,462*	3,404	
13-03. GRAND TOTAL	26	100	626	614	106	108	678	676	266	222	240	247	2,222*	2,075	1,826	1,427	256	204	2,290*	1,261	24	22	260*	218	5,632*	5,606	
14. Senior Subordinates—																											
14-01. Europeans	+5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
14-02. Mandatory Indians	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(a) Muslims	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(b) Anglo-Indians	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(c) Other classes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(d) Total	+1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
14-03. GRAND TOTAL	+4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
15. Percentage of total—																											
15-01. Europeans	10.5	22.0	34.4	20.0	21.1	27.9	14.9	15.2	6.7	4.1	25.7	23.8	20.2	22.6	24.1	20.9	24.5	24.7	22.0	22.8	25.0	22.2	15.2	18.4	24.7	22.9	
15-02. Mandatory Indians	22.2	27.0	16.0	19.2	13.2	21.8	26.4	22.0	24.5	29.1	30.5	18.4	20.2	11.8	14.9	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	
(a) Muslims	3.1	3.0	1.2	1.2	2.2	4.2	3.1	2.2	2.0	1.5	2.0	1.7	3.1	2.2	2.5	0.3	0.7	12.1	11.2	4.2	4.0	1.7	1.0	2.5	2.8		
(b) Anglo-Indians	25.6	41.0	48.7	42.7	21.0	21.6	25.9	25.9	25.6	27.8	29.3	41.1	40.1	40.8	21.7	40.9	55.9	57.9	21.4	27.1	50.0	49.0	24.8	25.6	48.0	44.1	
(c) Other classes	9.4	7.0	1.4	1.6	..	6.9	10.3	10.5	10.8	10.3	1.5	2.4	0.5	0.5	10.2	10.5	4.0	4.9	6.0	7.3	2.5	4.0	3.0	2.2	5.7	6.1	

* Revised figures.

APPENDIX G.

Statement showing the number of appointments created and vacancies which occurred among officers of Gazetted rank on State Railways and of corresponding rank on Companies' Railways (Class I) excluding H. E. B. the Nizam's Guaranteed State and Jodhpur Railways, and how they were filled during 1927-28.

Departments.	Number of new appointments created during the year.	Number of appointments abolished during the year.	Number of vacancies which occurred during the year.	Number of vacancies which occurred in previous years not filled in three years immediately preceding the year.	Number of vacancies to be filled.	Number of vacancies not filled by end of year.	Number of vacancies actually filled.	FILLED BY					
								Exempt.	GRANT-IN-AID RAILWAYS.				TOTAL.
									Indian.	European.	Local.	Other.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
State Worked Railways.													
1. Agency	..	..	..	2	2	..	..	..	..	..	..	..	..
2. Engineering	(a) 22	..	19	3	48	37	11	11	11	..	..	1	22
3. Transportation and Commercial.	(a) 13	..	7	10	29	21	8	8	8	..	..	..	17
4. Mechanical.	(a) 10	..	6	14	27	13	14	13	13	..	..	1	4
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	(a) 12	..	8	..	10	8	14	8	8	..	..	1	12
7. TOTAL	1927-28	30	..	33	87	121	56	64	50	8	10	3	65
	1926-27	64	6	51	54	107	27	60	40	20	7	3	60
8. Percentage of appointments to number of vacancies filled.	1927-28	48.3	..	..	..	..	..	..	..	..	..	..	..
	1926-27	45.6	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of State Railway appointments to number of vacancies filled.	1927-28	64.2	..	..	..	..	..	..	..	..	..	..	..
	1926-27	64.2	..	..	..	..	..	..	..	..	..	..	..
Other Railways.													
Assam Duple Railway.													
1. Agency	..	1	1	..	..	..	..	..	..	..	..	..	..
2. Engineering	..	..	..	..	..	..	..	..	..	..	..	..	..
3. Transportation and Commercial.	..	..	..	..	..	..	..	..	..	..	..	..	..
4. Mechanical.	..	..	..	..	..	..	..	..	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	..	..	..	..	..	..	..	..	..	..	..
7. TOTAL	1927-28	1	1	2	2	2	2	2	2	1	1	..	4
	1926-27	7	..	6	5	14	8	12	4	2	9	..	8
8. Percentage of appointments to number of vacancies filled.	1927-28	50.0	..	..	..	..	..	..	..	..	..	..	..
	1926-27	48.3	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of State Railway appointments to number of vacancies filled.	1927-28	50.0	..	..	..	..	..	..	..	..	..	..	..
	1926-27	50.0	..	..	..	..	..	..	..	..	..	..	..
Bengal and North-Western Railways.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	..	..	..	..	..	..	..	..	..	..	..	..	..
3. Transportation and Commercial.	..	..	..	..	..	..	..	..	..	..	..	..	..
4. Mechanical.	..	..	..	..	..	..	..	..	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	..	..	..	..	..	..	..	..	..	..	..
7. TOTAL	1927-28	1	..	..	..	..	..	..	..	..	..	..	..
	1926-27	..	..	..	..	..	..	..	..	..	..	..	..
8. Percentage of appointments to number of vacancies filled.	1927-28	50.0	..	..	..	..	..	..	..	..	..	..	..
	1926-27	50.0	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of State Railway appointments to number of vacancies filled.	1927-28	50.0	..	..	..	..	..	..	..	..	..	..	..
	1926-27	50.0	..	..	..	..	..	..	..	..	..	..	..

(a) Includes year-ended 1927-28 including of performance.

APPENDIX G-contd.

Statement showing the number of appointments created and vacancies which occurred among officers of Oatented rank State Railways and of corresponding rank on Companies' Railways ((flats I) excluding H. S. H. the Nmm's Guaranteed State and Jodhpur Railways, and how they were filled during 1927-28-contd.

Departments	Number of new appointments created during the year.	Number of appointments abolished during the year.	Number of vacancies which occurred during the year.	Number of vacancies which occurred in previous years but filled in this year.	Number of vacancies to be filled.	Number of vacancies not filled up during the year.	Number of vacancies actually filled.	FILLED BY					
								BY CATEGORY					Total.
								European	Indian	Muslim	Anglo-Sikhs	Other	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Malabar Nipper Railway.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	11	1	6	1	17	..	17	5	7	..	..	..	12
3. Transportation and Commercial.	1	1	3	2	4	..	4	3	..	..	1	..	1
4. Mechanical	..	1	3	1	5	5	3	3	1	..	..	..	2
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	2	1	5	..	6	2	4	5	..	..	1	..	1
7. TOTAL	1927-28 1928-27	15 1	4 4	16 6	4 5	25 6	4 2	38 1	15 1	..	..	..	16 1
8. Percentage of European to number of vacancies filled.	1928-27	50.0	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of European to number of vacancies filled.	1927-28	66.6	..	..	..	..	..	..	..	..	..	..	..
10. Percentage of European to number of vacancies filled.	1927-28	58.3	..	..	..	..	..	..	..	..	..	..	..
Bombay, Baroda and Central India Railway.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	..	7	11	3	6	6	6	2	..	2	..	2	5
3. Transportation and Commercial.	..	..	5	3	4	3	1	..	..	1	..	..	1
4. Mechanical	..	..	..	2	2	..	3	1	..	..	1	..	1
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	1	1	2	..	2	2	..	..	..	..	..
7. TOTAL	1927-28 1928-27	1 7	7 4	14 19	6 13	16 23	7 9	6 14	5 4	2 2	1 1	1 2	4 10
8. Percentage of European to number of vacancies filled.	1928-27	50.0	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of European to number of vacancies filled.	1927-28	66.6	..	..	..	..	..	..	..	..	..	..	..
10. Percentage of European to number of vacancies filled.	1927-28	71.4	..	..	..	..	..	..	..	..	..	..	..
11. Percentage of European to number of vacancies filled.	1927-28	64.6	..	..	..	..	..	..	..	..	..	..	..
Burma Railway.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	..	..	3	..	3	1	10	6	2	..	..	..	4
3. Transportation and Commercial.	..	..	1	..	..	3	3	2	..	..	..	..	..
4. Mechanical	..	..	1	..	..	..	..	..	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	1	..	..	..	..	..	1	..	..	..	1
7. TOTAL	1927-28 1928-27	.. 6	.. 2	5 6	3 7	13 23	13 9	18 9	11 1	2 ..	..	..	6 5
8. Percentage of European to number of vacancies filled.	1928-27	62.5	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of European to number of vacancies filled.	1927-28	66.7	..	..	..	..	..	..	..	..	..	..	..
10. Percentage of European to number of vacancies filled.	1927-28	10.0	..	..	..	..	..	..	..	..	..	..	..
11. Percentage of European to number of vacancies filled.	1927-28	22.2	..	..	..	..	..	..	..	..	..	..	..

APPENDIX H.**Officers of the Railway Department (Railway Board) on 31st March, 1928.**

The Hon'ble Sir GEORGE RAINY, K.C.I.E., C.S.I., I.C.S.
Member of Council of Governor General.

Railway Board.

Sir Clement Hindley, Kt	Chief Commissioner of Railways (on leave).
Sir Austen Hadow, Kt., C.V.O.	Chief Commissioner of Railways (Offg.).
Mr. A. A. L. Parsons, C.I.E., I.C.,	Financial Commissioner of Railways.
Sir Austen Hadow, Kt., C.V.O	Member (Officiating Chief Commissioner).
Mr. P. C. Sheridan, C.M.G. .	Member.
Mr. J. M. D. Wrench .	Member (offg.).
Mr. A. Lines .	Director, Civil Engineering.
Mr. A. J. Chase, O.B.E.	Director, Mechanical Engineering.
Mr. A. M. Hayman, O.B.E.	Director, Finance (on leave).
Mr. P. R. Rau, M.A. .	Director, Finance (Offg.).
Mr. J. C. Highet .	Director, Establishment (Offg.).
Mr. H. C. Sparke .	Director, Traffic
Mr. J. Kaul, M.A. .	Secretary (Offg.).
Mr. J. Kaul, M.A. .	Deputy Secretary (Offg. Secretary).
Mr. I. T. St. C. Pringle .	Deputy Secretary (Offg.).
Mr. J. F. Blackwood	Temporary Officer, Programme.
Mr. P. R. Rau	Deputy Director, Finance (Offg. Director).
(Mr. H. J. M. DeLange .	Deputy Director, Finance (Offg.).
Mr. R. C. Case	Deputy Director, Stores.
Mr. B. Moody .	Deputy Director, Traffic and Statistics.
Rai Bahadur B. D. Puri	Assistant Director, Finance (on deputation).
Khan Sahib Barkat Ali .	Assistant Director, Finance (Offg.).
(Mr. Gopal Nath Mehra .	Assistant Director, Statistics.
Mr. E. C. Rundlett	Chief Superintendent.

Attached Officers.

Mr. A. F. Harvey .	Technical Officer (on leave).
Mr. F. E. Cole	Technical Officer (Offg.).
Mr. W. A. Bailey .	Timber Advisory Officer.
Mr. P. H. Maflin, O.B.E., M.O.	Officer on Special Duty.
Mr. A. D. Green .	Officer on Special Duty.
Mr. D. S. Burn	Officer on Special Duty.
Mr. H. Dale Green	Officer on Special Duty.
Major F. H. Budden, M.O., R.E.	Officer on Special Duty.
Mr. J. A. Tomlinson	Officer on Special Duty.

Accountant General* Railways.

Mr. J. M. Hartley	Accountant General, Railways.
Mr. B. N. Mitra, B.A.	Officer on Special Duty.
Mr. C. H. James .	Deputy Accountant General, Railways (Inspectwji).-
Mr. I. S. Puri, M.A.	Deputy Accountant General, Railways " Quarters).
Mr. R. V. Ramchandani, M.A.	Audit Officer.

