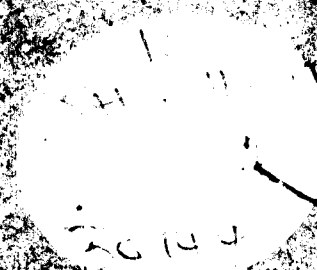


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NO. XLIV

REPORT OF THE RAILWAY DEPARTMENT

FOR 1856



SELECTIONS

FROM

THE RECORDS

OF THE

MADRAS GOVERNMENT.

Published by Authority.

No. XLIV.

REPORT

OF THE

RAILWAY DEPARTMENT.

FOR

1856.

MADRAS:

PRINTED AND PUBLISHED BY H. SMITH, AT THE FORT ST. GEORGE GAZETTE PRESS.
1857.

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No

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Secretary to Government
Revenue & P. W. Department

செப்பனிடுவர் பெயர்
செப்பனிழைத்தானாக எடுத்துக் கொள்ளப்பட்ட நாள்
செப்பனிட்டு முடிந்த நாள்
ஆதாரங்க்கும்
பா.ஏ.
கொடாப்பம்.

ஆதாரங்க்கும்
உதவியாளர்
கொடாப்பம்.

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Extract from the Minutes of Consultation, under date the 14th July 1857.

Read letter from the Consulting Engineer for Railways.

Submits his report for the year 1856, together with a copy of the Railway Agent's report to the Board of Directors, dated 8th May 1857. (Here enter 24th June 1857, No. 231.)

The Consulting Engineer submits a copy, with enclosures, of the Report for 1856, made by the Agent to the Directors of the Railway Company. The Report of the Consulting Engineer has, the Government observe, been delayed considerably. It is noticed, further, that copy of the Agent's letter was not transmitted to Colonel Pears, until ten days after the dispatch of the original to England. The Agent's letter bears date the 8th May.

2. As Colonel Pears' Report has epitomized into a very small compass the narrative of the events of the year, it is unnecessary here to do more than refer to such points as may be of particular interest. The letters to the Board of Directors, from the Heads of the various Departments, contain a number of interesting statements and suggestions, which the Consulting Engineer would, the Government are of opinion, have done well in bringing prominently to their notice.

3. The two great Bridges, both lying between Vellore and Vaniembaddy, and termed respectively 'Goriattum' and 'Palar,' are progressing but slowly. The Acting Chief Engineer attributes this to the long continuance of the Monsoons, which, in 1856, were extremely heavy. He complains too of the want of Iron Pumps, to assist in the excavations. Such articles are not procurable in this country, and Indents on the Company in England, he takes occasion to complain, are only attended to, in many cases, after the lapse of as much as 15 months, the articles asked for reaching Madras only when the necessity for their use had ceased to exist. The Government resolve to bring this inefficiency in the supply of Stores to the particular notice of the Honorable Court.

4. The supply of Sleepers—which, however, are procured in this country—is extremely scanty. The deficiency has not led to any serious delays at present, but, in the opinion of the Chief Engineer, it may ere long do so. The Consulting Engineer is in favor of the system of Sealed Tenders. The Agent advocates a resort to regular Contractors—while the Chief Engineer would empower the District Engineers to purchase supplies, as required. This subject must be carefully watched by Colonel Pears.

5. The manufacture of Carriages, Trucks, &c., appears to be carried on in a satisfactory manner.

6. The Line to Arcot was opened on the 1st July of last year only. The results of the Traffic for the six months of 1856 are given in Appendix A of the Report.

The receipts amounted, both for Passengers and Goods, to Rupees 1,11,772-2-0. The lightness of the Traffic is attributed by the Consulting Engineer to the prohibitive nature of the fares demanded by the Company. By the

ERRATA.

APPENDIX I.

- Page VII Letter No. 219, para 4, 5th line—For "the Railway," read "the Railway."
 „ XVII Para 5, 2nd line—for "330 p.m." read "3.30 p.m."
 „ XXXI Para 12, 4th line—for "the European staff," read "the European staff."

APPENDIX II.

- „ 21 Obs. Para 9, for "with exception of that" read "with the exception of that."
 „ 29 Obs. For "Plan No. 40 Engineer shed," read "Plan No. 40 Engine shed."
 „ 45 Para 9, 3rd line—for "whenever the the word Masonry," read "whenever the word Masonry."
 „ 49 Letter Para 1, for "with reference to your letter," read "with reference to your letters."
 „ 66 Para 6, 3d line—for "road lately made," read "road lately made."
 „ 92 Statement 4th line, column "replies to Collectors," for "28th January 1856" read "9th January 1856."
 „ „ 5th line, column "date of Instructions to the Agent &c., for "Do. Do." read 31st "Do. Do."
 „ 92 Column of remarks 2nd note, last line—for "this sanction" read "this section."
 „ 101 Para 9, last line—for "the line required," read "the time required."
 „ 105 Obs. No. 160, 2nd line—for "some portion of the line," read "some portions of the line."
 „ 109 Letter No. 197, and enclosures—from the Agent and Manager at page 107, should have been printed after letter No. 81—to the Agent at page 109.
 „ 102 Letter No. 81, 3rd para 8th line—for "Sunkerrydroog," read "Senkerrydroog."
 „ 117 Paras 7 and 10, 2nd line—for "Cavvery," read "Cawvery."
 „ 120 Para 40, 2nd line—for "whatever importance," read "whatever information."
 „ 125 Min. of Con. 4th line—for "via Ooduloor," read "via Wonduloor."
 „ 127 Under "land for Railway," read "No. 258."
 „ 135 Letter No. 4565, para 2, 1st line—for "and is given," read "land is given."
 „ 154 Letter No. 339, 5th para, 4th line—for "as far it lays," read "as far as it lays."
 „ 155 Para 8, 9th line—for "showing an increase on the month," read "showing an increase in the month."
 „ 165 Para 6, last line—for "to the arrangements," read "to the arrangements."
 „ 187 Letter No. 827, last line—for "in the the records" read "in the records."
 „ 172 The words "submitted (with report) for the orders of Government, &c. &c. &c., after letter No. 172, should not have been printed.

Traffic Manager it is set down to an exactly opposite cause. Considering the fact that 75 per cent. of the Passenger Traffic travels at a half-penny a mile, and 75 per cent. of the Goods' Traffic at a penny per ton per mile, Mr. Fletcher is not astonished at the lightness of the returns. Both Colonel Pears and Mr. Fletcher, it is gratifying to find, are extremely sanguine of the good effect likely to result in this respect, as the Line extends. Much might be done even now, Mr. Fletcher believes, by an increase in the number of the Trains run, and in starting mixed Trains, of Goods and Passengers; but the Consulting Engineer has, in the opinion of Government, shown good reason for objecting to these suggestions. The extension of a branch Line to the Salt Cotaurs will result in securing the conveyance of that commodity almost entirely by rail, at present the bandies monopolise this Traffic.

7. There have been a number of arrivals of newly appointed officials of all classes during the past year. The Acting Chief Engineer has recommended that two additional Engineers should be sent out, in order to take up at once any vacancies that may occur from sickness or other causes. Colonel Pears has not stated how far this is desirable.

(True Extract.)

(Signed) E. MALTBY,

Acting Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 231.

To E. MALTBY, Esq.,

Acting Chief Secretary to Government.

SIR,

Dated 8th May 1857.

I have the honor to submit, for the information of Government, copy of the Report for 1856, from the Agent and Manager to the Directors of the Railway Company.

2. The Report, I regret to say, is late, and has been detained longer than I could have wished in this Office, in consequence of an unusual press of business.

3. At the beginning of the year (1856) the Railway Company had in their employment 16 Engineers, exclusive of the Chief Engineer. The whole of the Line, between Madras and the Western Coast, had been taken in hand, with the exception of District 12, in the Coimbatore District, for which there was no Engineer available.

4. During the past year the following Engineers arrived, viz :—

Mr. R. Rowlands,
Mr. A. Stein,
Mr. T. M. H. Johnston,
Mr. C. E. Purdon,

5. These Gentlemen were set to work in the examination and survey of a feasible Line for a Railway, from a point (13 miles from Madras) on the Western Line, towards Cuddapah and Bellary, under the supervision of Mr. G. Smart, a 1st Class Engineer. The Reports and Surveys, as far as they have been received, are satisfactory.

6. Up to the beginning of 1856, actual work had been undertaken upon 10 Districts. During that year the Agent was authorised to commence work on other portions of the line as follows :

				Date of authority.
District 5	Sections 1 and 2,	24 miles.....		January and March.
9	" 1 and 2,	18 "		January, March and April.
10	" 1	6 "		July.
11	" 1 and 2,	24 "		March and May.
12	" 1	6½ "		November.
15	" 1	12 "		March.
16	" 1 and 2,	19 "		February and April.

7. It will be seen from this, that at the close of the year, with the exception of portions of Districts 10, 12 and 15, the necessary surveys for which had not been received, the Railway Company had authority to commence work on the whole line.

8. The amount of work actually executed during 1856, was, according to Reports furnished by the Agent, as follows :

District No.	Earthwork cubic yards.	Masonry Cubic yards.
1	14,145	1,398
2	16,859	0
3	176,064½	8,238½
4	706,457	14,567½
5	457,462	2,252
6	656,261½	1,889½
7	456,327	6,917
8	232,152	10,792½
9	508,280	0
10	89,425	0
11	515,757½	865
12	525,825	12,520½
13	936,087	341
14	196,710	0
15	346,844	210½
16	425,109	0
17	32,822½	3,521½
Madras Terminal Station.....		
Total.....	6,292,588	63,513

9. The average monthly amount of work done during the year, under these two heads, was therefore, Earthwork, Cubic yards 524,382, Masonry, Cubic yards 5,293.

10. Assuming 300 miles to have been in hand during the year, with an average estimate of 50,000 yards of Earthwork per mile, there would have been executed in the year the Earthwork of about 120 miles of Railway; and the whole distance actually in hand would be completed in 2½ years.

11. The progress in Masonry has been less satisfactory throughout the line, than that of Earthwork; and indeed this portion of the work seems now to be the chief impediment to an early completion of the whole.

12. The two most important works, between Vellore and Salem, the Goriattum and Palar Bridges, the former at the 97th, the latter at the 106th mile, from Madras, were sanctioned, respectively, on the 16th October 1855, and the 7th February 1856, and had up to the end of the year made very little progress.

13. These two works were reported by the late Chief Engineer to have been commenced in February 1856. Their progress has been unsatisfactory, and is noticed in the accompanying Report from the Acting Chief Engineer to the Railway Board.

14. Between these works and the Western Terminus in Malabar, i. e., over a line of about 300 miles in length, the works of chief importance are, the cuttings at the crest of the Moroor Pass near Salem,—the bridge across the Caverry lately commenced,—some heavy cuttings in rock between Coimbatore and Palghat,—bridges across the Thootha River in District 16, and the Kuddulhoondy Estuary near Beypoor. For the latter working plans have not yet been submitted; and further information and an Estimate have been called for in the case of the former.

15. No Plans or Estimates have yet been received for the Beypoor Terminal Station buildings.

16. The expenditure in the Engineer Department (exclusive of Establishment) sanctioned by Government, during the year, amounted to Rupees 14,59,941-6-7, while the pay of the Engineer Establishment disbursed under the same sanction amounted, in the aggregate, to Rupees 2,62,773-0-11. The cost of Superintendence has been to the Expenditure as 1 to 5.

17. The cost at which the Earthwork has been executed, during the year, has been somewhat higher than formerly.

18. The average cost of work executed up to the end of 1856, upon certain Districts, had been as follows :

Districts.	Earthwork per cubic yard.			Masonry per cubic yard.		
	Rs.	A.	P.	Rs.	A.	P.
4	0	2	7	4	5	10
6	0	2	11	5	1	3
7	0	2	11	5	6	10
8	0	3	2	3	4	8
13	0	2	0	3	7	0

19. The supply of Sleepers, during the past year, falls somewhat short of that obtained during the previous year.

20. The Agent and Manager has been frequently reminded of the necessity of inviting Tenders by freely advertising the requirements of the Company, and by adhering strictly to the terms of the advertisement.

21. The expenditure of the Company upon this material will be very large, not less, I estimate it, than 30 lacs of Rupees for the whole of the Lines which they propose to undertake. It appears desirable that, in order to facilitate a supply of this nature and magnitude, every effort should be made, by a judicious perseverance in the sealed tender system, to introduce a whole-some spirit of competition. There was good promise of this at one time, but it appeared to receive a check from the introduction of another system, that of independent purchase by the District Engineers, of which the Agent observed in a letter,* dated the 10th August 1855, as follows. "I am led to believe that the practice of Sleepers being purchased from other than regular Contractors does not work well," and he proposed its abolition. The two systems of purchase can hardly exist at one and the same time.

22. There have been only 81,702 Sleepers supplied during the year (against 107,977 of the previous year) at an aggregate cost of Rupees 2,22,609-12-1, being at the rate of Rupees 2-11-7 the Sleeper. It does not appear, however, that the completion of any portion of the line has been delayed for want of Sleepers.

23. Stores have been received from England, during the year, in very large quantities, and to the value of Rupees 56,86,342-5-2—1,421,572 feet length of rails, and 630,784 chairs—the aggregate weight of the two latter articles having been 16,884 tons.

24. The works at the Madras Terminal Station were a good deal retarded, during the year, by a difficulty which the Engineer Department experienced in procuring bricks.

25. The Carriage Building Department has been actually engaged in the construction of Stock, and has turned out during the year the following :—

1st Class Carriage.....	1
Composites.....	4
2nd Class Carriages.....	4
3rd do.....	15
Break Vans.....	3
Horse boxes.....	25
Ballast Wagons.....	35
Open Goods do.....	80
Coke do.....	20
Covered do.....	50
Cattle do.....	10
Break Vans.....	6

Platform Trucks.....	20
Timber do	10
Gun Powder Van.....	1
Making a total of stock completed on the 31st December 1856 of	

PASSENGER STOCK.

1st Class Carriages.....	3
Composites.....	8
2nd Class Carriages.....	4
3rd do.....	21
Carriage Trucks.....	4
Break Vans.....	3
Horse Boxes.....	5
	48

Goods' Stock.

Ballast Wagons.....	60
Open do.....	90
Coke do.....	20
Hopper do.....	5
Covered do.....	50
Cattle do.....	10
Break Vans.....	6
Platform Trucks.....	20
Timber do.....	10
Gun Powder Van.....	1
	272

Engineer Department.....	Rupees 20,80,000
Locomotive do.....	80,000
Stores.....	8,40,000
Sleepers.....	2,80,000

26. The amount advanced from the Public Treasury to the Agent, during the year 1856, was Rupees 33,30,000.

27. The line between Madras and Arcot, 65½ miles, was opened to the Public on the 1st of July 1856, since which time the working operations have been carried on steadily and satisfactorily.

The traffic has been light, in consequence, no doubt, of the fares being beyond the means of the great mass of the population. Copy of my report thereon will be found in the Appendix.* The subject of a revision of Rates and fares is now under consideration; and with the experience of the past year it is hoped that a scale will be adopted, with the concurrence of the Railway Company, more suited to the condition and wants of the people.

ACCIDENTS.

28. There have been no serious accidents connected with the running of the trains, during the year. On two occasions only the train got off the line. In one, the accident was traceable to neglect of a Station Master, in leaving vehicles on the siding un-scotched. In the other, no cause could be assigned to it. In neither case was any one injured.

29. The ordinary daily trains required were Passengers, one each way between Madras and Arcot—Goods, one each way daily, except on Sundays. These trains ran generally with light loads—the Passenger Fares being too high, the Goods being also in some respects too high, and not being readily diverted from the old modes of transport.

30. In the Revenue Department, the Government advanced to the Agent, on account of expenditure incurred by him, during the 6 months ending the 31st December 1856, Rupees 52,453-3-8, and received into the Treasury, on account of receipts from the Traffic, Rupees 1,11,772-2-0.

31. The total receipts during the 6 months were.....Rupees 1,27,862-9-9
Total working expenses....." 66,057-8-6

Balance....." 61,805-1-3

to be credited to the Railway Company, in payment of interest already advanced on the Capital.

(Signed) T. T. PEARLS,

Consulting Engineer for Railways.

Madras, 24th June 1857.

APPENDIX I.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 423.

To LIEUTENANT COLONEL T. T. PEARLS, C. E.,
Consulting Engineer for Railways.

SIR,

I have the honor to transmit, herewith, for submission to Government, a copy of my Report, to the Board of Directors of this Company, of the Proceedings of the Executive Departments of the Company in India for the year 1856.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 18th May 1857.

No. 219.

To JAMES WALKER, Esq.,
Managing Director, Madras Railway Company, London.

SIR,

From Traffic Manager,	4th May,	No. 30
" Locomotive Supt.	4th "	No. 65
" Accountant,	7th "	No. 63
" Consulting Physician,	23rd April	No. 68
" P. W. Engineer	11th May	

1. I have the honor to submit to your Board my Report of the operations of the Executive Departments of your Company during the year 1856.

2. I transmit an original letter from your Acting Chief Engineer, dated 15th April 1857, and copies of the Reports from the Heads of the other Departments.

3. By Statements which are annexed, your Board will learn somewhat in detail the Financial Proceedings of your Company during the period under notice.

Received from Treasury,	Rupees 42,11,327 10 3
from Ship Captains, &c.	1,466 7 9
being value of Stores short landed....	
Rupees..	42,12,794 2 0

4. The amount which has been received from the Government on Capital Account was Rupees 42,11,327-10-3. We paid into the Government Treasury on Account of Revenue during the six months the Railway has been opened, sum of Rupees 1,11,772-2-0.

5. The value of Stores received from England during the year has been Rs. 56,86,342-5-2, of which Rupees 40,79,198-14-7 were on account of Permanent Way materials.

6. In respect to the Expenditure in the several Departments, I beg to refer you to Statements Nos. 2, 3, and 4.

7. No. I is a Statement shewing the progress in Surveying and Construction during the above period.

8. The event of importance, during the past year, was the opening of the Line from Madras to Arcot, a distance of 65 miles, on the 1st of July, which portion of the Line has since that date been regularly worked.

9. I have now the gratification to communicate to your Board that a further distance of 15½ miles will be sufficiently completed to enable us to open for Traffic in the month of May.

10. The Engineering Department, in the month of October last, was deprived of the supervision of its Chief, Mr. Bruce, who was necessitated by sickness to proceed to England. He was succeeded in the charge of that Department by Resident Engineer Mr. Beattie. Mr. Bruce, just previous to his departure, had, in company with the Consulting Engineer, made a tour of inspection of the whole line, but unfortunately ill health prevented him from placing on record his report of the progress which had been made on the Works.

11. Mr. Beattie, the Acting Chief Engineer, has addressed a Report to your Chairman, dated the 15th Ultimo, in which he has communicated at length the present state of the Works in the various Districts, so that it is unnecessary that I should enter upon the subject, but I may state that I am sure your Board will be pleased to observe that the Works are being carried on with considerable energy.

12. The lower story of the Terminal Buildings having been sufficiently completed has been occupied, since July last, as Offices, by several of the Departments. The upper story also is now nearly completed, and in the course of a few months will be occupied, when all the principal Offices will be congregated in the one building. This doubtless will had much to efficiency in the facility of communication, between the various Departments, thereby afforded.

Henry Backshaw, Guard.
William Coleman, do.
Henry Morse, Head Porter.
Andrew Shaw, Civil Engineer.
Robert Rowlands, do.
T. H. M. Johnston, do.
C. E. Pardon, do.
Alexander Thompson, Inspector of Masonry.
Archibald Sinclair, Carriage Foreman.
David Davies, Inspector of Earthwork.
William Shawcross, Inspector of Permanent Way.
Alfred Jordan, Inspector of Masonry.
Samuel Alderson, Inspector of Rock and Earthwork.
John Dennis, Inspector of Masonry.
John F. Vincy, do.
John Barker, do.
John Smith, do.
John Newman, Fitter and Erector.
Charles Barnes, Platelayer.
Jesse Montague, do.
George Morgan, Inspector of Permanent Way.
David Jones, Inspector of Rock and Earthwork.
Edward Jones, do.
John Garvie, Engine Driver.
Thomas Akhurst, Fireman.
William Frost, Platelayer.
George Parker, do.
John Richardson, do.

13. In the course of the last year the Officers and Subordinates, as marginally indicated have arrived from England, thereby removing the complaints of the want of Superintendence, as noticed in the former Report of this Department, particularly in the construction of the larger Bridges.

14. Your Acting Chief Engineer states that he is sanguine of being able to open the Line as far as Goriattum before the close of the year. His Department has experienced many unforeseen difficulties, in the construction of the larger Bridges, such as the Palar, and the Goriattum. These works may prove impediments to our opening the line to Vaniembady at as early a date as was anticipated.

15. The Bridges over the Muttoor and Pannar rivers are also works of considerable magnitude, but Mr. Beattie anticipates that they will be completed in sufficient time, as not to delay, on that account, the opening of the line from Vaniembady to Salem.

16. The materials for the construction of the Cauvery Bridge are being collected, and the construction of it will be commenced without delay.

17. The supply of Permanent Way materials has been sufficient to meet the demands, particularly those from England, but in regard to Sleepers there is still cause for anxiety. Contracts have been entered into for the supply of almost a sufficient number of Sleepers, except upon Districts 9, 10, 11, 12 and 13, and to some extent upon these latter also; but it is found that Contractors, being men of little Capital and no enterprize, are very dilatory in carrying out their Contracts.

18. The Acting Chief Engineer recommended that Engineers should be allowed to purchase Sleepers, and to pay for those delivered by Contractors, it being his opinion that the want of energy exhibited by them was consequent to a great extent upon their not receiving prompt payments for Sleepers delivered. It appearing to me that there could be no objection to the measures recommended, the Timber being of prescribed woods and the dimensions of the Sleepers specified, I recommended to the Government that Engineers should be allowed to pay for Sleepers received and passed by them. The Government have, however, not been pleased to accede to my recommendation. Your Board may rest assured that no step will be left untried, compatible with the existing Rules, to instil more energy if possible into Contractors, and to induce others to come forward for the supply of Sleepers.

19. Your Board is aware that, during the greater part of the past year, a few Engineers have been employed in examining and surveying the various lines of route between Madras and the neighbourhood of Cuddapah, for the course of the North West Line. The Resident Engineer in charge of the Survey is now engaged in examining the country North of Cuddapah. I am in hopes that sufficient information will have been obtained, in the course of a few months, to enable the best course for a trunk line of Railway, between Madras and Bombay, to be determined.

TRAFFIC DEPARTMENT.

20. Your Traffic Manager's Report is so full and explanatory, that it is unnecessary that I should do more than express to your Board that I concur in the opinions which he has set forth.

21. Under your Traffic Manager's able management, his Department is worked with zeal and energy.

22. It must be a subject of deep regret to all who have the interests of this Company at heart, that the Rates and Fares, and classification of goods, which your Traffic Manager's long experience led him to recommend, were not adopted on the opening of the Line; for the working of the past six months at the Rates and Fares, and under the restrictions imposed upon us, cannot be looked upon as a true criterion of what we may expect under better arrangements.

23. Our Traffic, both in Passengers and Goods, has been steady, and I believe I may say satisfactory, considering that our Terminal Station is situated at some distance from the Trunk Road, and that there are no Towns or Villages of any note, with one exception, along the whole length of the Line now open.

24. I am sure your Board will not fail to notice that the greatest economy combined with efficiency has been kept in view in the working of this Department.

25. The Locomotive Department has during the past year been steadily at work.

26. Thirteen Locomotives were landed and put together during that period.

27. In the working of the Line, I believe I may say the greatest care and attention are enforced in all matters, and although we are obliged to use Coke imported from England as our fuel, still from the great care evinced in its consumption, it cannot but be considered that the charge on the whole is moderate. The supply of Coke in the market during the latter part of the year has not been equal to that of the former; we have however still a considerable quantity of Coke on hand, and I am happy to state that that made in this country from coal sent from England has turned out particularly good.

28. In the Carriage-building Department, the construction of Rolling Stock has kept pace with the requirements of the traffic. I annex a Statement showing the quantity of Rolling Stock constructed and in hand during the past year.

[x]

29. The conduct of the European Staff and Mechanics of this Department still continues to be exemplary.

30. The pupils in this Department, also, it is reported, have evinced due attention to their duties.

ACCOUNTANT'S DEPARTMENT.

31. The system pursued in the Accountant's Department, I have much pleasure in stating to your Board, is very satisfactory: I annex a copy of the Chief Accountant's Report.

STORE DEPARTMENT.

32. In this Department up to the close of the year, there were some points not so satisfactory as I could wish. I allude particularly to the delay in bringing up the Accounts, and in some want of organization; but these matters, now that a qualified person has arrived from England to fill the Office of General Storekeeper, are being brought up and placed upon a better footing. I annex a General Abstract, showing the cost of Stores received from England and purchased in India during the past year.

MEDICAL DEPARTMENT.

33. Considering the length of the Line under construction and the vast numbers employed, it must be a matter of congratulation to your Board that few of your Engineers have been off duty.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 8th May 1857.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

TO THE CHAIRMAN AND DIRECTORS OF THE MADRAS RAILWAY COMPANY.
GENTLEMEN,

I am now called on to furnish you with a Report of our proceedings for the year, ending 31st December 1856.

2. I have already sent you a short Report of the Line, up to the 5th of the same month; since then I have examined the first 10 Districts, and hope to be able to give more satisfactory details of these.

3. I regret that I have not yet been able to visit the whole length of the Line, and my doing so I consider of so much importance, that I shall here explain how I have not been able to accomplish this.

4. As a matter of course, on being so suddenly called on to fill the place of Chief Engineer, during Mr. Bruce's absence, without any instructions or guidance, I had necessarily so much to master of the details and routine of the Office, that it was with difficulty I could carry on the current executive business of the Office to my satisfaction. I had, until the middle of December, double duties devolving on me; at this time I appointed Mr. Pardon as my Assistant, and immediately inspected the Line as far as District 10, but owing to Mr. Pardon being several times unwell during my absence, and also owing to his being unacquainted with the duties of his Office, a very great deal of work awaited me on my return, the Official correspondence with the Agent and Government alone taking up a very great amount of my time, leaving me little able to attend to the business work of the Office.

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5. Mr. Paton has now returned from England, and I am now free to march along the Line and only wait the opening of the Line to Vellore to do so.

6. In reviewing our work, during the last twelve months, I shall take each District separately, and afterwards make such remarks as I may see necessary, and I have to request you will bear in mind that I only held my present position two months out of the twelve under review, and in consequence may leave untouched matters of importance, which Mr. Bruce, were he here, would no doubt have adverted to.

DISTRICT NO. 1 AND TERMINAL STATION.

7. DISTRICT No. 1—you are aware, was opened for Public Traffic on the 1st of July 1856; little work remains to be done with the exception of pointing the Bridges, and some repairs to Embankments and Fencing running through Tanks.

8. The Bridge at the neck of the Terminal Station is all but finished, and when finished will be one of the most substantial and handsome structures of granite in Southern India.

9. At the terminal Station, all the buildings sanctioned by Government are in progress. The Store Godowns, a Carriage Shed, and some out-houses were handed over during the year for occupation. The Terminal Station building, to be used as Company's Offices, is rapidly approaching completion. The Booking Office and Passenger Shed are well advanced—there has not yet been much done to the permanent Goods' Sheds, as the building of them would interfere with the temporary arrangements for working the Line, and this I do not wish to interfere with, until the Permanent Passenger Shed is complete.

10. There has not been much done as yet to the permanent Locomotive Workshops at Perambore, the foundation of several of the buildings have been put in, and I hope to see them far forward by the end of the year on which we have entered:

11. All the buildings, both at the Terminus and at Perambore, are of Bricks, and last year, the end of it particularly, was not at all favourable for their manufacture, so much rain having fallen; otherwise the Works would have been further advanced than they are.

12. DISTRICT 2 was also opened for Public Traffic on the 1st July, and as on District 1, the only work remaining to be done is the pointing, &c., of Bridges, and the repairs of Fencing and Embankment through Tanks.

13. DISTRICT 3.—A part of this District, as far as Amoor, was opened for Public Traffic, and the work remaining to be done on the portion open is similar to that on Districts 1 and 2. The remaining portion was all but completed at the end of the year, and an Engine has been carrying our materials over this part during the last two months, and the Line is quite ready for opening.

14. The only work of any consequence remaining to be done is the Parapet coping of the Viaduct over the Poiney River.

15. DISTRICT 4.—Since the commencement of last year, we have received possession of all the land required, and in April last were enabled to commence work along the whole District. 706,457 cubic yards of earthwork has been executed during the year, or about 58,871 $\frac{1}{2}$ cubic yards per month. The works on the 1st Section, as far as Vellore, have been pushed on as much as we could, and now they are all but completed, some of our Superintendents and as many of our work people as we can get will be moved to the 2nd Section, to push on the Works to Goriattum Station, 16 miles beyond Vellore.

16. The works on the Goriattum Bridge, immediately beyond Goriattum Station, were stopped for a much greater length of time than we anticipated, owing to the severity of the Monsoon, which not only commenced earlier than usual, but from the amount of rain that fell, the River was for a much longer time than usual in such a state as to prevent our working at the foundations, which are very deep.

17. I anticipated that by this time the Line would have been open to Vellore for Public Traffic, but obstacles have occurred which have rendered this impossible; in the first place, the rains continuing longer than expected, we were unable to carry on a triple Arch Bridge in a Tank immediately beyond Trivellum; after getting at this work the Cholera broke out, and the works were almost entirely suspended, and lastly the Contractor, knowing that this Bridge was the only obstacle in our way to opening the Line, struck work about a fortnight ago, but I was able in a couple of days to send both labour and materials from Madras, and I believe that, if not already completed, it will be in a day or two, when this is done, we can then run up our heavy castings of the Turn Table, and I leave a wide margin for obstacle in saying that the Line will be ready for Traffic on the 1st of May.

18. DISTRICT 5.—Since the commencement of last year, the whole of the ground has been handed over to us, and the earthworks may have been in full operation along the whole Line since the month of May.

19. We have experienced considerable difficulty in finding labourers on a part of this District, but notwithstanding nearly 5,00,000 cubic yards of earthwork were executed during the year.

20. Between 6 and 7 Millions of Bricks were moulded, and nearly 5 Millions burnt up to the end of last year, this I consider satisfactory; many more would, however, have been made, had it not been for the lengthened Monsoon, during which time little or no work could be done economically in Brickmaking.

21. Brick work and Masonry were commenced in June, but could scarcely be said to be in regular operation until August; since then the small Bridges have been progressing pretty favourably, and about 2,500 cubic yards of Mason work were completed at the end of the year.

22. The only large Bridge, on this District, is that over the Palar River; in this work I regret to say we have been very unfortunate, the sanction to commence work was received in February 1856. The work was let to a Native Contractor, who commenced operations in a very dilatory manner. After giving him a full trial we were obliged to take the work out of his hands, and do it ourselves, and accordingly commenced in July, but had scarcely got a start when the Monsoon unexpectedly brought the River down in such a manner as to render operations, with the plant we have, totally impracticable up to the end of the year.

23. The work has since been commenced; but I cannot say that it is going on so satisfactorily as I could wish; we feel much the want of Iron pumps, as the foundations have to go 25 feet deep in some places; pumps are not procurable in Madras, but complete sets were indented for on England in May and June last year.

24. It is here we have the great difficulty in procuring labour, the works on each side are stopped, and the pay at the Bridge raised, but still we have not nearly the number of Coolies we require. I should have no hesitation in raising the rate of pay here still higher, were it not that I believe by doing so, I should not attract many more people, and might cause discontent and strikes on other parts of the Line.

25. The opening to Vaniembaddy I consider of the most vital importance, and shall not lose sight of this in pushing on the works in connection with this Bridge.

26. DISTRICT 6.—We had only got possession of six miles of land at the commencement of the year. The earthwork was in full operation along the whole Line in the month of April, about 680,000 cubic yards have been executed during the year, which I consider very satisfactory.

27. The Masonry on this District is somewhat heavy, there being three large Bridges on it, the amount executed during the year has been 1,890 cubic yards, this is not a very great deal, more would have been done if the Engineer's time had not been principally taken up in starting and organizing the execution of his earthwork.

28. DISTRICT 7.—The earthwork on this District is nearly completed, what remains to be done is however very hard, and requires blasting with powder; some delay has occurred in the blasting operations owing to the want of patent fuze, which I hope has been despatched from England long ago. It was indented for in May last, nearly a year ago.

29. The Mason work on this District is very heavy, including a large Bridge over the Muttoor River, and another still larger over the Panaar River.

30. The Muttoor Bridge was commenced some time ago, we have had some difficulty in getting materials here, but this has now been got over. The heavy Monsoon also delayed us in getting in the foundations.

31. The Panaar Bridge has also been delayed, owing to the Monsoon, no work could be done in the River from the 12th of August to the end of the year. from the amount of water running; a considerable amount of work has been done lately, and by this time I expect all the piers will have been completed.

32. The small Bridges on this District are nearly completed.

33. DISTRICT 8.—The first 17 Miles is ready for Rails; the first obstacle is the Moroor Ghaut Rock cuttings, one of these I think will not take long to finish, the other however is very formidable, the more so as we can only work with advantage from one face. The only other work of any magnitude is a Bridge of 7 arches of 30 span over the Ahtoor River, a mountain stream coming from the Shervaroy Hills, the difficulty here is procuring skilled labor, as the Bridge is in the centre of the Moroor jungle; besides this Bridge little mason work remains to be done.

34. DISTRICT 9.—The earthwork on this District may be said to have commenced in April last, and the progress was most satisfactory up to the stoppage of the works in November. 508,280 cubic yards were executed up to the end of the year. The principal attention of the Resident Engineer has been drawn to the first Section, which brings us up to the Salem Station, a point of very great importance, as the centre of a large commercial District.

35. No mason work was executed last year, it has since been commenced and is progressing pretty favourably; there is no want of Bricklayers, but they are bad workmen, and require so much looking after that the Engineer has found it impossible to employ all that have come forward.

36. DISTRICT 10. The first 6 miles have been sanctioned, and is progressing favourably; the remaining Plans and Sections have been finished some time ago, but we are endeavouring to make some improvements in them. The earthwork on this District is by no means heavy, and the masonry will be light.

37. DISTRICT 11. The earthwork was partially commenced in February 1856, for some months the outturn was not great, but gradually increasing, and in October upwards of 90,000 cubic yards was executed. After this the amount fell off, owing to the stoppage of Works in November, by order of Government.

38. A small amount of masonry has been executed during the year; the most important work is the Cauvery Bridge, sanction was received to commence in February 1857, but previous to this a considerable amount of materials had been collected.

39. DISTRICT 12. The whole of the Surveys and Section of this District have been finished and will be submitted to Government in a few days; there has been no Engineer on this District since November last, Mr. Macnair was at that time withdrawn for District 8. The works are generally light, and gradient favourable.

40. DISTRICT 13. The works on this District have, as before, proceeded very regularly during the year. The earthwork, with the exception of a small quantity at either end, is all but finished, and the mason work is far advanced; a great part of the line is ballasted and ready for rails.

41. DISTRICT 14. The works of the District are very heavy. I have however obtained the sanction of Government to an alteration which will reduce the cost of both earthwork and masonry most materially, this was the more important, as it is in the Walliar Jungle, where we may have some difficulty in procuring labor.

42. The earthwork may be scarcely said to commence until March 1856, the whole amount executed up to the end of the year amounts to 962,428 cubic yards; of this 631,578 cubic yards during the last three months, a most unprecedented amount.

43. DISTRICT 15. From July 1855 until April 1856, this District was without an Engineer, and is consequently not so far advanced as those on either side of it.

44. The whole of this District has not yet been staked out, on such of it as we have received sanction to proceed with (about 13 miles) the earthwork is nearly completed, little has been done to the masonry as yet. With the exception of two cuttings, which I fear will turn out rock, the work is comparatively light.

45. DISTRICT 16. We received sanction to commence work on this District on the 21st February 1856, and earthwork was commenced in March and has since steadily been going on, a small amount of masonry has been executed, the Engineer has suffered much from indisposition and in consequence had quite enough to do with his earthwork.

46. The principal work on this District is a Timber Bridge over the Thota River, consisting of 34 openings of 20 feet span, the Plan of this Bridge has been submitted to Government, but sanction has not yet been obtained to commence work.

47. DISTRICT 17. The same remarks apply to this District as to District 16, with the exception that the masonry was not commenced at the end of the year, and the large Bridge is over the Kuddelchoondy consisting of 59 openings of 20 feet span; we propose using screw piles for this Bridge, and only await the sanction of Government, when an Indent on England will be forwarded for these piles.

48. I am aware of the importance of having those Districts adjoining the coast completed first, as they can be made available for the carriage of materials to those in the interior. At present, they are rather behind, the Engineers did not join them till long after Districts 13 and 14 were at work, and their working season is much shorter. I hope, however, by the end of this year to be able to report that there is little work to do upon them.

49. Having gone over the whole of the Districts seriatim, I shall now make a few general remarks on the South West line.

50. The works from Vellore to Salem are so far advanced, that it becomes imperative on us to push on the laying of the Permanent Way. Soon after I assumed charge from Mr. Bruce, I took this matter under consideration.

51. I found we had two difficulties to contend against, the principal one being the want of Sleepers; so far as I can see we will have a sufficient supply to complete District 4, which brings us to Gooriatum Station; the next 50 miles, which includes Districts 5 and 6, on which we have no great continuous length ready for rails, still we have a number of pieces of about half a mile and upwards in length, where it would be advisable to lay rails, provided we had a supply of Sleepers. On the next District, No. 7, the works are much further advanced, some where about twenty miles being ready for rails, and these in great continuous length, here we have, I think, got little more than one mile of Sleepers including some English Sleepers carted from Amoor.

52. On District 8 the first 17 miles are ballasted and ready for rails, but not much more than one mile of Sleepers.

53. On Districts 9, 10, 11, and 12 no Sleepers have yet been delivered over to the Engineers; on District 13 a few have been delivered, on the remaining Districts, I think, there should be no difficulty in procuring Sleepers. However, the only District that is well supplied at present is District 17.

54. Both Mr. Bruce and I have frequently called the attention of the Agent to the objections to the present mode of conducting the Sleeper Contracts, and I would call your attention to a letter from me to the Agent, No. 188, dated 6th March 1857. I have received no answer to this nor to some former letters on the same subject, but in a conversation with the Agent I found he and the Government had objections to the mode of procuring Sleepers I proposed, and the Agent did not seem to have the same apprehension that I have regarding the delivery of the Sleepers required. Several tenders have lately been received and sanctioned, but it is difficult to say how far the Contractors will fulfil their engagements.

55. The other difficulty in laying the Permanent way is the carriage of Rails, Chairs, &c. As yet I have not pushed forward the carriage of materials, but have given the Traffic Manager full return loads for all carts coming from the interior to Amoor Station.

56. When we open to Vellore, it will give the Traffic the benefit of 15 miles more carriage than they have at present, and I hope I shall be able to make such arrangement with the Traffic Manager for forwarding our Permanent way, which will benefit both Departments.

57. The want of a sufficient number of Engineers was felt very much during the year. Two of the Districts were without Engineers for a considerable time, and several of the other Districts were temporarily deprived of their Engineers by sickness. To make up for these deficiencies, we drew upon the Staff of the North West line, but even that did not meet our requirements. I am happy to find, that our wants are now being supplied. We ought to have, over and above the full complement, at least two Engineers ready to take up the places of those whom sickness may render it necessary to leave their Districts for a time.

58. From the little that I have seen of the manner of procuring Stores from England I can say that it is a most defective system. Articles may, or may not, find their way here perhaps a year and a half after they are indented for, in many cases long after the work to which they were to be applied has been completed; this prevents your Engineers from doing that justice to the works which they would wish, and when so much comparison is made of the speed with which the various Railways in India are constructed, your Engineers naturally enough say Contractors on the other lines have only to write to their Agents in England and get what plant they require at once; we require to Indent upon our Storekeeper for it, our Storekeeper must Indent upon the General Storekeeper, the General Storekeeper must prepare an Indent and submit it to the Agent for him to obtain the sanction of Government; this obtained, the Indent goes home, and has then, I believe, to go before the India House and Board of Control before the articles can be contracted for. This delay is ruinous to your Interest, and ought to be done away with if possible.

59. Large Indents on England were sent from this in May and June last year. I understand they are not likely to be complied with for months to come.

60. NORTH WEST LINE. A line from 42½ miles on the South West Line by Naggery to Cuddapah has been carefully surveyed and found unobjectionable, a survey has been also made from the Nellore plains through the Dorinulla Pass, and has been found difficult and the gradients bad.

61. The Government have now ordered me to prepare a survey of the Country from Avady 13 miles along the South West line, to Mamundoor on the Naggery line, a distance of about 70 miles. Mr. Smart examined this route (see Mr. Smart's report dated 17th July 1856) and from Avady to Shashampet reports it to be very favourable, but from that to Moosulpaul, a distance of 23 miles, to be quite the reverse; the greater part a wild jungle, thin and scattered population, only requiring a second crossing of the Cortelliar waters, but the increased size of the other rivers. It would also involve the construction of 20 miles more line, the only advantage in it I can see is the saving of some six miles in travelling distance from Avady and Madras and this advantage is entirely done away with when it is seen that in the line from Avady the mutual line to be worked by both the South West and North West line is only 13 miles and by the other route is 42½ miles.

62. The distance from Vellore, Salem, Coimbatore, &c., to Cuddapah and towns North of it would be increased by 50 miles.

63. Thus the route ordered to be surveyed, compared with Naggery route, requires the construction and perpetual maintenance and working of 20 miles extra length of Railway; it will be more expensive per mile both for masonry and earthwork, inferior in curves, and it may be in gradients.

64. As no reasons have been given by Government why this route should be surveyed, I can only see delay and expense in my doing so.

65. Mr. Smart is now taking a general survey of the Raichoor Doab country and the country towards Kurnool.

15th April 1857.

(Signed) ALEXANDER BEATTIE,

Acting Chief Engineer.

(True Copy)

(Signed) T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE.
4TH MAY 1857.

No. 30.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

SIR,

Referring to your letter, No. 45, of the 23rd March last, requesting me to furnish you with a full report upon the state of the Traffic Department made up to the 31st December last, for submission to the Board of Directors, and intimating that a copy of the report has to be sent to Government, I have the honor to observe that having by my letter, No. 352, of the 9th December, as requested by your letter of the 26th November last, furnished a report of this department up to the end of November, I can now merely transcribe that report, making such comments upon the events or changes in the month of December as may seem necessary.

STAFF.—I am happy to observe that the Station Masters and Clerks selected for this Department have generally performed their duties in an efficient and satisfactory manner. They are principally East Indians and Natives, the former having been appointed Station Masters and the latter Clerks in the Booking Offices, Goods Departments, and Offices. The salaries range from Rupees 15 to 40 per mensem, being much less than is paid upon European lines. The minor Staff, as Porters, Pointsmen, &c., are wholly Natives, and I may observe, generally, have given satisfaction.

ROLLING STOCK.—I presume the Locomotive Superintendent will have reported to you the state and condition of the Rolling Stock; I shall therefore merely observe that we have been abundantly supplied and that it is in every respect efficient.

STATIONS.—The temporary Station at Madras, as originally erected, not having proved sufficiently commodious for the requirements of Traffic, has been enlarged, and although by no means equal to the accommodation which the permanent arrangements would afford, has enabled us to conduct the business of the Station satisfactorily.

THE INTERMEDIATE STATIONS, with the two exceptions, viz., Sholinghur and Companypett, have been completed as originally designed, but experience points out that in some instances additions should be made by the erection of Goods Warehouses.

The difficulties under which the Engineers have labored, in not being able to procure bricks, has caused the completion of the two Stations named, as well as our present Terminus at Arcot, to be delayed. The temporary Station House at Arcot has proved sufficient for traffic, although the Station House under construction would doubtless, if finished, have been more convenient. I am happy to observe that we are now in possession of the Goods Warehouse at this Station, and I anticipate that our Station arrangements will no longer present any drawback to the further development of the Traffic.

TRAINS.—I may observe generally that the Trains have kept good time, and that there has been a freedom from accident and delays, and that generally they have been run with punctuality, equal to any Railway. The times at which they have run, have been selected by the Government, and it is with considerable regret that I observe that the times of starting from, and arrival at Arcot have been most injudicious, which, coupled with the fact, that only one Train daily each way has been permitted for passengers, has had a prejudicial effect in the development and encouragement of this Traffic.

Until the 17th December, the only daily passenger Train proceeding Eastward from Arcot to Madras departed at so early an hour (5-30 A. M.) that travellers residing at a distance from the Line experienced considerable difficulty in reaching the Station so early, and in many cases Passengers slept upon the ground, in the neighbourhood of the Station, to ensure their not missing the Train on the following morning.

On the 17th December, Government having been pleased to sanction the change, the hour of departure of the Passenger Train from Arcot was changed from 5-30 A. M. to 6-30 A. M., since which time not a single complaint of inconvenience has been made to me.

The only daily passenger train proceeding Westward from Madras to Arcot departing at 3-30 P. M. and arriving at 6-45 P. M., so late as again to force the passengers into travelling from the Station in the dark, has been found most inconvenient. The trains have not enabled those resident in Madras to proceed to any Station on the Line and return upon the same day, and the same remark applies to those wishing to travel between one Station and another, proceeding Westward and back. These circumstances have materially affected the encouragement and development of the passenger Traffic.

As an experimental measure, it is to be regretted that the proposal made by the Officers of the Company here to run not less than two trains each way daily, so that the same accommodation should be afforded to those travelling East as well as to those travelling West, has not been adopted, particularly, as by running mixed trains of passengers and goods, the experiment could have been tried without any additional cost to the Company, a course pursued in Bengal and upon many Lines in the United Kingdom, when the amount of Passenger Traffic is, as upon this Line, comparatively small, principally consisting of those travelling by the lowest or Third Class.

The Goods trains have run at times proposed by this Company, and have kept good time. The rate of speed, viz., 10 miles per hour, has been ordered by the Government. Upon the opening of the Line, one train one way daily was run, but the Goods traffic increased to an extent which justified the running of a Goods train daily each way, Sundays excepted, a course which is continued. There are now two trains daily each way running upon the Line, one passenger train and one Goods train, except upon Sundays, when the passenger train only is run. It is to be regretted that the two trains are not allowed to run as mixed trains instead of retaining their distinct characteristics of Passengers and Goods, by which simple change, abundantly suggested by precedent, double the amount of accommodation would be afforded to the travelling public, and the manifest requirements of the passenger traffic would be fully met, and by which it would be encouraged and in the end fully developed.

PASSENGER TRAFFIC.—The passenger traffic has labored under the difficulties already stated, which have prevented its full development, and therefore this traffic, when compared with the working of other Lines, Indian or European, cannot contrast so favorably as it would do under

a proper and judicious arrangement of trains. It has however, as a whole, presented very little fluctuation, and may be described as regular and steady, and as such gives good earnest of being, under proper management, a most important and a most improving source of revenue; the traffic remaining steady proves that there is an amount of passenger traffic to be derived from the District, which the worst arrangement cannot drive off the Line, proving that, under a better system, it is capable of producing a larger number of travellers.

This traffic has been in equal proportion from Arcot and the intermediate Stations, as shown by the mileage in the monthly returns. It will be observed that, in the months from July to December, inclusive, the mileage of the 3 Classes of passengers stood as follows:

	First.	Second.	Third.
July.....	36	32	35
August.....	45	34	33
September.....	53	38	38
October.....	52	39	38
November.....	50	35	38
December.....	54	45	39

It may therefore be characterized as a local traffic, derived from the district immediately through which the Railway passes, one half being through traffic between Madras and Arcot, the other local, or between Madras and the intermediate Stations, but principally Madras and Trivellore, a distance of 26 miles. I may observe that there has been very little communication between the intermediate Stations.

FARES.—The passenger fares have been those ordered by the Government, viz., 2½d or 1 Anna 6 Pie First Class, 1½d. or 9 Pie Second Class, and ¾d. or 4 Pie Third Class, per passenger per mile. The fares proposed by the Railway Company were 3d. or 2 annas First Class, 1½d. or 1 Anna Second Class, and ¾d. or 5 Pie Third Class, per passenger per mile. The receipts have been as before, very steady, and with little fluctuation. They were as follows:—

	First.			Second.			Third.			Total.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
July.....	240	834	0 0	759	1,172	11 6	14,023	10,443	6 8	15,022	12,502	15 8
August.....	119	522	12 0	632	1,023	12 0	11,561	8,492	11 0	12,312	10,088	11 9
September.....	136	673	14 0	588	1,053	0 0	11,688	9,621	5 0	12,412	11,424	9 3
October.....	124	598	12 6	482	885	6 0	11,560	9,659	1 0	12,166	11,199	6 4
November.....	101	474	1 6	521	861	4 6	9,768	7,841	10 4	10,390	9,217	0 6
December.....	152	784	15 6	567	1,223	2 1	12,938	10,645	13 8	13,657	12,658	15 3

The largest amount received in any period of equal time was during the 5 days immediately upon the opening of the line, partly from the novelty and the celebration of an annual native festival at Trivellore.

The month of August was characterized by no unusual circumstance tending to increase the receipts.

In the month of September we received Rupees 1,127-5-6 for the conveyance of Soldiers.

In the month of October we received Rupees 1,214-7-10 for the conveyance of Soldiers.

The month of November is under the average, amounting to Rupees 9,217 only, which is attributable to the monsoon weather.

In the month of December we received Rupees 993-12-1 for Soldiers, but irrespective of this sum we received the largest amount from ordinary passenger Traffic in this month of any previous month.

It will be observed that the ordinary and the regular passenger Traffic of the line remains steady at about Rupees 10,000 per month.

It can be little more than an opinion to say that if the Fares, as proposed for adoption by the Railway Company, had been in force, that the receipts would have been higher, but I feel bound to say, from my observation of the traffic, that if the higher rates had been charged, it is my opinion that there would not have been a less number conveyed, whilst I may say more confidently, that if the fares had been higher, and the Trains had been differently run, the receipts would have been much larger.

PARCELS.—The amount received from the conveyance of parcels has been small, and has shown a decrease from the first month. I attribute this to the prohibitory rate charged, viz., 1s. 6d. or Annas 12 between Madras and Arcot for even the smallest parcel, the lowest charge being for any distance on the line 8 Annas, or 1s. 0d. In consequence, parcels for Arcot and beyond are forwarded either by Goods Train, under the Classification for Goods, or by the Banghy post.

HORSES CARRIAGES, AND DOGS.—The amount of Traffic under these heads is as much as we could reasonably expect, and I think the rates are satisfactory.

GOOD'S TRAFFIC.—The development of the Goods' Traffic may be said to have been rapid and progressive.

I quote the monthly returns as follows:—

	Weight.		Amount.					
	Mauuds.	Tons.	Rs.	A.	P.	£	s.	d.
July.....	12,777	472	1,520	3	11	152	0	6
August.....	35,869	1,328	4,098	1	11	409	16	3
September.....	63,884	2,366	6,939	8	10	693	19	1
October.....	121,309	4,493	10,272	8	4	1,027	5	0
November.....	114,016	4,222	8,368	2	2	836	16	3
December.....	77,223	2,839	6,538	6	2	653	16	9

It will be seen that this Traffic steadily increased from the opening of the line in July to the end of October inclusive.

The decrease in the month of November, as compared with the month of October, and the decrease in December, as compared with October and November, is accounted for by the fact that the season for Goods' Traffic in the District drew to a close in the early part of November. It may be necessary to state that the months from April to October inclusive may, as a rule, be considered the principal months for our Goods' Traffic, and that from November to March, inclusive, we must expect diminished Goods' Traffic as compared with the other months.

The Goods' Traffic over the Railway has been that portion coming from Palmanair, Chittoor, and the District North West of Arcot only; the large Traffic from the districts of Salem, embracing Trichinopoly, Madura, and from Vanumbady and the country Eastward, has continued to be forwarded by road, and I have ascertained that, in the month of November, 4,300 Bandies, averaging over 2,200 Tons, and in the month of December 3,952 Bandies, averaging 2,000 Tons, passed through Wallajahnugger en route by road to Madras, there remains therefore a large Traffic yet to be thrown upon the Railway.

The bulk of the large Trade carried on from Madras into the Interior in Salt continues to pass along the road, a state of things which cannot long exist.

I am happy to observe that the quantity of Salt carried over the Railway in December exceeded that in October or November, and that there is every reason to believe that this Traffic will steadily increase, notwithstanding that no facility whatever has yet been afforded for the loading of Salt upon the Railway near to the Cotaurs, a circumstance which is much to be deplored.

There is great encouragement in the fact that a large Traffic has yet to be thrown upon the Railway from the Salem District upon the one hand, and the large Trade in Salt upon the other.

Under these circumstances, I am right in saying that the Goods' Traffic will continue progressively to increase, as active measures will be pursued to transfer this Trade from the road to the Railway.

The rates, as ordered by the Government for adoption upon the Railway, will have given the Company less than one penny per ton per mile for the carriage of fully 75 per cent. of the Goods' Traffic, a rate which will render it doubtful whether this Traffic can prove ultimately remunerative.

I have no doubt that a higher rate could have been obtained, although probably the development would have been less rapid; but regarded as an experimental measure, it is to be deplored that a more equitable classification was not arranged, and rates adopted more likely to prove satisfactory to the interests of the Railway Company.

WORKING EXPENSES.—Every effort has been made to economize the working expenses in this Department. It should, however, be observed that the percentage of the expenses in the Traffic Department will probably contrast unfavourably to this Company, when it is considered that the rates are lower than upon any other Railway for the conveyance of goods of the class carried upon this line, and that the fares for passengers is only one halfpenny per passenger per mile upon 75 per Cent. of the entire passenger Traffic, and that therefore a larger amount of work has to be done here for less money than upon any other Railway.

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY.

LOCOMOTIVE SUPERINTENDENT'S OFFICE.

4TH MAY 1857.

No. 65.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 20, dated 23rd March, calling upon me to furnish you a Report of the progress of this Department, for the half year ending 31st December 1856.

LOCOMOTIVE DEPARTMENT.

2. The Statement forwarded herewith will furnish particulars as to the Locomotive Engines, 17 of which are in working order, the remaining 5 having been put together and placed under cover at Perambore until required.

3. The tank engines are doing remarkably well. The small passenger Engines by Messrs. Kitson and Co. are very well adapted for the Passenger Traffic under existing arrangements, and their expenditure of fuel with moderate loads is very economical. They have also required very little upholding; the fitting of these Engines is particularly good, both in material and workmanship, but the lightness of the repairs is partly attributable to the moderate loads, and to the Engines being perfectly new.

4. The tank Engines by Messrs. Stothert, are also doing very well, and are economical in consumption of fuel provided they are not overloaded. The Goods' traffic here is, however, somewhat heavy for this class of Engine, and our vehicles being very large and heavy, and the winds generally having been so strong since the opening of the Line, due allowance must be made both for their consumption of fuel and for the amount of repairs they have required.

5. Considering the very slow speeds at which we run our Goods' trains, and the high rate we pay for driving wages, it is questionable whether it would not have been more advantageous to have a heavier class of Goods' Engine, so as to enable us to run a less number of trains by placing a larger number of Wagons on each train. Situated as we are at present, however, the Tank Engines are the most economical, as we could not do with fewer than one Goods' Train daily each way, even with the large Engines, and the small Engines can haul these trains at present. The traffic, however, will I anticipate ere long long require an increase in the number of Goods' trains, which increase of trains might be much longer postponed, had we a sufficient number of Engines of the large class to enable us to work those engines regularly.

6. The large Passenger tender Engines have been but little used. They are useful for special purposes, the conveyance of troops, for heavy through Trains, &c., but they are not in general use, being expensive in point of fuel.

7. The large Goods' Tender Engines have been found very useful in working the Goods' Trains, in conjunction with the tank Engines, and whenever there are heavy bursts of Goods' traffic, which sometimes continue for a week, or a fortnight, at a time; these Engines relieve the small Engines, instead of increasing the number of trains or putting two small Engines to one Train, which latter arrangement would be very inconvenient with our limited Staff of Engine Drivers.

8. The progress of the Pupils, Apprentices, and workmen, both Native and East Indian, has been satisfactory, and we have, in every branch of the Locomotive establishment Natives, or East Indians, improving in or learning the several trades connected with the mechanical Engineering; almost the whole of the Machinery that we have at work, Lathes, Planing, Drilling, Shaping, Slotting and Punching Machines are worked by this class of men, the more important works being either overlooked or performed by our European Mechanics.

CARRIAGE DEPARTMENT.

9. The Statement, above referred to, will shew our Directors the progress of work in this Department.

10. I think we can, without difficulty, keep pace with the requirements of the Line, without calling in the aid of Contractors, provided we continue building Rolling Stock at the same rate at which we are now going on. This is, however, a matter which can only be determined in connexion with the Engineering and Traffic Departments.

11. The introduction of machinery into this Department has been of great advantage, and will no doubt eventually be productive of great saving. We have been enabled, since its erection, to do away with a great many hands, and at the same time we can get through the work with greater rapidity, and can, by means of this machinery, bring largely into use Timber, which could not otherwise have been made use of.

12. The progress of Pupils, Apprentices, &c., in this branch of the Department, has been very satisfactory.

(Signed) W. B. WRIGHT,

Locomotive Superintendent.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY.

LOCOMOTIVE AND CARRIAGE BUILDING DEPARTMENT.

A Statement of Rolling Stock finished, and that in the course of Erection and Construction, up to 31st December 1856.

up to 31st December 1880.

Erected.		In the course of erection.		Remarks.
PASSENGER LOCOMOTIVES.				
Tender Engines Nos. 1 & 2.	2			These Engines are all now put together. A portion of them, however, are put away for the present, not being required for immediate use. They are so far forward as it is desirable to have them until they are put to work, when it will be necessary to get them thoroughly finished, so that there is still a small amount of Expenditure that will have to be incurred on Capital Account.
Tank do. " 7, 8, 9, 10, 11, 12, 13, 14, 15 & 16.	10			
	12			
GOODS LOCOMOTIVES.				
Tender Engines Nos. 3 & 4.	2			
Tank do. " 5, 6, 17, 18, 19, 20, 21 and 22.	8			
	10			
Rolling Stock finished.				
		Rolling Stock in the course of construction.		Remarks.
PASSENGER STOCK.		GOODS STOCK.		
1st class Carriages.....	3	Open Wagons.....	10	
Composite do.	1	Coke do.	10	
2nd class do.	4	Cattle do.	20	
3rd do. do.	21			
Carriage Trucks.....	4			
Brake Vans.....	3		40	
Horse Boxes.....	5			
	48			
GOODS STOCK.				
Ballast Wagons.....	60			
Open do.	90			
Coke do.	20			
Hopper do.	5			
Covered do.	50			
Cattle do.	10			
Brake Vans.....	6			
Platform Trucks.....	20			
Timber do.	10			
Gun Powder Van.....	1			
	272			

Madras, 4th May 1857.

(True Copy.)

(Signed) WILLIAM BARTON WRIGHT.

(Signed) T. A. JENKINS, Agent and Manager.

No. 93.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to forward to you, in accordance with the request contained in your letter of the 23rd March, a report on the progress of the department under my charge for the year 1856.

The Accounts, so far as relate to Capital, present no new feature; they have been regularly audited, and I am able to report that the work of that branch of my department has been well and efficiently performed.

On the 1st July the Line was opened to the Public, when the duties of the audit of the Traffic Accounts and arrangements for the preparation of voluminous statistical returns had to be organized; and the system, upon which the Revenue Accounts of the Company were to be conducted, had to be discussed and determined on.

Up to the latter end of August little had been accomplished by my predecessor, to meet either the requirements of the Government, or for recording the Revenue transactions of the Company, probably in consequence of his not being fully sensible of the amount of detailed information which would have to be prepared to arrive at the Statistics asked for: since then every effort has been made to furnish promptly the whole of the Returns required, and we are now in a position to forward them, within a few days, after the close of each week, month, quarter, or half year.

Much pains have been bestowed in training Native Clerks, under the superintendence of intelligent East Indians, to their several duties, and I am pleased to be able to report that much success has attended these endeavours, as the regularity with which our Traffic Accounts and Statistical Returns are made give evidence.

I have also to report that, since a reduction in the number of the Returns required of us by the Government has been made, a corresponding reduction in the number of hands employed has also been effected: and I am in expectation that the present Staff will be equal to the work on a further extension of the Line.

With this Report I have the honor to forward the usual Annual Statements, viz.

- No. 1. Abstract Statement of progress in Construction and Surveying to 31st December 1856.
- No. 2. Statement of Receipts and Expenditure on Capital Account to 31st December 1856.
- No. 3. Abstract Statement of Receipts and Expenditure on Capital Account of each Department and Districts to 31st December 1856.
- No. 4. Statement of Sleepers purchased in the year 1856.

To these in future will be added an Annual Return of Receipts and Expenditure on Revenue Account; on this occasion the Traffic results, since the opening of the Line, extending over a period of 6 months, ending 31st December 1856, are appended.

(Signed) FITZGERALD CHURCH, Accountant.

(True Copy.) (Signed) T. A. JENKINS, Agent and Manager.

Madras, 7th May 1857.

No. 68.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

I have the honor to forward a Tabular Statement, shewing the number of those employed by the Railway Company, who have received Medical treatment during the year 1856.

It will be observed that 4,431 have been under Medical treatment, and that 190 of these have been Europeans.

Madras, 23rd April 1857.

(Signed) J. SANDERSON, Consulting Physician.

The accompanying Tabular Statement shews that 4,431 have applied for and received Medical treatment during the last year, at the various Stations along the line of Railway, extending from Madras on the Eastern, to Beypoor on the Western Coast.

The number of admissions into Hospital have been comprised of Natives and East Indians, with 190 Europeans.

The casualties reported have been 23, but most probably this falls far short of the actual number, as many of the sick leave while they are laboring under diseases, and betake themselves to their own houses, where it is impossible to afford them the proper Medical aid, and in many instances none at all.

The portion of line of road, where sickness has been found to prevail to the greatest extent reaches from District No. 4 to District No. 11, viz., throughout the South-west portion of the North Arcot and the whole of the Salem Collectorate, a distance of upwards of 200 miles.

The most prevailing diseases have been Fever of an intermittent type, though it has been met with also of a continued and remittent; Cholera, though more prevalent along the same portion of the line, has not been experienced to the same extent as during the previous year.

Amongst the Europeans who have suffered from diseases are the following:

Chief Engineer.....	1
Resident Engineers.....	7
Assistant Engineers.....	13
Inspectors.....	48
Sub-Inspectors.....	81
Coach Builders.....	4
Engine Drivers.....	6
Do. Fitters.....	4
Platelayers.....	5
Guards.....	9
Superintendents.....	7
Latheman.....	1
Smiths.....	3
Storekeeper.....	1

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In consequence of sickness, it was necessary that Chief Engineer Bruce should leave India and proceed to England for the benefit of his health.

Assistant Engineer Stein, whose health was never naturally robust, was obliged to leave also.

Coach Builder Russell and Engine Fitter Hammersley were also obliged to be sent home, on account of repeated attacks of Dysentery and Carditis (disease of the Heart.)

(Signed) J. SANDERSON,

Consulting Physician.

(True Copy.)

(Signed) T. A. JENKINS, Agent and Manager.

Madras, 1st January 1857.

Abstract of the Annual Return.

Classes of Disease.	Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Remarks.
Fevers.....	19	1,389	1,408	1,372	4	32	Numerical Strength. Average daily No. of Sick for the year.
Eruptive Fevers.....	0	9	9	9	0	0	
Diseases of the Lungs.....	2	134	136	129	1	6	
Diseases of the Liver.....	1	20	21	21	0	0	
Diseases of the Stomach and Bowels.....	7	930	937	928	1	8	
Epidemic Cholera.....	2	98	100	95	5	0	
Diseases of the Brain.....	0	62	62	58	3	1	
All other diseases.....	29	1,789	1,818	1,781	9	28	
Total.....	60	4,431	4,491	4,398	25	75	14,262 1/2
Total amount of sickness for the year 1855.....	42	3,024	3,066	2,963	73	60	6,719 1/2

Madras, 1st January 1857.

(Signed) J. SANDERSON, Consulting Physician.

(True Copy.)

(Signed) T. A. JENKINS, Agent and Manager.

MADRAS RAILWAY, MADRAS DIVISION.

MAINTENANCE OF WAY AND WORKS.

REPORT

For the Half year, ending December 31st 1856.

PERMANENT WAY.

All the embankments and cuttings along the line stood remarkably well during the continued rains throughout the six months, and even the monsoon, the first of any severity since the works were constructed, did no damage that was not repaired in a few days, without in the least obstructing the Traffic of the line. No slips occurred of the slightest importance. The Bridges and Culverts have also been uninjured, with the exception of a 6 feet arch near Madras, a wing wall of which was undermined by the flood and fell, the body of the bridge being, however, unaffected, and the Traffic continuing over it as before. Altogether the manner in which the "Way" has stood the tests of two very heavy storms in October and December, when the whole country was flooded for many days, is very satisfactory, and is a proof of the solidity of the works and the sufficiency of waterway allowed.

Ballasting was done over the greater part of the division. There is a plentiful supply of ballast all along the line, easily procured, and of very good quality. The road itself has required to have a great deal of wood work renewed. My report of the Sleepers removed, up to the 31st December, shows that out of 487 Sleepers taken out rotten, as many as 458 were of unsanctioned woods, which had been sold to the Engineers under false names, their want of knowledge of country woods preventing their detecting the fraud. Some kyanized Sleepers have lately been used, but not sufficiently long to enable a comparison to be made of their durability with that of other Sleepers. There has also been a considerable expenditure of Keys and Trenails, but I have no doubt that, as the road is better ballasted, there will be a considerable decrease in this.

STATIONS.

Very little comparatively has been done to the three unfinished Stations, Arcot, Sholinghur and Companypett. The continued showers since April have retarded to such a degree the process of brickmaking, that many of the buildings had to be stopped, and bricks brought from a great distance to complete others. Temporary accommodation was, however, provided at all these Stations.

I am happy to be able to state that no accident to Trains occurred during the half year, with the exception of one Passenger Train, which got off the road by the giving way of the Trenails, while it was running into the siding at Perambore Station. Iron spikes have been ordered to be substituted for wooden Trenails in all curves of sidings which will make all quite secure. No serious accidents to persons in the Department occurred during the half year.

A very bad practice existed, up to the end of the year, of putting stones on the Rails. Up to that time the perpetrators had not been found, but there was every reason to believe that it was done by little boys out of mischief, and not maliciously.

The Native servants of the Company, engaged in platelaying, give me much satisfaction generally. They are intelligent and active, and show great attention to their work, and seem to understand the uses of signals and other points connected with their duty. During the heavy rains of the monsoon, they were always ready to turn out to repair any damage done, in which they were set a good example by the Inspectors, who never spared themselves, and who deserved much credit for the energy they displayed in keeping the road in good order during the rains.

(Signed) BRYCE McMASTER,

Resident Engineer.

Arcot, 9th May 1857.

(Signed) T. A. JENKINS,

Agent and Manager.

ABSTRACT STATEMENT of Progress in Construction and Sur

	Earthwork.	Brickwork and Masonry.	Permanent Way.	Stations.	Ballasting.	Fencing.	
						Permanent.	Temporary.
District No. 1.....	14,145	1,398					
" " 2.....	e1,481,875 $\frac{1}{2}$	e11,522 $\frac{1}{2}$	e47,403 $\frac{3}{4}$	1,196 $\frac{1}{2}$	33,670	153,977	8,327
" " 3.....	16,859	e25,092 $\frac{1}{2}$	e91,566	1,759 $\frac{1}{2}$	e107,349 $\frac{1}{2}$	e37,242	e9,468
" " 4.....	e844,904	8,238 $\frac{1}{2}$	26,704	e900	68,638 $\frac{1}{2}$	107,758	9,240
" " 5.....	176,064 $\frac{1}{2}$	e35,297 $\frac{1}{2}$	e15,750	661	e32,763	e36,678	e12,698
" " 6.....	e1,424,979	14,567 $\frac{1}{2}$	31,439		213,181 $\frac{1}{2}$	207,995	
" " 7.....	706,457	e893 $\frac{1}{2}$			e24,687		
" " 8.....	e259,314	2,252			37,619		
" " 9.....	457,462	1,889 $\frac{3}{4}$	1,011				
" " 10.....	656,261 $\frac{3}{4}$	6,917			5,337	5,074	
" " 11.....	e13,879	e533			21,386	5,121	
" " 12.....	456,327	10,792 $\frac{1}{2}$					e25,204
" " 13.....	e284,018	e6,513 $\frac{1}{2}$			23,235	2,351	
" " 14.....	232,152					e4,473	
" " 15.....	e571,192					1,983	
" " 16.....	508,280	865					
" " 17.....	89,425	12,520 $\frac{1}{2}$					
" " 18.....	515,757 $\frac{1}{2}$	e5,729 $\frac{1}{2}$			6,076	35,599	121
" " 19.....	525,825	341				e11,246	
" " 20.....	e481,537					354	
" " 21.....	936,087						
" " 22.....	e26,341						
" " 23.....	196,710	210 $\frac{1}{2}$					
" " 24.....	346,844						
" " 25.....	425,109						
Madras Station.....	32,822 $\frac{1}{2}$	3,521 $\frac{1}{2}$	6,379		15,638 $\frac{1}{2}$	200	
Cuddapah Survey,	e97,697 $\frac{1}{2}$	e13,954	e5,767		e9,715		
No. 1.....							
" 4.....							
Estimate No. 1.....	1,257,510-24	8,890	44,000		138,926	88,000	41,120
" " 2.....	777,026-00	14,054	38,720		122,620	77,440	19,360
" " 3.....	1,588,224-20	18,565	44,000				
" " 4.....	1,422,656-00	37,306 $\frac{1}{2}$	45,760		144,482	91,520	91,520
" " 7.....	1,142,534-00	24,603			133,090	52,624	
Madras Station.....	67,556-00	10,832	6,745		44,695		

Madras, 7th May 1857.

veying during the Year, ending 31st December 1856.

Trial Section taken.	Trial Section Plotted.	Trial Survey taken.	Trial Survey Plotted.	Jungle cleared.	Permanent Section taken.	Permanent Section Plotted.	Permanent Survey taken.	Permanent Survey Plotted.	Cross Section taken.	Lines Staked out.	Look Spitting.
38 68	38 60½	38 57½	38 48½	61 18½	23 25½	23 22½	23 25	23 22	4	27	18½
55½	41½	41½	39½		25½	25½	18	18		25½	
14 74½	14 74½	14 43½	14 43½	30							

The figures marked thus (s) denote the progress up to 1855.

(Signed) F. CHURCH,

Accountant.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

MADRAS.

OPEN 65 MILES

Dr.

Revenue Account (six Months)

[illegible]

(Signed) F. CHURCH, *Accountant.*

RAILWAY.

FROM MADRAS TO ARCOT.

from 1st July to 31st December 1856.

Cr.

[illegible]

(Signed) T. A. JENKINS, *Agent and Manager.*

(True Copy) (Signed) T. A. JENKINS, *Agent and Manager.*

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APPENDIX A.

No. 40.

On a letter from the Agent and Manager of the Madras Railway Company, dated 6th February 1857.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards with this letter the Revenue Account for the six months ending 31st December last, showing the receipt and expenditure on account of traffic, on that portion of the line (65 miles) which has been, during that period, open to the public.

2. The gross receipts have been Rupees 1,27,862-9-9, expenditure Rupees 66,057-8-6, leaving a balance to profit of Rupees 61,805.

3. The amount of business done during the period has not been great. Exclusive of a very few extra trains, on occasions of festivals, one daily Passenger train each way, between Madras and Arcot, and one Goods' train each way every day, except Sundays, have more than sufficed to do the whole work.

4. This is not, however, from want of work to do, since the traffic on the high western road has continued, during this period at least, as large as ever.

5. The Passenger traffic, at the rate of about 12,000 of all classes booked monthly, appeared soon to find its limit, the Goods continued to increase steadily and satisfactorily until the end of October, when, in consequence perhaps of the monsoon, it fell off and has not yet recovered.

6. That the Railway should have failed as yet, in drawing from the high road the whole, or even the greater part, of the goods traffic, may be attributed in a measure to the following causes.

7. A great portion of that traffic comes from a distance, as from Salem, Bangalore, Bellary and Cuddapah. It has been loaded at those places on common carts and consigned to Madras, and the owners of the carts have no instructions and are little disposed to transfer their loads to the Railway.

8. Again, the handymen are naturally disposed at first to see in the Railway nothing but a formidable competition to employment, and have notoriously made great efforts to keep the carrying business in their own hands. These efforts, injurious to themselves while they last, must, we know, be vain in the end; but they produce their effect now, and are made under more favourable circumstances, while the line open is relative short, than they will be hereafter.

9. The Goods' traffic on the Railway, exclusive of Railway materials, is almost all, as might be expected, in one direction—Eastward. The trains travel in the other direction nearly empty; and it is a remarkable fact that the present rates by Railway have not had the effect of bringing the Salt on to the line to any great extent.

10. The carts entering Madras with loads from a distance have, as heretofore, the choice between returning empty or taking Salt at a low charge. They prefer the latter, and have been compelled of late to reduce their charges to prevent the Railway from getting a monopoly of the Salt.

11. This competition, on the part of the common carts, can only continue, so long as a considerable portion of the country produce is brought into Madras by those carts; as this diminishes, which it must do with the extension of the Railway, the Salt will also fall into the hands of the latter.

12. Of the expense during the half year, it will be observed that maintenance of Way forms no part. This, until the expiration of the 1st year, goes to Capital. The expenditure in the traffic department is relatively high, a circumstance attributable to the fact of the whole of the salaries of the European Staff, including that of the Traffic Manager, having been necessarily thrown upon the short line. As the line is extended, this portion of the expenditure will become relatively less.

MADRAS RAILWAY.

lect, for the Engineering Department, from the commencement up to the 31st December 1856.

Vouchers.	Disbursements up to 30th November 1856.			Disbursements for December 1856.			Total Expenditure up to 31st Decem- ber 1856.			Received up to 30th November 1856.			Received during December 1856.			Total Receipts.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
B	1,518	10	11				1,518	10	11									
D	537,634	6	3	14,192	15	10	551,827	6	1	568,750			15,000			583,750		
B	3,289	4	6				3,289	4	6									
D	361,248	15	3	7,110	15	6	368,359	14	9	403,750			10,000			413,750		
B	2,399	5	5	68	11	2	2,468	0	7									
D	517,378	0	9	19,345	12	4	566,723	13	1	590,000			20,000			610,000		
B	3,069	7	9	109	14	8	3,179	6	5									
D	240,961	7	5	25,875	13	4	266,837	4	9	2,55,000			30,000			285,000		
B	1,699	8	0	46	5	0	1,745	13	0									
D	98,064	9	8	14,725	9	10	112,790	3	6	148,000			20,000			168,000		
B	2,189	10	9	63	0	0	2,252	10	9									
D	149,441	13	0	10,284	8	9	159,726	5	9	182,000			20,000			202,000		
B	2,466	12	2	79	9	6	2,546	5	8									
D	188,422	12	1	17,748	9	5	206,171	5	6	218,000			15,000			233,000		
B	3,310	13	8	144	0	4	3,454	14	0									
D	248,893	3	6	11,595	8	4	260,488	11	0	288,000			15,000			303,000		
B	1,939	5	6	57	13	7	1,997	2	1									
D	70,664	9	8	9,565	5	11	80,229	15	7	104,000			15,000			119,000		
B	1,674	6	11	56	0	3	1,730	7	2									
D	12,999	15	3	685	14	0	13,685	13	3	47,000			5,000			52,000		
B	1,044	1	9	64	4	10	1,108	6	7									
D	73,351	9	5	13,460	3	10	86,811	13	3	104,000			20,000			124,000		
B	1,177	6	4	43	11	6	1,221	1	10									
D	3,768	11	0	48	9	8	3,817	4	8	3,000						3,000		
B	1,987	2	3	62	4	0	2,049	6	3									
D	212,593	7	9	12,184	0	2	224,777	7	11	278,000			15,000			293,000		
B	3,427	10	7	139	13	6	3,567	8	1									
D	144,882	11	8	29,315	10	6	174,198	6	2	193,000			30,000			223,000		
B	1,003	9	5	39	10	0	1,043	3	11									
D	17,180	1	4	8,972	3	4	26,152	4	8	70,000			10,000			80,000		
B	2,468	8	4	68	13	5	2,537	5	7									
D	42,246	11	0	6,267	2	8	48,513	13	8	93,000			15,000			108,000		
B	2,806	5	1	108	14	8	2,915	3	9									
D	42,790	4	1	6,270	8	9	49,060	12	10	83,000			15,000			98,000		
D	488,493	8	7	42,907	4	0	531,400	12	7	534,000			50,000			584,000		
B	21,224	3	7	161	11	10	21,385	15	5	65,250			5,000			70,250		
B	206	6	3				206	6	3									
Line.....	35,40,519	8	10	2,51,871	6	9	37,92,390	15	7	42,27,750			325,000			45,52,750		
B	2,191	2	3	274	2	0	2,465	4	3									
Line.....	2,191	2	3	274	2	0	2,465	4	3									
ern Lines	35,42,710	11	1	2,52,145	8	9	37,94,856	3	10	42,27,750			325,000			45,52,750		
Balance.....							7,57,893	12	2	Rupees Seven hundred and fifty seven thousand								

Rs. 7,57,893 12 2 Rupees Seven hundred and fifty seven thousand, Eight hundred and ninety three, Annas twelve and Pice two.

Correctly the total amount of Receipts and sanctioned Expenditure (exclusive of authorized establishment) up to 31st December, dated this 14th day of July 1857.

T. A. JENKINS

stant.
T. A. JENKINS,
Agent and Manager.

ALEXANDER BEATTIE,
Acting Chief Engineer.

FORM P.
MADRAS RAILWAY.

Statement showing the Receipts and Expenditure in India from the commencement, sanctioned up to 31st December 1856.

[illegible]

T. A. JENKINS,
Agent and Manager.

FITZGERALD CHURCH,
Accountant.

Madras Railway, 17th July 1857.

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APPENDIX II.

ACCOUNTS "CAPITAL" AND "REVENUE".

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 324.

TO MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

Under the expectation that a portion of your line of Railway may be opened to traffic by the end of the present year, it would appear not too soon to consider and arrange the mode in which the accounts connected with the working operations on the one hand, and the construction on the other, shall be prepared and submitted to Government.

2. From the day that any portion of the line is opened to the public, you will of course have to keep and to furnish two totally distinct sets of accounts—one showing the receipt and expenditure under the head of "Capital", the other under that of "Revenue".

3. For all present practical purposes we may consider that expenditure under both these heads will be going on, on the part of your Company, for an indefinite time.

4. Expenditure under the head of "Capital" will be continued chiefly upon those portions of your line, or lines, not yet opened to the public. But though the disbursement for "Revenue" will be confined to those portions of the line which are opened to traffic, some expenditure out of "Capital" also must necessarily be continued upon the same for a definite period, after the working operations have commenced thereon.

5. The definition of this period will be an important subject for the consideration of the Railway Company and of Government.

6. The legitimate expenditure of "Capital", consists of the first cost of construction of the way and works, including stations, and furniture, and of the necessary rolling stock. How far "Capital" should be drawn upon for every addition to the actual amount of stock, or for any enlargement of stations, rendered necessary by an increase in the amount of business, is a question regarding which there is much difference of opinion, nor need we at present, I think, attempt to decide it. My own opinion is that when once a given length of Railway in India, being a single line, shall have been declared completed and stocked and in readiness to meet all probable demands on the part of the public, the "Capital" expenditure should be closed, never to be re-opened, for any purpose save the addition of a second line of rails.

7. Not considering the line completed until the works have stood one year running, I am of opinion that, having determined the extent of line to be opened on a given day, you should fix a liberal allowance of rolling stock of every kind for that length, supplying the same out of "Capital" and reserving it exclusively hereafter for the traffic of that portion of your line, that your way and works should be maintained for one year from the day of opening out of "Capital," and that thenceforward all expenditure for "Capital" upon that portion of the line should cease, not to be re-opened without special deliberation and sanction.

8. You would thus, for the first year after the opening of a portion of your line, be expending "Capital" upon the unfinished portion: both Capital and "Revenue" upon that portion of the line which is on work: and at the close of the year the expenditure upon the latter would be confined entirely to "Revenue".

9. In keeping and recording periodical accounts under these two separate heads, the current expenses generally will occasion no difficulty; some care, on the other hand, will be necessary in rightly dividing the expenses connected with the several Establishments, viz.

The Agency and Management.

The Chief Engineer.

The Locomotive Department.

The Traffic Department, and

The Storekeeper.

10. In whatever proportion the aggregate cost of establishment under these several Departments may be charged to the two accounts "Capital" and "Revenue," it appears desirable that the sums so separately charged should be drawn upon separate documents, avoiding, if possible, all Debtor and Creditor accounts between "Capital and Revenue."

11. With regard, in the first place, to "Agency and Management," the whole of your Establishment might, if more convenient to you, be entered in one Abstract or Return: but the amount might be drawn upon two receipts, one under "Capital," the other "Revenue," the division being made upon one uniform principle, so long as the proportion between the unfinished line and the finished remains the same.

12. With regard to the "Locomotive" Department, the arrangement would, it seems, be simpler, and although probably superintending the construction of stock for other yet incomplete portions of the line, the business of your Locomotive Superintendent is so peculiarly with the working operations, that his personal salary, &c., might well be debited to "Revenue," while his subordinates in the Department under his direction generally might be divided into two parts and work in distinct places; the one engaged in the work connected with the line in work, the other constructing stock (out of Capital) for the other portion of the line.

13. The division of the expenses connected with the Chief Engineer and his Department would be equally simple. That Officer's personal salary, &c., might with propriety, and for a long time to come, be charged to "Capital," along with a large portion of his Establishment, while the Resident Engineer and the Establishment under him, occupied in "maintenance of way" on the open portion of the line, might, at the expiration of the first year, as above proposed, be returned (under the Chief Engineer) as a separate Establishment, and charged wholly to "Revenue."

14. The expenses of the Traffic Manager Department will from the opening of a portion of the line be wholly charged to Revenue.

15. The position of the "Storekeeper," which I observe your Directors propose to constitute a separate Department, is peculiar, strictly speaking the expenses of such a Department should not come upon "Revenue" at all, except in the form of value given to "Stores consumed." It appears to me therefore that either the Storekeeper must be included in the "management," and be so divided between Capital and Revenue, or his salary must, with those of all his Establishment be periodically thrown on to the prime cost of "stores," and be so issued and charged to the several Departments, whether under the one head or the other, "Capital" or "Revenue."

16. In this case the whole property in "stores," so valued as to include the cost of "store-keeper," should be looked upon as Capital in hand to be realized by gradual expenditure (in the shape of stores), the parties receiving such stores paying for them, whether they be engaged in working one portion of the line, or in constructing another, or unconnected with the Railway altogether.

17. Under the above system the expenditure under "construction" would be recorded precisely as heretofore in the several Departments.

18. The principle upon which the receipt and expenditure under "Revenue" should be recorded would be precisely the same, although it might admit of some modification in detail. You have already touched upon this in your report to Government of the 6th June 1855; I shall therefore only request you to favor me at an early date with the form of accounts which you propose for this purpose. The principle I assume will be the same; since in reality the information arrived at, and the matter to be recorded, are similar. Advance on the one hand and expenditure under several heads on the other.

19. The accounts of expenditure are however one thing, the result of such expenditure another; and it is in connection with this circumstance that I desire to draw your attention to the importance of establishing such a system, as shall enable you readily to analyze your expenses and to distribute them with accuracy over the several units of work. By no other system can you possibly ensure economy in your several Departments.

20. I wish therefore to make known to you the several points upon which the Government will, from time to time, desire information in your Locomotive and "Traffic" Departments.

21. In the Locomotive Department, including the construction of stock,* your accounts should show the total expenditure in labour and material upon every article turned out, the amount of labour and quantity of Materials of these several descriptions used, the time of commencement and time of completion. The cost of such article should be calculated periodically by debiting it with the actual cost of labour and materials expended upon it, and by adding a share in all general Contingent expenses. It is manifest that the aggregate amount of the value of stock thus periodically turned out of the shops would, with the materials in hand, exactly balance the money expended during that period.

22. In the Locomotive Department the usual returns will be required showing the distance travelled by each Engine, the expenditure of fuel, grease, &c., the amount expended in repair, and all particulars connected with the operations of the Engines.

23. In the Carriage Department every carriage should have its own history recorded, the work done, and the Money expended in repair; and it is very desirable that herein the "Goods" traffic expenditure should be kept quite distinct from the "Passenger".

24. The business of the line is permanently divided into two branches, "Passenger" and "Goods." In recording the receipts under these two heads there will be found numerous subdivisions in the several classes of passengers and various descriptions of Goods; but though it is desirable, if possible, to classify the expenses similarly, attaching to each class of passengers only its proper share of expenses, as we see in an admirable analysis of the Belgian Railway expenses by Mr. Belpair, there may be difficulty in doing this completely, and it may remain a subject for future consideration. I shall consider therefore at present the cost of working as rendered under two heads and reduced to two units the "passenger" and the "ton".

25. Preserving as strictly as possible, the distinction between "passenger" trains and "Goods" and keeping entirely separate the expenditure, the Government will probably require among other information the following to be given in periodical reports.

- 1st. The number of passengers of each class booked at each station (showing for what station) by each train.
- 2dly. The passenger mileage performed with each Engine in each day.
- 3dly. The mileage performed by each description of carriage with each train.
- 4thly. The total mileage of dead weight thus effected by each passenger train.
- 5thly. The weight of each train without its load, and exclusive of engine and tender.
- 6thly. The number of miles run by each Engine during a given time, with train and without, with the entire cost of such Engine during the time.

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7thly. The total expenditure, Locomotive and Carriage, during a given time, with the mileage work done thereby gross and nett; the cost per train mile, and the cost per passenger mile.

8thly. The same information above required in respect to the Passenger train will probably be required in regard to the Goods train, the ton being the unit.

26. The object of the above being to give the working results, as closely and in as complete detail as possible, it will be, for all practical purposes, sufficiently near the truth to reduce freight, other than "Goods," carried by the goods train, to the common unit of the "Ton" and the same with regard to freight, other than passengers, carried by the Passenger train.

27. Thus in the former case a certain number of passengers might be conveyed by "Goods" train. In recording the results such passengers might be reduced to tons at the usual rate, the same with cattle, &c. On the other hand, parcels carried with passenger train might be reduced to the passenger "unit" by allowing a certain weight of parcel as an equivalent to one passenger.

28. There seems to be no difficulty whatever in arriving at the several points above noticed. Indeed, any system of accounts properly kept must, I conceive, necessarily exhibit these several results.

29. With regard, for example, to the mileage of "passengers," "tons," and "empty vehicles," it can hardly be possible but that the returns of each station master would yield this information, and it only requires that it shall be made use of in a general return compiled from thence.

30. I think you will agree with me in anticipating great advantage from constant and careful study, and from the periodical publication of the results of your working operations in all their details. We may well hope to give to the public and to your shareholders something more intelligible and satisfactory than we find in the periodical reports of Companies in England; and as I believe the commercial success of these works in India depends upon their being constructed and worked with strict economy, so I am satisfied that such economy becomes impossible unless an accurate analysis of the expenditure in every branch is made practicable, and is demanded with punctuality and rigour.

I have the honor to be, &c.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 7th September 1855.

No. 53.

RAILWAY DEPARTMENT.
CONSULTING ENGINEER'S OFFICE.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

Sir,

I have the honor to request an early reply to my letter No. 324 of the 7th September 1855. Should you, however, in consequence of the number and variety of subjects treated upon in that letter be unable at present to favor me with a reply in full, I should be obliged by your noticing separately, and as soon as you conveniently can, the subjects referred to in paras 4, 5, 6, 7, and 8, regarding the closing of the Capital Account.

I have the honor, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 8th February 1856.

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MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 107.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer.

Sir,

1. I have the honor to acknowledge the receipt of your letter No. 53, dated the 8th Instant, calling for a reply to your letter No. 324, dated the 7th September last, or to that part of your letter, viz. paragraphs 4, 5, 6, 7 and 8, regarding the closing of the Capital Account.

2. The subject matter of your letter No. 324 is one of great moment, and has had the serious consideration not only of myself, but also of all Heads of the various Departments of this Company.

3. In reply to it, I beg to state that as it is probable that the Line will be completed and opened for Traffic to the Arcot Station in the course of a few months, up to that date all charges will of course be entered in Capital Account.

4. From the date of opening of the Line to the public for traffic, we shall, in accordance with the 14th paragraph of the Contract, commence a new set of Books, which will be called "The Revenue Accounts of the Madras Railway Company".

5. The Expenditure for construction, management, &c., upon those portions of Line not handed over to Traffic, the maintenance of way for such period as may be determined upon subsequent to its being handed over to Traffic, and the cost of constructing carriages and Rolling Stock, will be, as heretofore, charged to Capital Account.

6. On the opening of the Trunk line toward Bombay, or of any Branch lines, the Expenditure thereupon in like manner be entered in Capital Account but in separate books.

7. In respect to the period for which the Capital Account is to be charged for the maintenance of way, I would beg to observe that the custom in England, I believe, is that the Contractors engage to keep the Way and Works in repair for the period of one year; but in a climate where rain occasionally fails for a season, and is superabundant in other seasons, it seems to me that it would be just and proper that the effect of two seasons at least be allowed after the opening of the line before the maintenance of Works be thrown upon Revenue, so as to allow not only for the due consolidation of the Earthwork, but for the testing of all Masonry, waterway for drainage, &c., as in the event of failure of a Work of an expensive character the cost of the re-construction of it would form a large item to charge against the Revenue of the Line.

8. The question adduced in the 6th paragraph of your letter is one that I shall submit for the orders of the Board of Directors of this Company, viz., whether the Capital Account for any portion of the Line can be closed at the time it is handed over for Traffic. You are of opinion that when once a given length of Railway is declared as completed, and stocked in readiness to meet all probable demands on the part of the public, the Capital Account should be closed, never to be re-opened. It appears to me that there are difficulties in the way of our doing so. In the first place I suppose all works are to be charged to Capital, such as Station buildings, &c., as by the 2nd paragraph of the contract the East India Company agree to pay to the Railway Company the Capital expended by the said Railway Company, for the construction of the said Railway and works, on the surrender of the Line; it is clear therefore it was never contemplated that any additional works or stock which might be found necessary should be paid for out of Revenue. The necessity for an additional number of Stations, and their contiguity, depend much upon Traffic.

9. Upon the line between Vellore and Salem, the Station buildings now sanctioned are at distances of from 10 to 16 miles apart, should the Traffic ever require additional Buildings, how are they to be provided if, as you suggest, the Capital account of each portion of the line

as it is opened for traffic is to be closed? To obviate the possibility of the charge of constructing extra Stations coming hereafter upon Revenue, it would be necessary that the expense for the construction of them, at distances probably of from three to five miles apart, should be at once incurred, that a very large supply of Rolling Stock more than the apparent immediate traffic would require should be also at once constructed. This supply would be an arbitrary one; the money laid out upon such works would in a manner be lying idle, giving no immediate return; in the case of Carriages, &c., large sheds would moreover have to be constructed for their protection. On the other hand, admitting the principle that a certain number of Stations and quantity of Rolling Stock should be provided upon the Estimate of our probable immediate traffic, and the Capital Account closed thereupon; and that the supply of additional Stations, Locomotive power, and Rolling Stock, were left to be charged for in an auxiliary Capital Account, I think it will meet any objections that may present themselves.

10. In respect to the proportion of the expenses connected with the several Establishments that should be charged part to Capital and part to Revenue, I would beg to propose the following.

The Agency and Management.

11. The expenses of this Establishment should be charged as the mileage of the distance under construction is to that under traffic; viz. $\frac{1}{3}$ th, for the present, of the salary of the Agent and Manager and of his Office to Revenue, and $\frac{2}{3}$ ths to Capital.

The Chief Engineer's Department.

12. The whole of this Establishment should be charged, as heretofore, to Capital, including the expenses of the maintenance of Way, for each portion of the Line, as it is opened, for such period as may be decided upon; subsequently to such period Maintenance of Way will be charged to Revenue.

The Traffic Department.

13. The expenses connected with this Establishment should be charged to Revenue from the date of the opening of the Line for Traffic.

The Locomotive Department.

14. The Superintendent's Salary and that of his Office should, I think, so long as he is employed in the construction of Rolling Stock, be charged the one half to Capital, the other to Revenue. The Foremen and Artificers in this Department should, as far as practicable, be divided into two distinct Establishments, the one for Repairs and maintenance of Stock in use in the Traffic Department, chargeable to Revenue; the other for construction of Rolling Stock, &c., chargeable to Capital Account.

The General Storekeeper.

15. The Storekeeper's Salary and that of his Department should be periodically distributed, upon the cost of each Article passing through Stores—say monthly, and thus the sums would not be directly charged to either Capital or Revenue, but indirectly, according to the value of Stores issued to each.

The Chief Accountant's Department.

16. This Establishment should be divided into two parts; the one having the charge of all the Capital Accounts; the other of the Revenue Accounts, which would be charged to each accordingly. The Chief Accountant's salary, should, I think, be charged one half to Revenue, the other to Capital.

The Cashier and Chief Clerk's Salary and that of the Finance Establishment.

17. I should propose to charge in like proportion to the Agent and Manager, viz. $\frac{1}{3}$ th to Revenue and $\frac{2}{3}$ th to Capital.

Medical Department.

18. The Consulting Physician's salary in the same proportion.

19. The salaries of others in his Department, and the value of stores, should be charged according to distribution, and the Departments to which the Medical subordinates are attached.

20. I quite concur with you in thinking it is essentially necessary that all accounts between this Company and the Government should show distinctly the several amounts chargeable to Revenue and to Capital.

21. To effect this, I would propose that the expenditure under construction should be recorded precisely as heretofore as regards the Engineering Department. The expense in respect to salaries in the Traffic Manager's Department should be on a similar system to that now pursued with the Permanent Establishment, viz., application will be made to the Government for the sanction of such Establishments as from time to time may be found necessary for carrying on the duties at the several stations. A General abstract will be submitted for the salaries of the same, the whole charged to Revenue. In the Agent and Manager's, and all Departments in which a portion of the Establishment will be chargeable to Capital, I would propose that we add to the present Form A. two Columns, the one shewing the proportion to be charged to Capital, the other the proportion to be charged to Revenue, whilst the 3rd would exhibit the Total cost of each person's salary; and the Totals of each of the two Columns may be drawn on separate Receipts, under the head of Capital or Revenue, as the case may be; the 3rd Column will exhibit, as heretofore, the cost of the whole Establishment. The Storekeeper's salary and that of his Department should be drawn in the contingent charges for Stores monthly.

22. Having stated my opinion as to the proportion of the salaries, &c., of the several Establishments which should be charged between Capital and Revenue respectively, I beg to propose that advances should be made for the working of the line, on Revenue Account, on precisely the same plan as that now pursued in respect to Capital.

23. I shall from time to time, on the requisition of the Traffic Manager, do myself the honor of applying to the Government for the necessary amount of Establishment for stations, &c.; the salaries and wages of the same will be drawn in one general Abstract for the whole of this Department, authenticated in the usual manner; the amount, when sanctioned, will be drawn by Receipt upon the Treasury.

24. Bills for contingent charges will be submitted monthly for special sanction; this will of course include travelling allowances, &c., for this Department.

25. In the foregoing I have treated of advances made by the Government on the one hand, and the expenditure and its appropriation by the Railway Company on the other hand; and I shall now proceed to point out the system proposed in order to analyse the expenses and to distribute them over the several units of work.

26. In respect to the Locomotive and Carriage Building Departments, the accounts will be kept in the manner adverted to in 21st paragraph of your letter; they will shew the cost in labour and Material upon every Vehicle, &c., turned out, and the monthly statement of progress of construction of Rolling Stock furnished to you will give the information sought for as regards Lots under construction.

27. The information required by paragraph 22 of your letter shewing the expenditure in Fuel, Grease, &c., the amount expended in Repairs and all particulars connected with the operation of Engines, being that common to all Railways, will be furnished. I enclose a form submitted by the Locomotive Superintendent of a monthly Statement which will give at one view the required particulars.

28. The returns as asked for by 23d paragraph of your letter, recording the history of each Vehicle with the work done and money expended in work upon it, will be rendered; each Vehicle will have a distinguishing name or number, so that there will be no difficulty in keeping the Vehicles used for Goods Traffic distinct from those used for Passenger Traffic; this Return it is suggested, should be made up half yearly.

29. The value of a Return shewing the information as pointed out in the 24th paragraph of your letter is fully appreciated by the Railway Officers: but as you recommended, I think we can allow the matter to stand over for the present.

30. In the 25th paragraph of your letter you suggest that the Government will require that the expenditure upon Passenger Trains should be shewn separately from that upon Goods, and with this view that the Government will require to be furnished with the several Returns therein specified—Section 1. The number of Passengers of each class booked at each station, shewing for what station by each Train. The value of this Return is unquestioned, and the like Return is often obtained in England for the guidance of the Traffic Manager in the arrangement of the Trains for Districts, as well as for giving him information as to the probable Carriage accommodation to be provided in various localities by certain Trains: but it is found to be of such a voluminous character that it is only obtained at certain periods, upon change of season or other causes, and then only to a limited extent, say one or two days in each quarter; indeed, it will be observed, that so long as the number of Stations is limited to (say) 12, the preparation of such Return will be large, but feasible, but to present it in such a form as would shew at a glance the *locale* of the Traffic upon an extensive line of Railway, with only two or four Trains daily, could scarcely be accomplished.

31. In lieu of attempting to prepare Returns which would occupy nearly the whole time of any person to peruse, with any view to its utility, I would suggest that Statements be prepared shewing the information for one week in each quarter or one day in each month.

32. It is not the trouble that this Company would seek to avoid, but in obtaining useful information, I think you will agree with me, that it may be obtained at a cost far in excess of the advantages to be derived from such documents. I enclose a form of Return which will shew the information for one Train only.

33. Section 2 requires a Return shewing the Passenger Mileage performed by each Engine in each day. It is customary to keep a Diary shewing the work done by each Engine daily, whether for Passengers, Goods, or other Traffic, but I would submit that as the information is obtainable at any time it may be required, it may not be necessary to send such Return daily for the information of Government.

34. Section 3. The Mileage performed by each description of Carriage by each Train will be recorded and furnished as required.

35. Section 4. The Mileage of dead weight thus effected by each Passenger Train, the net weight of the Vehicles is recorded.

36. Section 5. The weight of each Train without its load and exclusive of Engine and Tender can be given, as it differs only from Section 4 by taking away the weight of the Engine and Tender.

37. Section 6. Requires the number of miles run by each Engine during a given time, with Train and without, with the entire cost of such Engine during the time; this information can be furnished periodically, say half yearly.

38. Section 7. The Total expenditure in the Locomotive and Carriage Department during a given time, with the Mileage work done thereby, both gross and net, the cost per Train mile, and cost per Passenger mile. I presume the expenditure alluded to applies to Engines and other Rolling stock actually in work; the information can be supplied periodically, but it is presumed that it is the cost per Passenger per Mile that is required.

39. Section 8. A like Return for Goods can be furnished.

40. In speaking of these Returns and of their being divided into Goods and Passenger Trains, I beg to remark that it does not appear to have suggested itself to you, that the Traffic, for some considerable time after the opening of the line, may necessitate the running of "mixed Trains," in which case, we should not arrive with as much accuracy as could be desired in working out the Traffic at the unit, either of the Ton or of the Passenger, we may arrive at it approximately.

41. The Traffic Manager suggests that a Return should be furnished which will shew the quantity of work done of each kind, whether 1st, 2nd, or 3rd, Class Passengers, Parcels, Horses, Carriages, Goods, and Cattle, and giving the tare of Vehicles of every description, so as to arrive at Gross and Net weights, and thus ascertain the number of Tons, and the amount of work done. Another Return, shewing the working expenses under every head of Locomotive in detail, Maintenance of way in detail, Traffic charges also in detail, forming a Grand Total of all charges against Revenue, would enable you to determine at what cost we were working the line.

42. The Passengers in the first Return would shew the Number of Passengers carried, and they would be averaged as so many to the Ton: an average would be furnished of tare, or dead weight, conveyed per Ton, or number of Passengers, so that the cost of conveying Passengers per Mile would be ascertained, and the same rule would apply to every description of Traffic. Auxiliary Returns could be supplied to elucidate the two Returns of work done and cost of working. I have no doubt that these Returns, in the first instance, will be the best to adopt; and one reason is that the expenditure in the Traffic Department will be of course on account of Traffic generally, and the Pay sheets for salaries and wages will contain, indiscriminately, the names of Men of every grade, whose time will be occupied by every description of Traffic, and would be properly chargeable to Coaching Traffic; comprising Passengers, Parcels, Horses, and Carriages, &c., and Goods and Cattle Traffic. The division of salaries and wages, therefore, could only be done by an approximation; it would be impossible to arrive at more than an average estimate of the division to be made of the cost upon each kind of Traffic.

43. Similar Returns may be applied to the other Departments.

44. I therefore beg to recommend that in the first instance, our Return be forwarded upon some such basis as that recommended by the Traffic Manager, leaving it to time and experience to perfect them, or until the complete set of Forms, according to which statistics of Traffic are to be recorded, shall be furnished, as laid down in Para: 15. Section I of the General Regulations.

45. In conclusion I beg to state, that I fully concur in the observations, contained in your letter, that the commercial success of Railways depends upon their being constructed and worked upon strict economy; and that an accurate analysis of the expenses in every branch of Traffic is essential to ensure this latter: indeed, it is an indisputable fact, that all Railway Managers and accountants are alive to the necessity of such Returns, and that they compile them for their own information, although it is true they give little or no publicity to the working of the interior economy of their lines, as there does not appear to them absolute necessity for doing so.

I have the honor to be, &c.

SIR,

Your most obedient servant,

T. A. JENKINS,

Agent and Manager.

Madras, 20th February 1856.

ENCLOSURES.

Return of Mileage Statistics of Receipts and Expenditure.

" of Traffic Statistics.

" of Number of Passengers of each class booked at each station.

Abstract of working expenses at the various Locomotive stations.

" of best coke, small coke, coal and oil consumed by Locomotive Engines, and Miles run.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th April 1856.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 85.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter No. 107, of the 20th Instant. It is gratifying to me to find that your views, on most of the important points touched upon in my letter No. 324 of the 7th September last, coincide with my own.

2. Before submitting your letter to Government I am desirous of remarking briefly upon the suggestion contained in the 30th para. of the letter under acknowledgment.

3. With reference to an intimation contained in the 25th para. of my letter above referred to, that Government will probably require a return of the number of passengers booked at each station (showing for what station) by each train, you observe that the value of this return is unquestioned, and that the like return is often obtained in England, but that it is found to be of such a voluminous character that it is only obtained in certain periods. You then propose that, in lieu of attempting to prepare returns which would occupy nearly the whole time of any person to peruse with any view to its utility, statements be prepared showing the information for one week in each quarter or one day in each month.

4. Such Returns give an idea of the general character of the traffic, but would not afford the information which I consider it probable the Government may require. In the 41st para. of your letter you state that the Traffic Manager suggests that a Return should be furnished showing the quantity of work done of each kind, whether 1st, 2nd, or 3rd class passengers, &c., and giving the tare of vehicles of every description, so as to arrive at gross and nett weight, &c.

5. I cannot quite understand how such a return can be prepared unless your Traffic Manager has in his hands the actual returns (as above described) from each station, which have been referred to by you as being very voluminous. If the Traffic Manager has them, of course the Government can have them.

6. That I may clearly understand your views and intentions, I shall feel obliged if you will forward to me as soon as possible forms of returns which you propose to require from station Masters, and also of that return which (compiled I presume from the former) your Traffic Manager, according to the 41st para. of your letter, suggests should be furnished.

7. I have only, in reference to the concluding para. of your letter, to remind you that the Government in this country occupy a peculiar position in regard to the Railway Companies, that whatever information of an important character the Railway Manager and Accountant are in the habit, as you state, of compiling for their own information, there can be no difficulty and need be no hesitation in laying before Government, and that such information, whether statistical or financial, if found to be of interest in the eyes of the Railway Manager, will be equally interesting and important to the Government.

I have the honor, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th February 1856.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 170.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter No. 85 dated 27th Ultimo, I have the honor to forward you

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for inspection (requesting that they may be returned), Forms of Returns to be made in the Traffic Department by Station Masters and others, and annex a copy of a letter from the Traffic Manager in explanation of the same.

2. You will perceive that the Forms he prepared contain the basis for compiling the information called for by you. A daily return, is transmitted by each Station Master, shewing the Number of Passengers by each class to each Station, but more minute information is recorded by them in their Books, copies of which, if ordered, can of course be supplied, shewing the Number of Passengers booked at each Station by each Train daily.

3. Other information also in respect to Carriages, Goods, Trucks, &c., &c., is obtainable.

4. The returns that I would venture to suggest should be furnished to the Government are:

No. 1. "Weekly," a statement showing Traffic from each source of Income.

2. "Monthly," a statement similar to the above.

3. "Monthly," an abstract of working expenses of the General Charges against Revenue, Excepting Locomotive and Permanent way.

4. "Monthly," a like return of the Locomotive Department.

5. "Monthly," a like return for the maintenance of Permanent Way.

6. "Half yearly," the Revenue account, in similar forms (slightly altered in detail) to those, sent herewith.

5. These returns are similar to those that are prepared in Bengal for the information of Government, and I beg to assure you that it was never contemplated by me that any information should be held back from the Government. I fully perceive the desirability of giving publicity to our affairs; the only question that presented itself to me was, to what extent was it desirable that we should go in preparing Statistical information, as I may be allowed to remark that, when documents become of a very voluminous character, the benefit derivable from them may not be an equivalent for the expense in preparing them.

6. I beg to send you a Form for Statistical information prepared by the Traffic Manager as required in your letter No. 85 dated 27th Ultimo.

7. These returns, those previously sent, or such other as the Government may be pleased to direct, shall be duly prepared; and for this purpose I propose with the sanction of Government to establish a Statistical Office.

I have the honor to be, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 20th March 1856.

Submitted (with observations) for the orders of Government,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th April 1856.

MADRAS RAILWAY TRAFFIC DEPARTMENT,
MARCH 17TH 1856.

No. 70.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. I have the honor to acknowledge the receipt of your letter No. 18, dated 3rd Instant, enclosing a letter from the Consulting Engineer, No. 85, dated February 27th, and herewith beg to send you copies of the returns required, and to state that the returns as now prepared by the Traffic Department are so framed as to furnish the basis for all the information called for by

the Consulting Engineer in his letter No. 321. For instance "The number of Passengers of each class booked at each station (shewing for what station) by each Train." You will observe that a Daily return of Passengers booked at each station is transmitted by the Station Master, and shews the number of Passengers booked of each class to each station. This would furnish the number of Passengers travelling daily upon the Line, shewing from what station to what station.

2. If more minute information is required, the Train Books show the number of each class of Passengers booked by each Station to each Station by each Train, but it is not customary to copy it.

3. From the Daily return of Passengers from each of the stations, the mileage can be ascertained by multiplying the number of Passengers booked at each of the 10 Stations, by the Distance travelled by each class of Passengers, and is of course a simple matter of Columns and Figures. Thus in the daily return alone, the former amount in the aggregate to 162, which have to be multiplied by the different distances which amount to 99, so that 162 sets of Figures have to be multiplied 99 times for each day—the operation is increased by the number of Trains running daily, if it be required to show the number of Passengers by each Train, and mileage; and of course as the Line increases in length, and the number of stations are proportionately increased, the work will increase in the same rates, but the information is obtainable.

4. The actual number of Carriages running with each Train of every kind is recorded on the Guards' Journal, which are deposited in the Traffic Manager's Office daily.

5. The weight of each Train, without its Load, can be calculated from the Guards' Journals, and the weight with the Load by adding the Weight of Passengers taken from the Train Book; and in like manner the weight of waggons taken from the goods Guards' Journals, and the Weight of Goods from the Invoices, which shew the number of the Truck and Train by which forwarded.

6. The mileage performed by each description of Carriages by each Train can be obtained from the Guards' Journals.

7. This shews that the basis of the information adverted to can always be forthcoming.

8. My object in suggesting the returns as per my letter No. 44 was, to place the information we undoubtedly have, in the best possible shape.

I have &c.,

(Signed) H. A. FLETCHER,
Traffic Manager.

(True Copy.)

T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 166.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter No. 170 of the 20th Instant, forwarding certain forms of Returns, &c.

2. These forms, I observe, are of two kinds, viz., those which you propose to bring into use in your several Departments for the better management of your Railway operations; and secondly, those which you propose to submit periodically to Government, and in which you consider that the information called for in my letter No. 321, of the 7th September 1855, will be found.

3. Of the first, I have only to observe that you must be doubtless well advised as to the number and the nature of the printed forms required for the purpose; that they appear to me rather voluminous, and would, I should fear, involve a large outlay on account of printing, but that it is highly satisfactory to find that your Traffic Manager considers they furnish a basis for all the information called for by this Office.

4. With regard to the forms which you propose to submit to Government I have to make a few observations.

5. The object aimed at in calling for information of this nature is not merely, or primarily, to facilitate the exercise of supervision and control over the proceedings of the several departments, but to obtain clear satisfactory and accurate data, by which to regulate all the important measures connected with the working of the Railway.

6. Having taken all possible care to construct and work a Railway on the most judicious and economical principles, the most difficult and important subject for consideration is the tariff.

7. In considering and discussing the question of what we shall charge for the conveyance of this, or the unit of traffic, we necessarily work completely in the dark, so long as we do not know what shown by daily experience to be the actual expense incurred in moving it.

8. I think plainly points to the conclusion that our expenses should be as far as possible classified and our statistical information, as much as possible, arranged under heads corresponding to those which constitute the subdivision of our tariff. This should be I think our aim. We may find it fully practicable in all cases, and, as you justly observe, in some the benefit derivable may not be an equivalent for the expense in preparing such returns. The benefit is nevertheless very great.

9. I now proceed to offer a few remarks on these forms of report.

10. The first is numbered 1 & 2. This is merely an abstract. It is useful, but such documents are always better prepared by shewing on their face the grounds of any conclusion arrived at. Thus before the "gross earning per train mile" there should be a column shewing the number of miles run by trains, with a reference to the report (by number or letter as the case may be) in which that fact will be found. In the abstract below passengers are classified, but goods are not. Now it appears to me that with a view to the operation of your tariff, it is quite as important to classify the traffic in "goods" as that in "passengers," to see the effect on the different rates on the different classes of goods, the influence on your profits exercised by the different description of produce.

11. No. 3 is another abstract, and I observe the expenses in the Traffic department are kept herein quite distinct for "coaching" and for "goods" traffic.

12. No. 4 is a return of Locomotive expenses. This appears to be complete with one exception, viz. that the expense on "goods" and "passengers" is not kept distinct. This I take to be a serious defect, inasmuch as the totally different circumstances under which the two descriptions of traffic are carried on, render it very desirable that we should know with all possible certainty how the Locomotive expenses are affected by moving heavy loads with a particular description of Engine at 10 or 12 miles an hour, in contrast with the same or another Engine conveying a lighter load at double the speed. There can be no difficulty in keeping the expenditure separate under these two heads, the necessity as in all similar cases of dividing all "general" expenses of the Department arbitrarily between the two, being at the same time fully recognized.

13. No. 5 is Maintenance of Way—another abstract. In this form there is nothing calling for particular observations, except that "Miscellaneous charges" should stand in a column opposite each district, so as to be embodied in its total. Perhaps it will be as well to keep to the Division, District, or Section, already established.

14. The next Return is the Revenue account, in which I should wish to see the expenditure classed, as far as possible, under the two descriptions of traffic. This might be done simply by an additional column with a reference to the previous documents, thus :

	Goods. A.			Passengers. B.			Total.		
Maintenance of Way (A).....	"	"	"	"	"	"	"	"	"
Locomotive Department (B).....	"	"	"	"	"	"	"	"	"

The maintenance of way can only be divided among the two classes by a reference to the amount of work done in each, the number of miles travelled over in each. I see no value in the Column "cost per mile", except as concerns "maintenance". That headed per centage on working expenses is useful.

15. Of the next two forms, I have only to observe that the Goods are not classified, and that in the first the result seems to be confined to train mile, while in the last form the information much wanted is supposed to be given, viz., the cost per ton mile, but none of the previous returns give the means of checking this result.

16. In addition to the return which I have been considering and which you will perhaps be able to modify as suggested, I would request to be favored, at all events in the earlier stages of your proceeding, with two others to the following effect, one in form similar to that adopted in Bengal, and which was lately given to you from my Office shewing the number of tickets issued at each station to each station. The right hand portion of the sheet is not required by Government, as it is merely a Departmental check on the previous column. It would be an improvement if a column were added immediately after the "Names of Stations," shewing in each case the distance from the place of issue. In this form I would wish the traffic under every different head, as well as passengers to be given.

17. The other return required is shewn in the accompanying form. This you will observe can be made out for passenger train and goods, or while so running for mixed trains. By "mileage" is meant, as is I believe the universal meaning, the number of units multiplied into the distance travelled. Here again I have merely given a form, according to which the Government may have presented to them at one view, the mileage of each separate description of traffic. Passengers by classes, parcels, horses, &c., goods by classes, &c.

18. In a letter from Mr. Fletcher, which accompanied yours under acknowledgment, that gentleman shews that the mileage can only be obtained by an elaborate and troublesome process of no less (in the case of 10 stations) than 162 different amounts by 99 others. This is, in fact, a number of individuals, as if it were thrown upon one man. The daily issue of tickets throughout the line might be thus made to appear impracticable, by keeping out of sight the fact that it is a work necessarily sub-divided among a great number of men, and in the same manner in collecting this most interesting and important information, the various station masters might be so employed as to get the result above described, as involving the multiplication of 162 sets of figures 99 times each day, in a few minutes.

19. You will have a station Master at each station. From the departure of one train to the near approach of another, what will be his occupation? I cannot think it too much to expect from him a "Mileage" return made according to form for each train. He could prepare it in every case in a few minutes from the weight nett and tare which he has just seen discharged at his station. Such mileage return forwarded to the Head Quarters Office would simply require these totals arranged in parallel columns in one form, and added up into one grand total for each description of traffic to enable you to prepare the return, form of which is now forwarded.

20. The returns I have been considering are merely abstract statements exhibiting results either financial or statistical. The periodical accounts of expenditure in your several departments in connection with the "Revenue" account will, I presume, be submitted for sanction in the manner already obtaining in connection with the "Capital" expenditure.

I have the honor, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 31st March 1856.

(True Copies.)

T. T. PEARS,

Consulting Engineer for Railways.

Madras Railway.

Report of work done by Train No.
From Madras A. M. to Arcot Miles Monday May 1856.
Engine No.

Engine and Tender.		Mileage of			
		Tare.	Nett.	Total.	Mileage.
		Tons 1,950.		Passengers.	Equivalent Weight.
Nett.		Maunds.			Maunds.
Passenger 1st.....			600		
" 2nd.....			1,500		
" 3rd.....			1,400	3,500	5,250
Mails Maunds.....			200		200
Parcels ".....			450		450
Total Nett.....					5,900

Tare.	Weight of each.	Maunds.		
	Maunds.			
Passengers.				
1st Class Carriage.....	216	12,960		
2nd ".....	189	11,340		
3rd ".....	162	9,720		
Break Van.....	189	11,340		
Total Tare.....		45,360		45,360
Gross Total.....				51,260

Coke Consumed Maunds	or	lbs.	per	train	mile
			"	{ Maund	"
			"	gross.	"
			"	Maund nett.	"

Receipts.		Total.							
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.
1st Class.....									
2nd ".....									
3rd ".....									
Parcels.....									
Mail.....									
Total.....									

On letters (Nos. 107 and 170) from the Agent and Manager of the Madras Railway Company, dated respectively the 20th February and 20th March 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

Letter to Agent No. 324, dated 27th September, 1855, copy appended. In reply to a communication from this Office, the Agent submits in these letters his opinion upon various important questions connected with the working of the Railway when opened for traffic; the forms in which the accounts shall be rendered, the separation of Capital and Revenue accounts.

2. Of the subjects discussed in these letters the most important are:—

- (1.) The closing capital account.
- (2.) The accounts required by Government in connection with the traffic operations and results.
3. The question of closing the capital accounts in connection with Railways is one which has been, and continues occasionally to be, warmly discussed in England. It is a question of much greater importance there than here.

4. There are in England those who argue that the capital account of a Railway should be at certain times closed for ever—all subsequent expenditure upon the work, arising as it does out of the necessities of existing traffic, being met from the Revenue. And there are others who argue that the capital account can never, and ought never, to be closed, so long as a continuing increasing business renders the enlargement of permanent structures and the extension of stock necessary.

5. The difficulty of coming to an agreement upon this point appears to me to arise chiefly from want of confidence in the management; and there is no doubt that the power of spending money out of capital is liable to abuse, and has been abused; or that the tenure by which Railway property is held, gives great force to the temptation to increase immediate profits at the expense of capital.

6. The manner in which the capital account shall be treated is very clearly laid down in the contract with the Railway Company; para 12. It is there stated that, "as soon as the said Railway and works shall have been completed and finished, with the necessary rolling stock and plant, the said capital account shall be made up," &c.; and further on—"but upon any additions, alterations, or improvements, such as shall properly be chargeable to the capital account being thereafter made with the sanction and approval of the East India Company, to, of, or in, the said Railway, or the works, conveniences, or Telegraphs thereto belonging, or the Engines, Carriages, and other plant and machinery, the cost necessarily incurred in executing such additions, alterations, or improvements, shall be added to the said capital account, &c."

7. It is clear, therefore, that the capital account is virtually left open; expenditure therein being strictly watched by Government; and it only remains to determine when the expenditure in maintaining works already executed shall cease to be debited to capital.

8. Some little difficulty may arise in drawing the precise line, from the circumstance that every line must open for Traffic before it is quite complete in all its parts; and in a country like this, where so great a boon is conferred upon the public thereby, it is neither to be desired nor expected, that the opening should be deferred solely in consequence of its incompleteness on points that do not affect the safety or regularity of the traffic. In the case, for example, of stations, the building may be not in all respects completed when the line is opened; it may be partly in use, and partly under construction; and so long as this is the case it will be impossible to keep the two accounts quite distinct.

9. The best and simplest course will in my opinion be this; to allow all expenditure upon the road, the permanent way, banks, cuttings, &c. for one year (as usual with contractors) after the date of the opening to go to Capital, and thenceforward maintain the whole from Revenue. With respect to buildings, stations, bungalows, &c., all estimates sanctioned with the express provision that they were on Capital accounts, prior to the date terminating the abovementioned twelvemonth, should go to Capital; but that any excess upon such estimates must be borne by revenue, unless specially reported upon, and specially admitted by Government, as a charge to Capital.

10. We should thus, and thus only I apprehend, be able to draw a distinct line between the Capital expenditure on first construction, as referred to in the first of the above two Extracts from the Contract, and the Capital expenditure on additions, alterations, and improvements referred to in the second.

11. I gave my opinion to the Agent and Manager as to the period when Capital accounts should be closed, but had I recollected, at the time, this clause in the contract, I should have considered it unnecessary to do so. It will not be expected that I should offer any opinion upon the subject now for a similar reason. I shall only therefore observe that, while the danger arising from keeping the Capital account open here is in consequence of the controlling power being placed in the hands of Government much less than in England; whatever temptation the Directors and Managers of a Railway may be exposed to, thereby, is of a totally different character here. There, when the Capital account is unjustly charged with expenditure, the object is to keep up the dividend, and with it the market value of shares. Here, the guarantee is calculated to relieve the proprietors in great measure from anxiety about the dividends; while the same guarantee might seem to render an extension of Capital expenditure by no means so alarming as in England. To carry to Capital expenditure any thing justly chargeable to Revenue, would be thus to increase the amount invested on a guaranteed interest, and at the same time to increase the dividend on that previously invested. It is clear, therefore, that this continued expenditure of "Capital" will require to be closely watched, and strictly controlled in this country.

12. With respect to the Rolling Stock, I have already called for a report of the number and description of vehicles estimated as necessary for the portion of line, 65 miles, about to be opened for public traffic. In controlling the capital expenditure in this department, the fairest method will, I think, be, to admit at once a certain stock as necessary, and provide it out of Capital, to admit subsequently an expenditure out of Capital, for such addition to that stock as might from time to time be represented as necessary, but to require that the whole quantity, thus increased, should be thenceforward maintained out of revenue.

13. Should the Government be pleased to approve of these general principles there will be no difficulty; since from the date of opening all expenditure will be proposed under the head either of Capital or Revenue; in disposing of each separate expenditure upon its own merits in strict accordance with the terms of the Contract.

14. The subject next in importance is the "accounts of receipt and expenditure." I have been very desirous of seeing these framed in a really useful and intelligible form: and, from the letters now submitted, it would appear that no difficulty is anticipated by the Railway officials in furnishing all the information required.

15. The Ordinary reports of "cost per train mile" could only satisfy persons of two classes—those who did not wish the real working of a line to be laid bare, and those who knew nothing about the matter.

16. The Government will obtain, I trust, from this Company accurate periodical statements of the work really done in each kind—of the number of people, and the number of tons carried over a given distance, and of the money paid by the public for the transport of these "Units of traffic" contrasted with the cost to the Company of their transport. I consider it impossible that the operations of a Railway can be satisfactorily conducted, or that full justice can be done either to the Railway Company or the people, until those who are entrusted with the control of those operations have established the means of obtaining, from time to time, accurate data of this description.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th April 1856.

Extract from the Minutes of Consultation, dated 9th May 1856.

Read the following observations of the Consulting Engineer on letters from the Agent and Manager of the Railway Company.

(Here enter 9th April 1856.)

1. With the foregoing observations, the Consulting Engineer has laid before Government a correspondence with the Agent and Manager of the Railway Company, upon various important questions connected with the working of the Railway when opened for traffic, the forms in which the Accounts shall be rendered, and the separation of "Capital" and "Revenue" Accounts.
2. The Right Honorable the Governor in Council has given this very important subject his careful consideration—he entirely concurs in the views expressed by Colonel Pears on the several points adverted to in the papers submitted by him, and approves of the general principles enunciated in his observations. He is glad to observe that no difficulty is anticipated by the Railway Authorities in furnishing all the information required in the "Accounts of receipt and expenditure."

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

EXPENDITURE IN ENGLAND.

RAILWAY DEPARTMENT.
CONSULTING ENGINEER'S OFFICE.

To T. PYCROFT, Esquire.

No. 43.

SIR,

Chief Secretary to Government, Fort Saint George.

1. In order that we may be in a position hereafter to frame and publish accurate reports of the result of our Railway proceedings, it seems highly desirable that we should have the means of including in our statement of capital expenditure that incurred in Europe.
2. A great portion of this we already have in the invoices of stores forwarded to the Agent, but there are many home charges of which we receive no information. Should the Government concur with me in thinking it desirable that we should be kept informed of these charges, I would recommend that a representation be made to the Honorable Court on the subject, and that they be requested to cause the information to be furnished by the Railway Board from the beginning.
3. The expenditure in Europe, it may be observed, is of two kinds—the payment of salaries, with office and other contingent expenses; and the expenditure upon particular supplies of stores. The whole of the latter ought to be, and I believe is, communicated with regularity and accuracy to the Agent, in order that the stores when brought on to his return may be correctly valued. With regard to the former, it would be interesting and important for us in India to receive an abstract statement of expenditure month by month in Europe upon salaries, office expenses, contingencies, &c.
4. Assuming that under the above two General Heads would fall the whole of the home expenditure, we should be thus enabled from time to time to exhibit the actual cost of each portion of the line successively opened to the public.

I have the honor to be, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 20th March 1856.

Extract from the Minutes of Consultation, dated 3rd April 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 26th March 1856)

The Government concur with the Consulting Engineer that it would be very desirable to have information of the expenditure incurred in Europe on account of the Madras Railway, and they will accordingly apply to the Honorable the Court of Directors to be furnished regularly with a Statement of the nature required by Colonel Pears.

(A true Extract)

(Signed) T. PYCROFT,

Chief Secretary.

ESTIMATES, DISTRICT IV.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 462.

To LIEUTENANT COLONEL T. T. PEARS, C. B.

Consulting Engineer.

SIR,

I have the honor to forward the Estimate of Section I District IV, amounting to Rupees 215,287, and request that you will have the goodness to obtain the sanction of the Government for the outlay.

2. The Plan of this Section of the District has already been forwarded to you.

3. On a reference being made to Mr. Bruce to transmit with the Estimate, the plans of the several works of Masonry adverted to in the Estimate as required by you in your letter No. 233, dated 25th ultimo, that Gentleman states as follows:—"The plans of any bridges on District IV different from those which have already been submitted, will be forwarded from my Office. As I have already intimated, many of our Bridges are the same on different Districts, and it is not necessary to submit separate plans in each case, but the number of the plan named in the Estimate will enable Colonel Pears to refer to the plan which is the base of each Estimate."

I have the honor to be, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 20th September 1855.

Submitted (with observations) for the orders of Government.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 23rd October 1856.

RAILWAY DEPARTMENT.
CONSULTING ENGINEER'S OFFICE.

No. 348.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 462, of the 20th ultimo, forwarding an estimate of Section I District 4.

From the 3rd para of the above letter I find that Mr. Bruce states it is not necessary to submit separate plans (for bridges) in each case, but the number of the plan named in the estimate will enable me to refer to the plan which is the base of each estimate.

I quite agree with your Chief Engineer that one plan in my Office for each description of work will be quite sufficient for reference on examining estimates for precisely similar works.

To carry out the system fully and effectually, however, the plans should be distinctly numbered, and the number of plan and description of work referred to in each estimate.

It does not appear to me that this numbering of plans has been carefully attended to, either in the preparation of drawings, or in the references on the estimate.

I enclose a Statement of some of the plans in my Office (exclusive generally of traces), showing those that are numbered and those that are not, and I request your attention to the circumstance of plan No. 23, being referred to in the estimate for District 7 Section 1, as that of the Muttloor Bridge; whereas that plan has no number at all, and of plan No. 7 being alluded to in the estimate for District 4 Section 1, as that for a single 12 feet arch in a 16 feet embankment, whereas the No. 7 in my Office is for a single 9 foot arch in a 9 feet embankment.

I shall feel obliged by your favoring me with a list of the plans furnished up to the present time, with their dates and the numbers affixed to each in the Chief Engineer's Office; and I return the estimates not yet submitted to Government, with a request that the references to plans already furnished may be distinctly marked, and the remaining plans submitted with the least possible delay.

I request, as a general rule, that all drawings forwarded to my Office may be mounted.

Sketches may be first forwarded showing the general character of the work proposed, and upon the Government sanction having been given, fair plans with details should be prepared for submission with the estimates, and for record in the Government Office.

The fair drawings should always be on drawing paper, mounted and bound. I have also to request that you will be good enough to note distinctly on the margin of your letter, the title and number of each drawing forwarded therewith.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 2nd October, 1855.

TO MAJOR J. H. BELI,

No. 265.

MADRAS RAILWAY, 7TH MAY 1856.

In charge of the Office of Consulting Engineer for Railways.

SIR,

I have the honor to submit for the sanction of the Government the estimate of Section II district IV, amounting to Rupees 3,23,425.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 23rd October 1856.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

No. 215.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 462 and 265, of the 20th September 1855 and 7th May 1856 respectively.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent submits for the sanction of Government Surveys and Estimates of that portion of the Railway which constitutes the 4th district, beginning at the 72nd and ending at the 98th mile from Madras.

2. These several documents have been forwarded, it will be observed, at intervals, and have been reserved until the Plan and Estimate for the whole District were ready for submission to Government.

3. The Survey and section of the 2nd portion of this district had to be returned with the Estimate for correction; several discrepancies being discovered in the plan and Estimate. They were received back at the end of August last.

4. The district of which Surveys are now submitted lies in North Arcot, and between the villages of Trivellum and Goriattum. It is 26 miles long, and is chiefly remarkable as following up the valley of the Palar, a feeder of which river (called the Goriattum River) it crosses, at about 1½ miles to the S. E. of the town of Goriattum.

5. The Estimate, amounting to Rupees 46,572, for constructing a bridge of 24 arches, each 30 feet span, across the Goriattum River, received the sanction of Government on the 16th October 1855.

6. The Estimates now submitted include, as usual, the whole of the work up to the formation level, viz. the cost of laying permanent way, ballasting, gates, fencing, and miscellaneous, including temporary bungalows for the Engineer and his Subordinates. They also include an allowance at the rate of Rupees 1,500, per mile, for maintenance of way for 12 months from the date of opening the line.

7. The total amount of the Estimate is as follows:—

Section I.....	Rupees 2,15,287 0 0
Section 2.....	3,23,425 0 0
Total for the district.....	5,38,712 0 0

8. As the length of the district is 26 miles, the cost per mile, exclusive of Stations, Rolling Stock, and of the materials of the permanent way, is consequently Rupees 20,720.

9. This is higher than the Estimates hitherto submitted, with exception of that for district 3, which, inclusive of the Estimate for the Poiney bridge, cost an average of Rupees 22,300 per mile.

10. The details of the Estimate of this District are as follows:—

Brickwork.....	Rupees 1,50,953 8 4
Metalling of Roads.....	5,000 0 0
Earthwork in road approaches.....	1,875 0 0
do. in cuttings and embankments.....	1,33,374 0 0
do. at Stations extra drains, &c.....	2,718 12 0
Fencing.....	25,168 0 0
Ballasting.....	72,241 0 0
Permanent way.....	49,287 8 0
Gates.....	5,000 0 0
Miscellaneous.....	7,556 0 0
Maintenance of way and works.....	39,000 0 0
Contingencies.....	46,538 5 3
Total Rupees.....	5,38,712 0 0

11. The country throughout District No. 4 is gently undulating, and may be said to be generally favorable. The reason of the cost per mile being somewhat excessive arises, partly, from the Goriattum bridge and another large masonry work swelling the Estimate, and partly from an extra sum of Rupees 500 being included for maintenance of way on the present occasion—this item being entered as Rupees 1,500 instead of Rupees 1,000 per mile as heretofore.

12. The Estimated amount of earthwork on the first section of this District is 66,806 cubic yards, or 47,447 cubic yards per mile. The formation level being 20 feet and slopes 2 to 1, we have thus an average height (or depth) of 7 feet. On the 2nd section the amount is cubic yards 8,05,850, or 61,987 cubic yards per mile, giving an average height, or depth, of 8 feet.

13. With these average heights, or depths, the maximum height of embankment in the District is seen by the sections to be 18.93 feet, and the maximum depth of cutting 14.51 feet.

14. Mr. Bruce's data for earthwork, viz. 1 A. 6 P. per cubic yard, appears moderate enough, but at the same time sufficient, considering the generally easy nature of the soil throughout the District.

15. The characteristics of the line attained by the above expenditure in earthwork, are exhibited in the following table of planes.

No. of planes.	Length in miles and chains.	Rate of inclination.
1	0 40	1 in 528 Descending.
2	0 40	Level.
3	1 0	1 in 528 Descending.
4	1 0	1 in 660 Ascending.
5	7 0	1 in 440 do.
6	2 0	1 in 264 do.
7	1 0	1 in 528 do.
8	5 40	1 in 880 do.
9	3 0	1 in 480 do.
10	2 12	1 in 285,105 do.
11	1 61	1 in 1,056 do.
12	0 44	Level.

16. The gradients throughout the District are easy, the steepest being 1 in 264, or a rise of 20 feet in the mile, for a length of 2 miles. With the exception of the first half mile, which descends from Trivellum, and the 2nd and the last plane (about ½ a mile each in length) which are level, the whole of the above planes ascend gradually with the country.

17. The total difference of level, rising from east to west, on these 26 miles, is 245.77 feet, which gives a mean rise of 9.45 feet in the mile, or about 1 in 559.

18. The estimated cost of works of masonry on this District, inclusive of the Goriattum bridge, is Rs. 1,97,525-8-4, being at the rate of Rs. 7,597-2-0 per mile.

19. Next in importance to the Goriattum bridge, alluded to in para 6 as already sanctioned, comes a bridge of 12 arches, each 30 feet span, over a branch of the same Goriattum River, at a distance of 13 chains beyond the main river.

20. The price allowed in the estimate per cubic yard of masonry in the 1st section is, Rs. 3-2-0, in the 2d Rs. 4 for the Goriattum bridge, and Rs. 3-6-0 for the other works. These appear fair enough, and admit of the work being well performed within those rates.

21. There is only one rail girder bridge proposed throughout the District, viz. one with 4 openings of 7 feet each. With the bearing thus reduced, there is not the same amount of objection to this description of bridge. Nevertheless in all possible cases, I should prefer a more substantial description of work.

22. It is proposed to have 3 stations in this District situated at Trivellum, Vellore, and Goriattum, at distances, respectively, of 73, 80½ and 95½ miles from Madras. The actual distance of the Vellore station from Vellore is 3½ miles, on the opposite side of the Palar.

23. The Estimates for these Stations are not included in that now forwarded, but with their corresponding plans will be submitted hereafter. Sanction for commencing work at the Vellore Station was granted by Government under date the 10th January 1856; and steps are being taken to put in hand those at Trivellum and Goriattum.

24. It has been observed above, that the present Estimate amounts to Rs. 20,720 per mile. To calculate the entire cost of this portion of the line we have to add the rails, chairs, &c., and sleepers, and the stations. Taking the stations at Rupees 1,700 per mile, and the materials of the permanent way at Rupees 25,000, we should have an estimate, allowing the most liberal rates in every case, of Rupees 47,420 per mile for the cost of the line in working order, and exclusive of stock.

25. This, although in itself a large sum, and exceeding the estimated cost of each of the 1st and 2nd districts, is still below that of the line in the 3rd District, viz. by Rupees 5,420 per mile. As the Estimate for District 3 came to exceed that of each former District, viz. by the Estimate for the Poiney bridge being distributed over the cost per mile; so No. 4 District shows a greater average of cost per mile, not only from its including the two bridges over the Goriattum River, (main and branch), but as the entire District runs along the valley of the Palar, from its being necessary to provide suitable accommodation for the whole of the drainage into that river.

26. The other items of the estimate now submitted appear to call for no special remarks, the data for "fencing", "metalling", and "ballasting", being much the same for this, No. 4 district, as were those for No. 3.

27. For Engineers and Inspectors' bungalows, it will be seen, that an allowance is made of Rupees 2,500 for the district. This amount is in excess by Rupees 1,280 of that sanctioned by Government, as per orders in No. 158 dated 12th November 1853. No. 117 dated 26th May 1854. the margin, and I would accordingly recommend that that excess should not be admitted; and that the sum allowed by Government, viz. Rupees 1,220, should be alone sanctioned.

28. With the above trifling modification, I would recommend therefore that the Estimate be passed to the extent of Rupees 5,37,432-0-0, or exclusive of the amount of Rupees 16,572, already sanctioned, for the Goriattum Bridge, that sanction be granted for Rupees (4,90,860) Four hundred and ninety thousand, eight hundred and sixty.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 23rd October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 384.

Extract from the Minutes of Consultation, dated 4th November 1856.

Read the following observations by the Consulting Engineer on letters from the Agent and Manager of the Madras Railway Company.

(Here enter 23rd October 1856, No. 215.)

With the foregoing observations the Consulting Engineer submits the Surveys and Estimates furnished by the Railway Agent for the 1st and 2nd Sections of District IV of the Madras Railway, embracing an extent of 26 miles, and lying in North Arcot between the Villages of Trivellum and Goriattum. The Estimates amount together to Rupees 5,38,712, and provide as usual for the whole of the work up to the formation level, viz. the cost of laying permanent way, ballasting, gates, fencing, contingencies and miscellaneous, including temporary bungalows for the Engineer and his subordinates, they also include an allowance of Rs. 1,500 per mile for "maintenance of way" for one year from the date of opening the line.

Section 1 Rs. 2,15,287.
Section 2 Rs. 3,23,425.
Rs. 5,38,712.

2. The cost per mile for the above District is, exclusive of Stations, Rolling Stock, and the materials of the permanent way, Rupees 20,720, being higher than the Estimates hitherto submitted, with the exception of that for District III which, inclusive of the Estimate for the Poiney bridge, cost an average of Rupees 22,300 per mile. The excess of the cost per mile in District IV is said to arise partly from the Goriattum bridge and another large masonry work swelling the Estimate, and partly from an extra sum of Rupees 500 being included for "maintenance of way."

3. With regard to Engineers and Inspectors bungalows, an allowance is made of Rs. 2,500 for the District being Rs. 1,280 in excess of that authorized by Government. Colonel Pears is of opinion that this excess should not be admitted, and, with this trifling modification, recommends that the Estimates be passed to the extent of Rs. 5,37,432 or, exclusive of Rs. 46,572 already* sanctioned for the Goriattum bridge Rs. 4,90,860. This amount, Four lacks, ninety thousand eight hundred and sixty, is accordingly sanctioned by the Government.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS TERMINUS STATION BUILDINGS, &c.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 61.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

Sir,

With reference to your letter, No 14, dated the 10th instant, I have honor to annex a copy of a letter from the Chief Engineer, by which it appears that the estimated weight of the corrugated iron is 2lb per superficial foot. The plan of the Iron Work for the Passenger Shed at Royapooram, as called for by you, I beg to send herewith.

* 29. 2. The Drawing of Passenger Shed is herewith returned numbered.*

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 28th January 1856.

Submitted (with observations) for the orders of Government.

Madras 13th June 1856.

T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
JANUARY 22ND 1856.

DEAR SIR,

No. 49.

I beg to hand you the plan shewing the details of the roof of the passenger Shed. The weight of the corrugated iron will be about 2lb. per superficial foot, then below that is the planking.

I am not sanguine of the success of the corrugated iron roof in this country. I therefore think it desirable to have the roof framed so as to bear the heavier tiled covering should it be necessary.

Yours very truly,

(Signed) GEORGE B. BRUCE.

Chief Engineer.

To MAJOR JENKINS,

Agent and Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 163.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

Sir,

With reference to your letter, No. 112, dated the 10th instant, I have the honor to re-transmit the plan showing the Passenger Platform at Royapooram, and to acquaint you that the uncovered Platform, shown in the Estimate, is a platform on the North side of the Station House, which is reported to be already built, and consequently must necessarily, I am told, be included in the estimate of the new Passenger Shed, although it is not absolutely required by the new arrangement.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 13th June 1856.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 20th March 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 158.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

Sir,

I have the honor to acknowledge the receipt of your letter, No. 163, of the 20th instant, and to return the Estimate* for correction. I learn from your letter that the "uncovered platform" is North of the Station building, while in the Estimate it is described as being South.

2. I have further to request that the abstract of Estimate may be so prepared as to show distinctly the sum now requiring sanction, in addition to that which has been already sanctioned.

3. The first item in the abstract, as it now stands, can only require fresh "sanction as regards the expense of taking down."

4. The "uncovered platform," if it be that described in your letter, cannot now require sanction.

5. All that appears to require sanction is the difference between the cost of the Passenger Shed, according to the new plan, and that previously estimated for, in the alterations to the Station house itself.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th March 1856.

MADRAS RAILWAY, 7TH MAY 1856.

No. 264.

To MAJOR J. H. BELL,

SIR,

In charge of the Office of Consulting Engineer for Railways.

With reference to your letter, No 158, dated the 27th of March, I have the honor to re-transmit the Estimate for the construction of the Passenger Shed at Royapooram, and annex a copy of a letter from the Chief Railway Engineer in explanation of the same.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 13th June 1856.

T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
CAMP SALEM, 5TH APRIL 1856.

To MAJOR T. A. JENKINS,

SIR,

Agent and Manager.

1. I have the honor to acknowledge the receipt of your letter, No 245.
2. The Estimate returned appears to me to be correct. The sum for which sanction is required is Rs. 34,151, thirty-four thousand one hundred and fifty-one, being the money which will have to be spent in carrying out the original plan.
3. The Summary of the Estimate shows the expense which has been incurred in carrying out the old design under the original sanction, and the cost to be incurred in executing the new work.
4. These added together come to Rs. 82,646, eighty-two thousand six hundred and forty-six. From this is to be deducted the sanction we have already received for Rs. 48,495, forty-eight thousand four hundred and ninety-five, leaving, as I have previously stated, the sum of Rs. 34,151, for which sanction is required, which sum is shown in figures and in writing on the face of the abstract.
5. The first item in the abstract does only require sanction as regards "taking down," and we only ask for that sanction inasmuch as the cost of building is included in the sum of Rs. 2,124, and also in the sum of Rs. 48,122, which is deducted from the total sum of Rs. 82,646.
6. The amount for which sanction is asked is Rs. 34,151, and I do not see how I can put the abstract in any other form without getting into confusion.
7. I hope this explanation may be satisfactory; if not, I will put the Estimate in any shape you desire, the amount running the same.

I am, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 116.

On letters (Nos. 61, 163, and 264,) from the Agent and Manager of the Madras Railway Company, dated, severally, the 28th January, 20th March, and 7th May 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

These letters have reference to the revised Plan and Estimate for the Passenger's shed at the Royapooram Station, and to the order of Government, No. 294, in the Financial Railway Department, dated the 22nd November 1855.

2. The Plan and Estimate are now submitted for sanction. The latter requires some explanation.

3. The Estimate sanctioned for the terminal Station Buildings, in an order of Government, dated the 14th February 1855, included the cost of Passengers' Shed, as then proposed, viz. Rupees 48,495. In consequence of a representation from the Agent regarding the height of the Platform, it became necessary to make some alterations in the proposed arrangement—alterations, which, with the reasons for proposing them, were explained in my Report, No. 178, of the 15th November 1855.

4. The additional work, involved in the change of plan, consisted of a verandah along the side (North) of the Station Building, where it was first proposed to place the Shed. This amounts according to the present Estimate, to Rupees 19,659.

5. Works connected with the Passenger's Shed as originally proposed, now pulled down amount to Rupees 2,124.

6. An uncovered platform, being in the first instance one of the covered platforms of the Passenger's Shed, is now estimated for, separately, at Rupees 4,117, while the new Passengers' Shed with the raised platform amounts, according to the present estimate, to Rupees 56,746.

7. From the Estimate of the works, as now proposed, amounting to Rupees 82,646, is deducted the sum of Rupees 48,495, being the portion of the Estimate already sanctioned due to the Passenger Shed, and the additional sum now requiring sanction is Rupees 34,151.

8. This additional demand has arisen from the mistake made, in the first instance, regarding the platforms; but it must be observed that in rectifying that error, a great improvement is made to the Station Building itself, by the addition of the Northern Verandah.

9. I would recommend that the accompanying estimate of Rupees 82,646 be sanctioned, involving an addition of Rupees 34,151 to that sanctioned by Government in an order, No. 31, dated the 14th February 1855.

10. The Agent was authorised to proceed with the masonry in the Passengers' Shed on the 27th February last:

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th June 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 194.

Extract from the Minutes of Consultation, dated 25th June 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Railway Company.

(Here enter 13th June 1856.)

Under the explanation furnished in the foregoing observations, and agreeably to the recommendation of the Consulting Engineer, the Right Honorable the Governor in Council sanctions

the additional sum of Rupees (34,151) Thirty-four thousand one hundred and fifty-one, required for the construction of the Passenger's Shed at the Royapooram Station, according to the revised Plan and Estimate submitted by the Railway Agent, making the total cost on account of the above building Rupees 82,646.

Portion of the Estimate sanctioned 14th February 1856....Rs. 48,495
Additional sum now required....." 34,151
Total Rupees.....82,646

(A true Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

No. 341. MADRAS RAILWAY, 3RD JUNE 1856.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 367, dated 20th October 1855, I have the honor to forward herewith a Drawing,* together with an Estimate of the expense of constructing Goods Warehouses at the Terminal Station, Royapooram amounting to Rupees 39,750, which I request you will have the goodness to submit for the sanction of the Government.

I have, &c.,
T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 14th July 1856.

No. 150.

On a letter from the Agent and Manager of the Madras Railway Company, No. 341, dated 3rd June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

In obedience to instructions, conveyed in an Extract from Minutes of Consultation, in the Financial Railway Department, No. 199, dated the 14th August 1855, the Agent submits a Drawing and Estimate of Store Rooms, proposed to be built at the Royapooram Station. These buildings were originally commenced as portion of the Goods Warehouses, and have been now converted into store rooms at the suggestion of the Agent. The present Estimate includes the necessary alterations in the work, as far as it had been completed towards the original purpose, and amounts to Rupees 39,750. I would recommend that the Plan and Estimate receive the sanction of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 14th July 1856.

No. 238. FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 18th July 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 14th July 1856.)

The Government sanction the Plan and Estimate, submitted by the Railway Agent and recommended by the Consulting Engineer, for the construction of Store Rooms at the Royapooram Station, amounting to Rupees (39,750) Thirty-nine thousand seven hundred and fifty.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

MADRAS RAILWAY, 17TH JUNE 1856.

No. 393.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

I have the honor to submit Plans and Estimates of the undermentioned buildings required at the Terminus in Royapooram, and request you will have the goodness to obtain the sanction of Government thereto.

Plan No. 16.	Temporary Carpenters' Shed for Locomotive Department.....	Estimate Rs.	950
Do. „ 17.	Shed for boiling grease in for do. do.	„	100
Do. „ 40.	Shed for covering Engines for do. do.	„	15,560
	Palmyrah Shed for covering Engines.....	„	450
			Total Rupees..... 17,060

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 23rd June 1856.

No. 132.

On a letter from the Agent and Manager of the Madras Railway Company, No. 393, dated 18th June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent submits for sanction Plans and Estimates for the following buildings required at the Terminal Station—Royapooram.

Permanent.	
Plan No. 40.	Engineer Shed.....Rupees 15,560
Temporary.	
Plan No. 16.	Carpenter's Shed..... 950
Plan No. 17.	Shed for boiling grease..... 100
No. Plan	Shed for covering Engines..... 450

I consider that these are all required, and, having examined the plans and estimates, would recommend that they be sanctioned.

2. Of the temporary buildings I need only remark that the work on hand, in the Locomotive Department, has increased very much; while the Stock turned out and requiring shelter is daily increasing, and has already far exceeded the cover provided for it.

3. The permanent Engine Shed is very much required for the protection of the Engines, of which 21 have now been landed from England. The only building available for these at present is one of the "workshops," lately built as "temporary," near the neck of the station. The position of this is extremely inconvenient, as involving the constant passage of Engines over very sharp curves.

4. It will, moreover, accommodate but a small portion of the Engines already arrived, and, if relieved of these altogether, would be turned to much better account as a Carriage Shed.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 23rd June 1856.

[30]

FINANCIAL (RAILWAY) DEPARTMENT.

No. 206.

Extract from the Minutes of Consultation, dated 1st July 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 23rd June 1856.)

The Government sanction the Plans and Estimates, submitted by the Railway Agent and recommended by the Consulting Engineer, for a permanent Engine Shed and other temporary Sheds required at the Terminal station at Royapooram, amounting to Rupees (17,060) Seventeen thousand and sixty.

(True Extract)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY,
MADRAS, 31st OCTOBER 1856.

No. 754.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Sir,

Consulting Engineer for Railways.

1. The Traffic Manager of this Company having brought to my notice, in a letter a copy of which is annexed, the desirability of having the Booking Office and Waiting Room adjoining to the Platform at the Terminal Station, and the Directors of this Company having expressed their wishes that provision should be made for the Offices of the Engineering Department with the General Offices, I communicated with Mr. Bruce on the subject, when it appeared that, by an alteration in the buildings sanctioned by the Government to be constructed as guard room and lamp room, &c., the suggestion of the Traffic Manager could be carried out, and the desire of the Board, in respect to the whole of the Offices being brought together, attained at a small cost.

2. I have now the honor to forward a Plan and Estimate of a building to be constructed adjoining the Platform, in lieu of that sanctioned by the Government under date 27th June last, No. 201. The present estimate amounts to Rupees 11,300, being Rupees 2,429 in excess of the Estimate for the building adverted to. This increase in the Estimate is accounted for by providing, in the present Plan, a spacious Booking Office and Waiting Hall, Carriage Entrance and Ladies' Waiting Room; and the design is made more to accord with that of the building occupied as General Offices.

3. I request you will have the goodness to move the Government to sanction the construction of the building in accordance with the Plan now forwarded, and the expenditure as estimated, amounting to Rupees 11,300.

4. I also request that you will have the goodness to return the Drawing, with a view to a copy being taken of the same, should the Government sanction it.

I have &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras 6th November 1856.

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MADRAS RAILWAY, TRAFFIC MANAGER'S OFFICE.
30th SEPTEMBER 1856.

No. 334.

TO MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

Sir,

Referring to the Plans of the Madras Terminus, I beg to suggest that it would be more convenient for the working of the traffic if the Booking office were placed upon the Platform under the proposed Passenger shed, instead of using the large room arranged as Booking Office in the Terminal building.

2. We find, from the present working of the Traffic, that waiting rooms of the size of the rooms of the present building would be much larger than are likely to be required for very many years, if at all; whilst it would be more convenient to place them, in the proposed building for the Porters, alongside the platform.

3. It will be obvious to you, I think, that it would be preferable to have the Booking Offices and Waiting Rooms as near to the Train as possible; and, if the plan I suggest were acted upon, I think it would be more economical and decidedly more convenient, whilst it would place at your disposal the large rooms, originally intended for Booking Offices and Waiting Rooms, in the large Terminal building.

4. I think it right, however, to say that the Offices now used as the Traffic Manager's and his clerks will always be required for that purpose.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 229.

On a letter from the Agent and Manager of the Madras Railway Company, No. 754, dated 31st October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent submits for sanction, at the suggestion of the Traffic Manager, copy of whose letter is enclosed, a revised Plan* and Estimate, amounting to Rupees 11,300, in lieu of that (Rupees 8,871 in amount) sanctioned by Government on the 27th June 1856, for a building to be erected at the Madras Terminal Station to contain Guards', Porters', and Lamp Rooms, &c.

2. The excess (Rupees 2,429) of the present estimate is accounted for by provision being made, in the revised plan, for a spacious Booking Office and Waiting Hall, Carriage entry, and Ladies' Waiting Room, and by the design being made more to accord with that of the building occupied as General Offices.

3. As it is undoubtedly desirable to have this booking Office and waiting Room adjoining the Platform, as suggested by the Traffic Manager, and as that arrangement will admit of accommodation being afforded for the Chief Engineer and his establishment in the General Offices at the Madras Terminus, in accordance with the instructions of the Board of Directors, as per enclosure of the Honorable Court's despatch, I would recommend that the estimate now submitted may be passed, the former sanction be cancelled, and that the sanction of Government be granted for the amount of the revised estimate, viz., Rupees (11,300) Eleven thousand three hundred.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 6th November 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 401.

Extract from the Minutes of Consultation, dated 11th November, 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 6th November 1856, No 229.)

The Government sanction the revised Plan and Estimate, submitted by the Railway Agent and recommended by the Consulting Engineer, amounting to Rupees (11,300) Eleven thousand three hundred, in lieu of that sanctioned under date the 27th June last, No. 201, for Rs. 8,871, which is hereby cancelled, for a Building to be erected at the Madras Terminal Station to contain Guards', &c., Rooms, as also Booking Office and Waiting Room.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

PLATFORMS.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 116.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Sir,

Consulting Engineer.

1. With reference to your letter, No. 30, dated 28th Ultimo, I have the honor to annex copies of letters from Mr. Bruce, the Chief Railway Engineer, dated 12th instant, from Mr. Fletcher, the Traffic Manager, dated 26th September 1855, and from Mr. Wright, the Locomotive Superintendent, No. 54, dated 21st instant, giving their respective opinions on the question of height of Platforms at Terminal and Intermediate Stations, with reference to the remark made by Mr. Rendel, the Consulting Engineer of the Company, and to local arrangements.
2. Mr. Fletcher's letter not being of a recent date, I may explain that he stated, prior to his departure for Calcutta, that he saw no reason to alter the opinion he had already expressed.
3. The Chief Engineer, Mr. Bruce, is of opinion that there are no local arrangements that would necessitate any alteration from the height of platform as recommended by Mr. Rendel, viz. at the Terminal station 3 feet 4 inches, and at out, or Road-side, stations, 1 foot 6 inches.
4. The Traffic Manager, Mr. Fletcher, is of opinion that the platform at Royapooram should be 4 feet in height, and at an intermediate station the height should be 3 feet 3 inches above the level of the Rails.
5. The Locomotive Superintendent, Mr. Wright, thinks that a high platform is decidedly preferable, and that it should not be more than 1 foot below the flooring of the Carriage, viz. 3 feet 6 inches, or higher than 6 inches below the floor, or 4 feet. At out stations he thinks that platforms should not be less than 3 feet 4 inches in height, and for landing places for Goods should be only 6 inches below the flooring of the Goods' wagons.
6. I am given to understand that economy, in our future working, will be much consulted by Goods Platforms being nearly the height of the flooring of the Rolling Stock, as then we shall, to a great extent, avoid the necessity of using cranes.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 25th February 1856.

Submitted (with observations) for the orders of Government.

Madras, 27th February 1856.

T. T. PEARS,

*Consulting Engineer for Railways.*MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
CAMP MULLAPOORAM, 12TH FEBRUARY 1856.

TO MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

I have the honor acknowledge the receipt of your letter, No. 79, with the enclosure from Colonel Pears.

2. Nothing but "local arrangements" would justify our deviation from the order of the Board, founded on the opinion of our Consulting Engineer.

3. There are to be, to the best of my knowledge, no such "local arrangements", at all affecting the consideration of the question, which deviate in the slightest degree from those in every day operation at Home.

4. No Officer of the Company is interested in this question save Mr. Fletcher and myself; and I think you will find that 3 feet 4 inches will satisfy Mr. Fletcher, at the Terminal Station, so that, as far as that goes, there is no difference of opinion between us.

5. At the Road side Stations Mr. Fletcher would, I believe, also prefer high platforms, and on this point I have a very decided opinion in favour of the decision of Mr. Rendel, viz., that the platforms should be on a level with the lower step of the carriage. Anything higher is, in my opinion, dangerous at Road-side stations.

I have, &c.,

(Signed) GEORGE B. BRUCE,

*Chief Engineer.*MADRAS RAILWAY COMPANY,
TRAFFIC DEPARTMENT.

No. 1.

TO MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

In reply to your letter, No. 2, of the 24th instant, I beg to inform you that I have carefully considered the question of height of platforms at the Terminal and out, or intermediate, Stations.

2. The flooring of the carriage is 4 feet 6 inches from the level of the Rail; the present height of the platform at Royapooram is 1 foot 2 inches. I am however informed that it is intended that the height should be 1 foot 0 inches above the level of the Rail.

3. I am of opinion that such a height of platform is inconsistent with the height of the carriages, and that the greatest possible inconvenience must result to passengers if the present height of Platform should be persisted in. The first step of the carriage from the floor is 1 foot 5 inches, and it is so placed, under the side of the carriage, as to present but little surface to the foot in quitting, and you will find, upon trying the experiment, that a passenger must either turn completely round in alighting, or change his foot upon this first step before he can quit it. This, in my opinion, must lead in many instances to delay and accident.

4. I am of opinion that the platform at Royapooram (being a Terminal Station) should be 4 feet 0 inches, and that the height of out, or intermediate, Stations should be 3 feet 3 inches from the level of the Rails.

5. I have never heard an objection in England, or Ireland, to high platforms, but have found that they were preferred to low platforms at Terminal Stations, where a large Traffic required despatch. At intermediate stations the platforms are generally low, to accommodate passengers in passing over the Line of Railway—there being only one Booking office, either *up or down*, passengers must cross the Line, which is not the case at a Terminus—and steps arranged in the centre of a platform would be more or less dangerous, but to obviate this steps have been placed, in some instances, where the arrangement of the Station permitted it, at the extreme ends of the platforms.

6. The platform of the Terminus of the Great Southern and Western Railway, at Kingsbridge, Dublin, is upon a level with the floor of the carriages, and I have never known any accident to be attributed to that circumstance. The Euston Square Station platform, London, is also upon a level with the floor of the carriages, and, wherever practicable, I have always understood that high platforms had a decided preference over low ones.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

Madras, 26th September 1855.

MADRAS RAILWAY, LOCOMOTIVE DEPARTMENT,

21st FEBRUARY 1856.

No. 54.

To MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

I have the honor to acknowledge the receipt of your letter, No 12 of 18th January, calling for my opinion on the heights of Station Platforms, and forwarding various letters, as per margin,* that have passed on the subject.

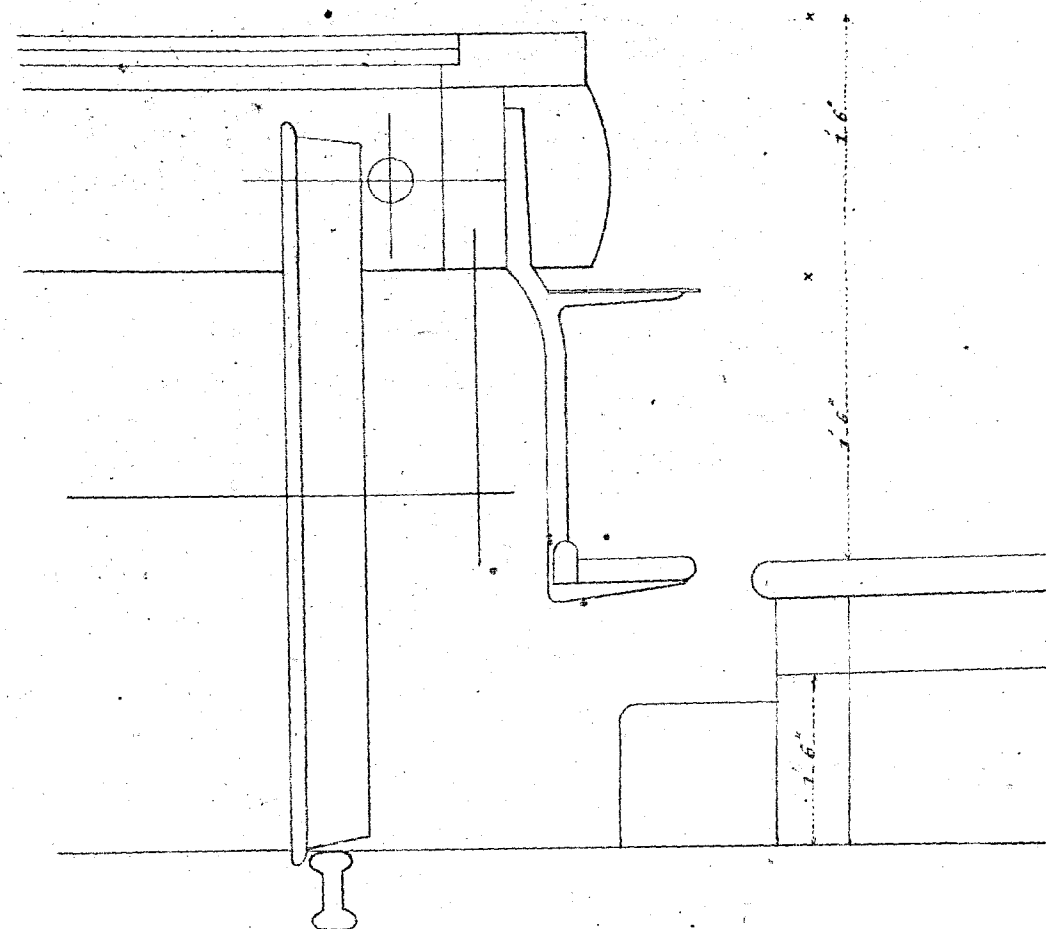
2. With regard to the Royapooram as well as all Terminal and 1st class Stations, I am of opinion that a high platform is decidedly preferable, and that the top of the Platform should not be more than one foot below the flooring of the carriages; at the same time it should not be less than six inches from the floor, so as to allow plenty of clearance for the opening of the doors, as the carriages will sometimes come down an inch or two by the deflection of the springs and the wear of the tyres, &c.

3. It is usual, in England, to have low Platforms at Roadside Stations. I have frequently seen cases of trouble and delay in getting aged or infirm travellers into or out of the carriages, and I fear from the construction of our carriages, that low Platforms will be particularly inconvenient in such cases.

4. At home, there are many Trains which only stop at first class or principal Stations, and Express Trains which only stop at the most important places, and where there are many Trains running at high speeds through Stations, it is found convenient to have low Platforms, so that the Porters, or other Employés, can readily cross the Line and more easily step on to the Platforms when a Train suddenly appears.

5. At small Stations, where the Passenger Trains do not frequently stop, and where the Traffic is small, the Platforms are, for the above mentioned reason, safer when low, say about 18 or 20 inches from the rail, which enables the passenger to step on to the upper step of the car-

riage without difficulty, whilst a Porter, or even a passenger, has no difficulty in crossing the rail, if a single step is provided to enable them to step easily from the Line on to the Platform, as shewn per sketch.



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6. I am, however, of opinion, that high Platforms are generally preferable, and I think that Platforms not less than 3 feet 4 inches from the Rail will be found far the most convenient at all Stations of any importance, with steps at the extreme ends of the Platform, and floored or paved crossings over the Line of Rails, to enable passengers to cross over from one Platform to the other.

7. With reference to Platforms, or landing places, for goods, I think the height that will be found most convenient will be about six inches below the flooring of the Goods Wagons.

I have, &c.,

(Signed) W. B. WRIGHT,

Locomotive Superintendent.

(True Copies.)

T. A. JENKINS,

Agent and Manager.

On a letter from the Agent and Manager of the Madras Railway Company, No 116, dated the 25th February 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

Extract Minutes of Consultation, Financial (Railway) Department, No. 294, dated 22nd November 1855.

1. Under instructions from Government, and in accordance with the recommendation of the Agent, it was lately determined that the Platforms, at the several stations on the Railway, should be as the Terminal Station—above the level of the rail—at the minor Stations.

2. It appears, however, that the Railway Board in England have considered it necessary to re-open the question, and it has been referred to their Consulting Engineer. Mr. Rendel does not appear disposed to lay down any precise rule, but very justly observes that in this, as in all other Engineering matters, much must depend on local arrangements.

3. He, however, states that, according to the best experience gained in England, the height for the Platforms at principal Stations is about 1 foot below the level of the floor of the carriage. This coincides with the opinions of the Agent and Traffic Manager of the Madras Railway nearly, and would place the level of those Platforms 3' 6" above the rails.

4. At smaller road Stations, Mr. Rendel observes that "the Platforms should be lower, say "about the height of the bottom steps, which give greater facilities for Porters and others to "cross the line."

5. Mr. Fletcher, the Traffic Manager here, proposes a height of 4 feet above the rails for the Platform at Terminal Stations, and 3 feet 3 inches at minor Stations.

6. It is to be observed that, in speaking of giving facilities to Porters and others to cross the line, Mr. Rendel would appear to allude to the requirements on a double line, having the Station offices on only one side; whereon, as the "up" or the "down" trains have to be attended to, these people must cross and re-cross the line from time to time. It is not so here, or likely to be for a long time. Trains will always run alongside the same Platform, whichever way they may be going; and the only reason given in favor of low Platforms does not, as far as I can see, apply; neither can I understand how there can be danger in high Platforms, or, if there be, how it can exist at minor—not at Terminal Stations.

Extract Minutes Consultation, Financial Railway Department, No 294, dated 22nd November 1855.

7. Under these circumstances, and with every respect for Mr. Rendel's opinion, which is given with evident desire to leave much to local opinions and circumstances, I think the order of Government on this subject, as noted in the margin, should stand.

No 62, dated 25th November, 1855.

8. The letter from the Managing Director, copy of which was transmitted with Extract from Minutes of Consultation, No. 20, of the 23rd ultimo, has rendered it necessary to submit the question once more to Government.

9. I may add that I am satisfied, from personal observation, that much inconvenience on the part of passengers would be experienced, and much expense on the part of the Company in regard to "goods," by keeping the platforms at minor Stations as low as proposed by Mr. Rendel, the carriages, wagons, &c., here, being considerably higher than on the narrow gauge in England.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th February 1856.

Extract from the Minutes of Consultation, dated 24 March 1856.

Read the following observations of the Consulting Engineer, on letters from the Railway Agent. (Here enter 27th February 1856, No. 12.)

In Extract Minutes of Consultation, 22nd November last, No. 294, Government approved of the alteration proposed in the position of the Passenger's shed at the Madras Terminal Station, and authorized the Railway Agent to proceed with so much of the work as consisted of placing a verandah on the North face of the Station Building, pending the submission by him of more detailed drawings of the projected alterations.

2. Colonel Pears now reports that, under the above order and in accordance with the recommendation of the Agent, it was lately determined that the Platform at the Terminal Station should be four feet, and at the minor Stations three feet three inches above the level of the rail.

3. The question of height has, however, been since referred by the Railway Board in England to their Consulting Engineer, and while Mr. Rendel is disposed to admit that, in matters of this kind, much must depend on local arrangements, he states that, according to the experience gained in England, the Platforms at the principal Stations should be about one foot below the level of the floor of the carriage, that is 3 feet 6 inches above the rails, and that at the smaller Stations they should be somewhat lower, or about the height of the bottom steps, which, he adds, would "give greater facilities for Porters and others to cross the line."

4. Colonel Pears points out that Mr. Rendel's opinion, as to the height of the principal Station Platforms, nearly agrees with that of the Agent and Traffic Manager of the Madras Railway, and that the reason given in favor of low Platforms, at the minor Stations, does not apply in this country. He therefore recommends that the orders of Government, in Extract Minutes of Consultation, 22nd November 1855, be adhered to. He adds that, from personal observation, he is satisfied that much inconvenience on the part of passengers and much expense to the Company would result by the adoption of the height proposed by Mr. Rendel for minor Stations.

5. The Right Honorable the Governor in Council agrees with Colonel Pears that the height of the Platforms should be as proposed by him, viz., 4 feet at the Terminal, and 3 feet 3 inches at the minor Stations above the Rails, and directs that these dimensions be accordingly observed.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 155.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

With reference to your letter, No. 116, of the 25th ultimo, I have the honor to forward for your information copy of an order of Government, as per margin, and to request you will cause the rule therein laid down to be strictly observed throughout your line of Railway, viz. that at Terminal Stations the platform be made (4) four feet above the rail, at minor Stations (3' 3") three feet three inches.

2. I request you will inform me whether you propose to class under Terminal Stations merely those at the extreme ends of your line, as Madras and Beypoor, or whether you would place first-class Stations at Vellore, Salem, Coimbatore, &c., on the same category, as far as the height of platform is concerned.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th March 1856.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 190.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 155, dated 21st ultimo, and order of Government, No. 25, dated 20th idem, I have the honor to state that it is considered a matter of not much consequence, whether the Platforms at Stations not strictly Terminal, be 4 feet in height or only 3 feet 3 inches; the Traffic Manager, however, is of opinion that 3 feet 3 inches will be a more convenient height for 1st class junction Stations.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 4th April 1856.

HOTELS AT RAILWAY STATIONS.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 23.

Extract from the Minutes of Consultation, dated 26th January 1856.

Read the following observations of the Consulting Engineer, on a letter from the Agent, dated 18th December 1855.

Referring to the remarks of the Consulting Engineer, as per margin, in his observations under date the 18th ultimo, and to para 3, Extract Minutes of Consultation, 10th instant, the Government would wish for Colonel Pears' opinion whether it would not be desirable that Government should establish travelling Bungalows at such Stations as those above adverted to. If the locality selected for them were good, they might be converted into Hotels, as soon as parties should appear inclined to set on foot such establishments as a private speculation.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 10.

TO THE CHIEF SECRETARY TO GOVERNMENT,

Fort Saint George.

SIR,

In reply to an order of Government, in the Financial (Railway) Department, No. 23 of the 26th instant, I have the honor to state that, in my opinion, buildings at Railway Stations, when required for the accommodation of travellers, should, if not already provided by individual enterprise, be built by the Railway Company, and every encouragement held out to enterprising men to rent them and establish Hotels. Such buildings should not, in my opinion, be within the Station ground, but at some spot near thereto.

2. It appears to me that there must, some day, and ought to be an end to the Government providing accommodation for travellers, and in these cases, where the Railway Company is so immediately interested in doing so, the matter may with great propriety be left in their hands. It is a common practice in England for the Companies to construct buildings of this nature, and either let them to men willing to establish Hotels therein, or place Agents of their own in them for a similar purpose.

3. Of the four Stations mentioned in my report of the 18th December, No. 202, it is at Trivellum and Mulliapooram that buildings of this nature would be most required, the former being six or seven miles from the nearest Station, Arcot, and there being every probability of travellers arriving from the Chittoor and Cuddapah direction having to wait many hours for the train.

4. Mulliapooram also is about seventeen miles from Yercaud on the Shervaroys. The Vellore Station is about three miles only from that town; and at the fourth Station named, being at the junction of the Saleni and the Bangalore Branch, trains would probably be so arranged that passengers would not have to wait long.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 30th January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 55.

Extract from the Minutes of Consultation, dated 21st February, 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 30th January 1856.)

The Right Honorable the Governor in Council resolves to enquire, through the Consulting Engineer, of the Railway Agent whether he has received any instructions from the Board of Directors relative to the provision by the Company of Hotel accommodation at the Chief Railway Stations, or whether he purposes making any propositions to them on the subject, and if so what it is his intention to suggest.

3. Application will also be made to the Governments of Bengal and Bombay for information whether any thing and, if so, what has been done, in this respect, on the Bombay or Bengal Line, either by the Railway Company or by the Government.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 88.

Extract from the Minutes of Consultation, dated 28th March 1856.

Read the following letters.

No. 911.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

TO T. PYCROFT, Esq.,

Chief Secretary to the Government of Fort St. George, dated the 28th February 1856.

Public Works Department, } SIR,
Railway.

In reply to your letter, No. 56, dated the 21st instant, I have the honor to state, that the Government of India have taken no measures towards providing Hotel accommodation for pas-

sengers at the principal Stations on the Bengal line of Railway. The East Indian Railway Company has built Hotel Bungalows at Raneegunge, costing Rupees 12,500, and expended Rupees 2,500 for furniture for the same, and now contemplates the construction of a Caravanserai.

2. I am further to state that Hotels have been established, by private enterprise, near the Howrah and Burdwan Stations.

I have, &c.,

(Signed) W. E. BAKER, LIEUTENANT COLONEL,
Secretary to the Government of India.

Fort William, the 28th February 1856.

No. 153 of 1856.

PUBLIC WORKS DEPARTMENT,
(RAILWAY BRANCH)

To T. PYCROFT, Esq.,

Sir,
Chief Secretary to the Government of Fort St. George.

I am directed by the Right Honorable the Governor in Council to acknowledge the receipt of your letter, No. 56, dated the 21st ultimo, and to state, for the information of the Government of Madras, that no Hotel accommodation has, as yet, been provided, either by this Government or by the Railway Company, at any of the Railway Stations on the lines in this Presidency.

2nd. A small bungalow was built at Tanna by the Railway Company, and has been let as a refreshment room; but it is too small to be considered an Hotel.

I have, &c.,

(Signed) W. HART,
Secretary to Government.

Bombay Castle, 8th March 1856.

Ordered to be communicated to the Consulting Engineer for Railways, with reference to Extract Minutes of Consultation, dated 21st February 1856, No. 55.

2. The Government have not yet received from the Railway Agent the information called for in the first para. of that Extract.

(True Extract and Copies.)

(Signed) T. PYCROFT,
Chief Secretary.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 171.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Sir,
Consulting Engineer.

With reference to Extract from Minutes of Consultation by Government, No 55, dated the 21st of February 1856, requiring to know whether I have received any communication from the Directors of this Company relative to the provision of Hotel accommodation at the Chief Railway Stations, I have the honor to state that I have not, as yet, received any instructions from the Board of Directors of this Company; I have, however, solicited their orders, stating my opinion that it will be desirable that Hotel accommodation be provided at Trivellum, Mulliapoorum, and the nearest point to the Neilgherry Hills; also at the nearest point (where the Line may branch off) to Bangalore; but whether the expense should be incurred by this Company, I am not prepared to state.

2. I take leave to submit that I should not feel justified in recommending a large outlay on this account, until actual experience has shown the extent of our requirements.

3. I beg to annex a copy of a letter from our Traffic Manager, and to acquaint you that steps have been taken for providing Hotel accommodation at Arcot as an experiment.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Madras, 22nd March 1856.

Submitted for the information of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 28th March 1856.

MADRAS RAILWAY, TRAFFIC DEPARTMENT,
17TH MARCH 1856.

No. 72.

To MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

1. With reference to your letter No. 18, enclosing Extract from Minutes of Consultation, No. 55 of the 2nd February, calling upon me to express an opinion as to the desirability of this Company providing Hotel accommodation for Passengers, I have the honor to say that until we have had actual experience of the requirements at the different parts of the line, I do not feel justified in offering any opinion upon the matter.

2. I would beg to observe that it appears to me that a principle of great importance is involved in the question as to whether Hotel accommodation should be provided by a Railway Company or not; as if once begun the Public might assume that we should provide similar accommodation at every Station.

3. Time can only develop fully the want, and then probably the Railway Company could find enterprising persons who would take the matter up and build an Hotel when required, which would release the Railway Company from the difficulty of having set a precedent by having become, even in one instance, Hotel keepers.

4. There are doubtless several Railway Hotels at Home, but I beg to observe that there is no instance of a Railway Company building an Hotel until actual experience has developed the requirement; which is precisely the course I would recommend in the present instance.

5. I think a Railway Company can scarcely afford too much accommodation to the travelling Public, but I think great caution should be exercised in expending the Company's money in any way except in the construction of the Railway.

6. I think there would be no difficulty in our making arrangements at Arcot, where a Bungalow may be rented for a small sum, by placing a person as an Hotel keeper as an experiment; if successful, the question of constructing an Hotel near to the Station could then be considered.

I am, &c.,

(Signed) H. A. FLETCHER,
Traffic Manager.

(True copy.)

(Signed) T. A. JENKINS,
Agent and Manager.

[42]

MADRAS RAILWAY, 15TH AUGUST 1856.

No. 536.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,

Consulting Engineer for Railways.

In my letter, No. 171, dated 22nd March 1856, I did myself the honor to inform you that I had applied to the Board of Directors of this Company for instructions relative to the provision by the Railway Company of Hotel accommodation at certain points along the line.

2. The Board in their letter No. 84, dated the 30th May, para. 9, observe, "that while in their opinion it is not desirable for this Company to engage, if they can avoid it, in the building of Hotels for the use of the Passengers of the Railway, they cannot but feel that, in the present social condition of India, the provision of the necessary accommodation in this respect can hardly be left altogether to private enterprise, particularly in situations remote from the Presidency or large Towns. They have therefore resolved to authorize the construction, under the sanction of the Government, of suitable buildings for the accommodation of Passengers at such points of the line as may be found expedient. These buildings will be leased to responsible parties under such regulations as will secure to the Company a proper control over their management in all respects. The ground for their erection will, it is hoped, be provided by the Government, whose servants will be the parties chiefly to benefit by the accommodation."

3. I now have the honor to state that it would appear to be most desirable that Hotel accommodation should be provided in the vicinity of the Trivellum Station, for the accommodation of Passengers by Railway, proceeding to and from Chittoor, Palmanair, Bangalore, &c. The Chief Railway Engineer informs me that the cost of constructing a temporary building for the purpose would be about Rupees 1,000. I request that you will have the goodness to move the Government to sanction this outlay and that they may be pleased to grant the land necessary for the same, also for the compound and out-buildings. A Plan and Estimate will be prepared and transmitted with the least possible delay.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 21st November 1856.

T. T. PEARS,

Consulting Engineer for Railways.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 424.

To MAJOR T. A. JENKINS,

Agent and Manager Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter No. 536 of the 15th Instant, regarding the proposed Hotel accommodation at Trivellum.

2. I was, at one time, decidedly of opinion, that Trivellum would be the Station at which, if anywhere, it would be most desirable to establish something of the kind: but it has lately occurred to me, that an Hotel at the Vellore Station would be more generally useful, and even more convenient for those travellers from Chittoor, &c., on whose behalf you now propose one at Trivellum.

3. I am not quite sure as to the distance, but I think Trivellum will be about 22 miles from Chittoor; Vellore about 17 or 18. This being the case, and a good road on both lines, it appears probable that travellers from Chittoor, bound Eastward, would prefer dropping on to the Railroad at the nearest point, Vellore, saving thus four miles transit by common road, at a cost of eight miles additional journey by rail. Vellore is, at the same time, obviously the station to which travellers for Chittoor, bound Westward, would take.

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4. If you will be good enough to consider these circumstances, and favor me with your opinion again, the Plan and Estimate which you proposed to submit shall be laid before Government without delay.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Palghaut, 27th August 1856.

BRIDGE ACROSS THE RAILWAY AT ROYAPOORAM.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 111.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have observed that the bridge across the rails at Royapooram is being constructed of stone brought down by the waggons used in taking permanent way materials up to district 3. To this proceeding, should it involve no excess above the sanctioned estimate, there can be no objection. On the contrary it is desirable, considering its position, to make the work as handsome as possible, consistently with a judicious economy.

Mr. Wilson, the Resident Engineer, has informed me that the work is likely to exceed the estimate, as far as the masonry is concerned, considerably, though not perhaps greatly upon the whole amount.

The Government require, as you are aware, that all anticipated excess over an estimate should be reported at once, with explanation and revised or supplemental estimate submitted for sanction. I have the honor to request that the rule may not be lost sight of on the present occasion.

I have, &c.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 10th March 1856.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

No. 298.

MADRAS RAILWAY, 19TH MAY 1856.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter, No. 111, dated the 10th March, I have the honor to transmit herewith a revised Estimate for the construction of a Bridge over the Rails at the neck of the Station at Royapooram, amounting to Rupees 37,640.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 24th June 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 242.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

* No. 298, dated the 19th
May 1856.
† Rs. 37,640-0-0.

I have the honor to remark that your letter* forwarding a Revised Estimate† for the Bridge over the Rails at the neck of the station affords no explanation as to the cause of the excess of Rs. 5,640 over the Estimate (Rs. 32,000) sanctioned for this work under date the 27th November last. I request you will be good enough to furnish this explanation speedily for transmission to Government.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY, 4TH JUNE 1856.

No. 356.

TO LIEUTENANT COLONEL T. T. PEARS, C. V.,

Consulting Engineer for Railways.

SIR,

With reference to your letter No. 242 dated 28th May, I have the honor to acquaint you that the Chief Engineer states that the cause of the excess of Rupees 5,640 in the revised Estimate over the original Rupees 32,000, in the construction of the bridge over the rails at the neck of the Station, was its being built of stone in place of brick.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 24th June 1856.

No. 134.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 298 and 356, dated respectively the 19th May and 4th June, 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

On the 27th November 1855, by an order in the Financial (Railway) Department (No. 300) Government were pleased to sanction the construction of a bridge across the Railway at the neck of the Terminal Station in Royapooram, at an estimated cost of Rupees 32,000.

2. The Agent now submits for sanction a Revised Estimate, amounting to Rupees 37,640.

3. The first estimate provided, it seems, for brick and chunam. The work was however commenced in stone brought down the rail by wagons returning empty after the conveyance of Railway materials.

4. I believe that the plan of using stone instead of brick was adopted in the first instance by the Chief Engineer, when under the impression that, under existing circumstances, it would cost no more than brick.

5. Hearing, however, from the Engineer in charge of the work that such was not likely to be the actual result, I addressed a letter to the Agent, copy of which is No. 111, dated 10th March, 1856, now submitted, requesting explanation; and the consequence has been the preparation of this revised estimate.

6. The substitution of stone for brick should not have been adopted without express sanction. The bridge will be, according to this estimate, a very expensive work. I cannot doubt, however, but with ordinary care and supervision the expense, both in masonry and earthwork, will be brought considerably below this amount.

7. The stone work is estimated at 6 Rupees the yard. The stone work on the 3rd district has been executed for something about Rupees 4; considering the circumstances under which the stone is brought to Madras, the cost of carriage could not have made this great difference. The mode in which the stone work of this bridge has thus far been executed would, however, in a measure, account for the difference. Of this the Chief Engineer should have been aware; and, if so, knowing that the estimate would be exceeded, he should not have proceeded without further sanction.

8. I would, under ordinary circumstances, recommend that the Agent should be instructed to complete the arches in brick. The work, however, is so far advanced that the saving effected by such a measure would be small, while the effect upon the appearance of the bridge would be very prejudicial.

9. In authorizing the Agent to proceed with the work, I would suggest that he be desired to take care, in future, that not only sanctioned estimates but also sanctioned plans, in all essential particulars, are adhered to, and that it be considered a rule that, whenever the word "Masonry" is used in an Estimate, it be understood as Brick and Chunam, unless otherwise specified.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 24th June, 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 213.

Extract from the Minutes of Consultation, dated 2nd July, 1856.

Read the following observations by the Consulting Engineer, on letters from the Agent and Manager of the Railway Company.

(Here enter 24th June 1856.)

The Right Honorable the Governor in Council sanctions, as recommended by the Consulting Engineer, the revised estimate, submitted by the Railway Agent, for the Bridge under construction across the Railway at the neck of the Madras Terminal station, amounting to Rupees (37,640) Thirty-seven thousand six hundred and forty, being Rupees * Rupees 32,000. 5,640 in excess of* that sanctioned in Extract Minutes of Consultation of the 27th November 1855, No. 300.

2. This excess is accounted for by the substitution of stone for brick. The Government agree with Colonel Pears that the plan of using stone instead of brick, as provided for in the original Estimate, should not have been adopted without express sanction. The Railway Agent should be requested to take care, in future, that not only sanctioned Estimates but also sanctioned Plans are, in all essential particulars, adhered to, and that it be considered a rule that, whenever the word "Masonry" is used in an Estimate, it be understood as "Brick and Chunam," unless otherwise specified.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

GORIATTUM BRIDGE.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 155.

TO THE AGENT OF THE MADRAS RAILWAY COMPANY.

SIR,

With reference to your letter, No. 232, of the 15th instant, and the plan which accompanied it, I have the honor to request that I may be favored with the result of the borings made, with a view to ascertain the character of the bed of the Goriattum river, and also with an exact section of the river, embracing 100 yards on either side, and showing the surface water line in ordinary floods, as well as in very high freshes.

I have, &c.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 19th June 1855.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 209.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

With reference to your letter, No. 303, of the 11th instant, and that from Mr. Bruce to your address, No. 185, of the 11th instant, I have the honor to request that a fair copy of the plan of bridge proposed for the Goriattum River may be forwarded with estimate for submission to Government, and that the exact nature and extent of foundation suited to the bed, as now reported, may be shown thereon.

I have the honor to request, also, that the water-way given to the entire river here, apparently divided into two branches, may be not less than 700 feet clear; whether they should be given by the enlargement of the one bridge now proposed by your Chief Engineer, or by the addition of a smaller one, across the minor branch, is a question to be determined with reference to local circumstances, with which Mr. Bruce is better acquainted than I am.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 14th July 1855.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 350.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,

Consulting Engineer for Railways.

In answer to your letter, No. 209, dated the 14th instant, I have the honor to forward an estimate of the cost of constructing a bridge over the River Goriattum, as per Plan, No. 30, transmitted to you on the 15th June last, and request that sanction may be accorded for the work being commenced.

2. Mr. Bruce states that he has not yet gone into the question of the best way of meeting your wishes for affording an increase of water way, but that he will do so shortly.

3. In the meantime, provided the work be commenced with, nothing will be done which will in any way interfere with the extension of the bridge as you propose.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY.

Quantities and Estimate of the Bridge over the River Goriattum as per Plan No. 30.

Quantities and Estimate of the Bridge over the River Ghatatam									
Excavation of foundation.....Cubic Yards.	5,751	0	4	0	1,437	12	0		
Masonry.....	7,021	4	0	0	28,084	0	0		
Covering of arches.....Square feet.	25,012	5	per	cent	1,250	9	7		
Piping.....No.		20	10	0	0	200	0	0	
Scaffolding and Centering.....					4,000	0	0		
Contingencies.....					3,497	0	0		
								Total Companies Rs.	38,470 0 0
Company's Rupees Thirty-eight thousand four hundred and seventy.									

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 23rd July 1855.

(Signed) GEORGE D. BRUCE,

Chief Engineer.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 266.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

I learn from Mr. Bruce that he experiences difficulty in getting plans prepared from the want of qualified Draughtsmen.

With a view, therefore, of expediting business, I send herewith the trace plan of the Goriattum bridge, received with your letter of the 15th June 1855, No. 232, and if it can be corrected and completed, in such a manner as to render it fit for submission to Government, some time will be saved.

It requires to have the true line of clay drawn on it and the highest water line—the depth of foundation being shown accurately on it to Scale. The drawing should be then mounted on cloth.

The section, showing the line of bank for 100 yards on each side of the bridge, called for in my letter of the 19th June 1855, No. 155, had better be given on a separate sheet.

I request you will ascertain and favor me with your opinion as to the measures required to enable you to furnish the Government promptly, and on all occasions, with such plans as may be called for, in connection with works projected on your line of Railway. Hitherto, there has appeared considerable difficulty in getting these forwarded within reasonable time.

I have, &c.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 4th August 1855.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 268.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

With reference to your letter, No. 350, of the 26th ultimo, and mine, No. 245, of the 28th July 1855, I have the honor to request I may be favored with a more explicit statement of the mode in which your Chief Engineer proposes to provide water way for the Goriattum river, before I submit the Bridge Plan and Estimate for the sanction of Government.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 6th August 1855.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 396.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letters, Nos. 266 and 268, of the 4th and 6th instant, I have the honor to return the tracing of the Goriattum Bridge mounted and amended, with the line of clay, depth of foundation, and water line marked thereon.

2. Mr. Bruce, in a letter a copy of which is annexed, proposes to defer giving an opinion in respect to increased water way, until he has inspected the ground, which he will do in the course of a few days. The section, showing the banks on each side of the bridge, will be transmitted so soon as received. In the meantime, may I beg that you will have the goodness to obtain the sanction of Government for the execution of the work.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 18th August 1855.

MADRAS RAILWAY ENGINEER'S OFFICE,
MADRAS, 15TH AUGUST 1855.

No. 258.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

The tracing of the Goriattum Bridge, previously forwarded to the Consulting Engineer, and returned to this Office to be mounted and amended, accompanies this.

2. With regard to the water-way, I defer coming to any decision on the subject of increased space, as suggested by Colonel Pears, until I inspect the ground, which I hope to do in a few days.

3. In the meantime, I beg that the Plan and Estimate may be submitted to Government, and early sanction given for the execution of the work.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

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MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 494.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter, noted in the margin, I have the honor to transmit herewith a section, showing the banks of the river Goriattum, as called for by you.

2. I annex a copy of a letter from Mr. Bruce, dated the 11th September, in which he states that with the view of carrying out your wishes, and giving increased water way, he proposes to add four arches to the west end of the Bridge, which will give, in all, a clear waterway of 720 feet.

3. I beg to transmit a revised estimate for the Bridge of 24 arches, in substitution of that previously submitted, amounting to Rupees 46,572, and request that you will have the goodness to recommend the same for the sanction of Government.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 8th October 1855.

Submitted (with observations) for the orders of Government.

(Signed) T. T. PEARS,

Madras, 11th October 1855.

Consulting Engineer for Railways.

MADRAS RAILWAY ENGINEER'S OFFICE,
CAMP COIMBATORE, 11TH SEPTEMBER 1855.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

In order to carry out the views of Colonel Pears, and give increased water way at the Goriattum River, I propose to add four arches at the west end of the Bridge, which will give, in all, a clear water way on the square of 720 feet.

2. I further propose to make a separate provision for the channel, a few chains from the west end of the Bridge; the plan of this will be submitted along with the plans and estimates of the smaller works.

3. I now submit a revised estimate for the Bridge of 24 arches, instead of 20 previously submitted.

4. The amount for which sanction is requested is Rupees 46,572.

I have, &c.,

(Signed) GEORGE B. BRUCE.

Chief Engineer.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

No. 160.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 494 and 495, dated 8th October 1855.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent submits for sanction an estimate, amounting to Rupees 46,572, for a Bridge by which it is proposed to carry the Railway across the River Goriattum, at a point about 125 miles from Madras.

2. The work consists of 24 arches of 30 feet span, with piers 5 feet in thickness.

3. The bed of the river is reported to consist of sand to a depth of 12 feet, and "below that, strong clay." The accompanying drawing, first submitted, shows the general character of the Bridge, but provides only 20 arches. The estimate is moderate, and the data upon which it is framed reasonable; amounting to Rupees 46,572, it provides a Bridge of 825 feet in length between the abutments, and 30 feet 6 inches in width, including parapets, at a cost of Rupees 56 the foot forward. The piers are about 13 feet high from the footings to the spring.

4. A sketch, showing the height of adjacent bank and character of the gradient, accompanies the plan. There are discrepancies between the two, but I conclude the larger plan is correct, and would recommend the sanction of both Plan and Estimate (the former being extended to 24 arches) with the following suggestions and modifications.

5. The depth to which the piers are sunk into the clay, according to the plan, is insufficient; they should be imbedded in no case less than 3 feet, and the Chief Engineer should be prepared to provide a retaining wall, as in the case of the Cortilliaur Bridge, in the event of the character of the stream (which will probably show itself soon) and that of the clay rendering it advisable. The line of "formation level" is drawn in contact with the masonry at the extrados of the several arches; allowing the line to be fully ballasted up, this leaves only one foot between the bottom of the sleeper and the masonry. There would never be so much in practice.

6. It does not appear necessary to bring the crown of the arch and Permanent Way into such close proximity. The line of highest flood is shown to be 3 feet below the spring of the arches. Leaving the formation level as proposed, the piers should be reduced 6 inches in height, and a clear depth of at least 2 feet 6 inches left between the extrados of the arch, at the crown, and the level of rail. It appears to me that, in many of the works of masonry already completed, the masonry is thus carried up too near the rails, and is exposed unnecessarily to the injurious effects of vibration under the passing Engines.

7. The correspondence which has passed on the subject is annexed, and will explain the cause of delay in submitting these Plans and Estimates.

8. It will be necessary that the Agent should forward a fair plan of the Bridge, as now proposed, showing the usual details.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 11th October 1855.

No. 264.

FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 16th October 1855.
Read the following observations of the Consulting Engineer on a letter from the Railway Agent.

(Here enter 11th October 1855, No. 160.)

The Governor in Council is pleased to sanction the construction of a Bridge of 24 arches across the Goriattum River, at an estimated cost of Rupees (46,572) Forty-six thousand five hundred and seventy-two, the modifications and suggestions of Colonel Pears, in paras 5 and 6 of his observations, being duly attended to by the Railway Engineer.

2. Government observe with pleasure that their sanction has not been anticipated in this instance, and that the delay, in sending the required particulars regarding the plans, has been explained satisfactorily. They trust that, by the exertions of the Chief Engineer of the Railway, and with the aid of the increased Establishment of Draughtsmen, recently sanctioned, there will be no further difficulty in attending promptly to the necessary requisitions of the Consulting Engineer.

(True Extract.)

(Signed) J. D. BOURDILLON,

Secretary to Government.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 368.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

I have the honor to forward, for your information, copy of an order of Government, sanctioning the estimate, amounting to Rupees 46,572, submitted with your letter, No. 494, of the 8th October 1855, for a Bridge of 24 arches across the Goriattum river.

You are requested to submit a fair plan, showing details, &c., with as little delay, as possible.

Copy of an extract from my report to Government is also forwarded, and you are requested to communicate the same to your Chief Engineer with the order of Government thereon.

I have to request, also, that the nature and extent of foundation, in the several portions of the work, may be carefully observed, and recorded, in case reports thereon should be required and called for.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 20th October 1855.

PALAR BRIDGE.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 632.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

I have the honor to forward, for submission to Government, a Drawing* of a Bridge proposed to be built over the Palar River, in District V. This Plan was originally received in this Office in the month of August last, was returned for the purpose of having certain requisites inserted therein, and has only just been received.

2. I annex a copy of a letter,* from Mr. Bruce, in which he states that the borings, taken in the bed of the Palar, exhibit sand and gravel down to a depth of 20 feet, and that the foundation, consequently will, it is proposed, be built on wells.

* No. 36.
* No. 532, dated 27th November 1855.

3. I beg to recommend that the Government may be pleased to sanction the outlay for the same as, shown in the Estimate, viz., Rupees 67,391.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 17th December 1855.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Madras, 28th January 1856.

Consulting Engineer for Railways.

MADRAS RAILWAY ENGINEER'S OFFICE,
MADRAS, 27TH NOVEMBER 1855.

No. 332.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I beg to return the Drawing of the Bridge proposed to be built over the Palar River, on District V, with the information required. Accompanying it, is also part of the Section of the line of Railway, including about half a mile on each side of the River.

2. The borings, which we have taken in the Palar, show sand or gravel down to a depth of 20 feet, so that we shall be obliged to adopt wells for the foundation.

3. The water channel, on the west side of the river, will be diverted through the arches of the main Bridge, and no special provision required.

4. The Estimate was forwarded on a former occasion.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 22.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

1. With reference to my letter, No. 632, dated 17th December last, transmitting an Estimate for the construction of the Palar Bridge, I have now the honor to forward an amended Estimate for the same, transmitted by the Chief Railway Engineer in substitution of the former, as he states that he found the brickwork of the wells had been added to the other masonry, and, to a certain extent, had been twice charged for.

2. I beg to recommend that the Government may be pleased to sanction the sum of Rupees 63,880, on account of the construction of the Bridge in question.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 11th January 1856.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Madras, 28th January 1856.

Consulting Engineer for Railways.

No. 5.

On letters from the Agent and Manager of the Madras Railway Company, No. 632, dated the 17th December 1855, and No. 22, dated the 11th January, 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent submits with these letters a Plan and Estimate, amounting to Rupees 63,880, for a bridge to carry the Railway across the Palar river near the Town of Amboor.

2. The proposed work will consist of 24 arches of 30 feet span, giving an entire length of 883 feet between the abutments.

3. The cost, according to the Estimate, would therefore amount to about 73 Rupees the foot forward.

4. Considering the breadth of the Bridge, 29 feet in all, and the expensive character of the foundation, this is not large.

5. The data upon which the Estimate is framed are reasonable, and I would recommend that it be sanctioned.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 37.

Extract from the Minutes of Consultation, dated 1th February 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 28th January 1856.)

The Right Honorable the Governor in Council sanctions the Plan and Estimate, recommended by the Consulting Engineer, for the Bridge proposed to be built over the Palar, near the town of Amboor, in District V of the Madras Railway, amounting to Rupees (63,880) sixty-three thousand eight hundred and eighty.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

ROADS LEADING TO RAILWAY STATIONS.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 182.

To THE CHIEF SECRETARY TO GOVERNMENT,

Fort Saint George.

SIR,

I have been informed by the Civil Engineer of North Arcot that Estimates have been prepared for certain roads, proposed in connection with the Railroad, within the Districts of Chingleput and North Arcot. These Estimates will, I believe, in ordinary course of business, be placed in the Budget, and may, consequently, not be passed for execution for several months.

It is hoped that the Railway will be prepared to open public traffic very early next year; and it is obviously of great importance to the interests of the public that the Railway Company and of Government, that the principal roads, intended to facilitate access to the rail, should be completed as soon as possible.

Of the roads projected, as shown in the annexed list, the most important in connection with the Railway are the following.

From Poonamallee	to Avady.
Conjeveram	Chinnamapet.
Palar anicut	Ammoor.
Raneepett	Ammoor.
Perancanjee	Banaveram.
Tritany	Companypettah.

The annexed list includes a road from Tritany to Chinnamapet. I think, however, it will be found better to carry the communication from Naggery by Tritany to the Railroad at Companypettah. I trust the Government may consider the immediate execution of these works of sufficient importance to justify their being undertaken in anticipation of the sanction of the Budget.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 22nd November 1855.

List of proposed Roads in connection with the Railway, communicated by Captain Johnston.

1. From Poonamallee to Coratoor.
2. " Palaveram " do.
3. " Poonamallee " do.
4. " Wallajahbad " Booboor.
5. " Conjeveram " Chinnamapet.
6. " Trunk road No. 1, near Balchetty Choultry " Companypet.
7. " Do. near Cauverypaw " Banaveram.
8. " Palar anicut, via Wallajahbad " Ammoor.
9. " Raneepett " do.
10. " Nelcontriapettah " do.
11. " Perancanjee " Banaveram.
12. " Tritany " Chinnamapet.
13. " Poiney " Trivallum.
14. " Streepermatoor " Dacumbode.

T. T. PEARS,

Consulting Engineer for Railways.

No. 296.

FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 23rd November 1855.
Read the following letter from the Consulting Engineer for Railways.
(Here enter 22nd November 1855.)

Referred for consideration in the Department Public Works.

(True Extract.)

(Signed) T. PYCROFT.

Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 329.

Extract from the Minutes of Consultation, dated 24th December 1855.

Read the following letter.

No. 2686.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

To J. D. BOURDILLON, Esq.,

Secretary to the Government of Fort Saint George, dated the 23rd November 1855.

Public Works Department, } SIR,
Railway.

I am directed to transmit, for the information of the Right Honorable the Governor in Council of Fort Saint George, an Extract (paragraph 16) from a Despatch from the Honorable the Court of Directors, No. 26, dated 26th September last, concurring with the Government of India that the cost of constructing and maintaining roads leading exclusively to Railway stations should be borne by the Railway Company.

I have, &c.,

(Signed) W. E. BAKER, LIEUTENANT COLONEL,

Secretary to the Government of India.

Fort William, the 23rd November 1855.

Extract from a Despatch from the Honorable the Court of Directors to the Government of India, in the Financial Railway Department, No 26, dated 26th September 1855.

Public Works Department, } No. 2, dated 15th
March 1855.
27 and 28. State that, in consequence of a reference from the Railway Agent, Government resolved to adhere to their former decision that the construction and repair of roads leading exclusively to Railway stations should be borne by the Railway Company, but that Government Officers might undertake the repair of the same, provided the Railway Company bore the necessary expenses.

16. We concur with you, in opinion that " the construction of roads leading exclusively to Railway stations is strictly a Railway expense, and that the cost of their construction and maintenance should therefore be borne by the Railway Company."

(True Extract.)

(Signed) W. E. BAKER, LIEUTENANT COLONEL,

Secretary to the Government of India.

Ordered to be communicated, through the Consulting Engineer, to the Agent and Manager of the Railway Company, and to the Chief Engineer through the Department of Public Works.

(True Extract and Copies.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 13.

TO THE CHIEF SECRETARY TO GOVERNMENT,

Fort Saint George.

SIR,

I have the honor to acknowledge the receipt of Extract from Minutes of Consultation, Financial (Railway) Department, No. 329, of the 24th December 1855, forwarding an Extract from a Despatch from the Honorable Court, in which a rule is laid down that the construction of roads

leading exclusively to Railway Stations is strictly a Railway expense, and that the cost of their construction and maintenance should therefore be borne by the Railway Company.

I apprehend there may be some difficulty in rightly interpreting this order in India, or at all events in this part of India, and that great inconvenience and the character and success of the Railway, in a Financial point of view, might be unjustly prejudiced, if all the roads made with an immediate view to this or that Railway Station were to be considered exclusively leading to such Stations.

3. I have been for sometime past in communication with several of the Collectors regarding roads, which would be required to communicate with certain Railway Stations; but such communications were made not in advocacy solely, or even mainly for the interests of the Railway, but chiefly on behalf of the people themselves.

4. So also in my report, No. 182, dated 22nd November last, I submitted to Government a suggestion that certain of these roads, obviously of great importance to the interests of the public, and of the Railway Company, should be taken in hand at once.

5. It is not easy to say who benefits most, the people or the Railway Company, the carrier or the carrier, from these roads being made; but Government will observe that, in almost every case, there is a road marked in the map as already in existence, showing that the General Traffic of the country had already taken these several lines.

6. In looking, however, at the circumstance of our first Railway stretching westward from Madras upwards of 60 miles, it will be observed that there is not one single good road crossing that line, i. e. leading from North to South, with the exception of a 2nd class road latterly made, close to the western extremity of the line from Wallajahmuggur to Sholinghur.

7. The situation of a Railway here then is totally different from that of one in a more advanced country. In England, for example, the lines traverse a country already generally intersected with good high roads. The Railway men plant their stations at a point where such roads cross their line, and, when necessary, make a short branch to such roads, these little branches, resembling a road from a Gentleman's gate to his house, being indeed exclusively for Railway purposes.

8. Railway Managers cannot do the same here, because, though there are many roads or tracks crossing the country, it would, in every case, be the height of imprudence for them to spend money on short branches to such tracks, until they ascertained whether the Government intended to remodel these country roads on their own lines, or to take a different line in each case.

9. Making the common roads of the country, for the most part, subsequently to the construction of the Railway, roads, which ought to have been in existence before, will now doubtless be directed across the line at the several Railway Stations; and there will be fewer roads, therefore, for the Railway Managers to make exclusively for their own purposes, since the common roads of the country, which, had they been made before, might have crossed the line of Railway at points where it might be inconvenient to plant Stations, will now be directed by the Government Officers on to those Stations.

10. I would suggest, therefore, that no such road be charged to the Railway Company, until their representatives in this country have had an opportunity of expressing their opinions of the propriety of so charging it, and that, as a general rule, it be left to them to apply for the construction of such roads as a matter immediately affecting their own interests.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 31st January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 59.

Extract from the Minutes of Consultation, dated 23rd February 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 31st January 1856.)

It is observed that this Government have recently* applied to the Government of India, in the Department Public Works, for more definite instructions in respect to the meaning to be attached to the orders of Honorable the Court of Directors, 26th September 1855, regarding the construction and maintenance of roads leading exclusively to Railway Stations. Resolved that the above letter from the Consulting Engineer be forwarded through the same Department to the Supreme Government, in continuation of the subject.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 105.

Extract from the Minutes of Consultation, dated 15th April 1856.

Read the following letters.

PUBLIC WORKS DEPARTMENT,
RAILWAY.

No. 507.

Extract from the Minutes of Consultation, under date the 10th April 1856.

Read the following letter from Lieutenant Colonel W. E. Baker, Secretary to the Government of India, to J. D. Bourdillon, Esq., Secretary to the Government of Fort St. George, dated Fort William, the 22nd March 1856, No. 1210.

SIR,

I am directed to acknowledge your letter, No. 161 of the 5th ultimo, soliciting further instructions as to the interpretation to be put upon the order of the Honorable Court of Directors, that the cost of all roads, leading exclusively to Railway Stations, should be borne by the Railway Company. I am also to acknowledge your letter, No. 308 of the 27th ultimo, enclosing a communication from the Consulting Engineer to your Government, on the same subject.

2. In reply, the Right Honorable the Governor General in Council observes that a road, leading exclusively to a Railway station, is as strictly part and parcel of the Railway works as the steps leading up to the terminus door.

3. But a road 18 or 20 miles long cannot, in the nature of things, lead exclusively to a Railway station, and, therefore, never can come within the rule laid down.

4. On the other hand, short roads from a Railway station to a public road always will come within the rule.

5. Between these two classes will be doubtful cases, each of which will probably have to be decided on its merits, with advertence to the principle laid down by the Honorable Court.

6. The proposition of Colonel Pears "that no such road should be charged to the Railway Company, until their representatives have had an opportunity of expressing their opinion on the propriety of so charging it, and that, as a general rule, it should be left to them to apply for the construction of such roads," is in no way inconsistent with the principle of the Court's order, and this Government entertains no objection to its being made a rule. In Bengal, all projects of roads, exclusively for Railway objects, have originated with the Railway Officers.

7. It may be observed that the longest piece of road, made by the Railway Company in this Presidency, has been that extending from the Raneegunge terminus to the Grand Trunk road, a distance of about 2½ miles.

Ordered to be communicated to the Chief Engineer, in the Department of Public Works, for his information, and to the Public Department, for communication to the Consulting Engineer for Railways.

2. As now interpreted in this letter, the Order of the 3rd January 1856, respecting roads to be made by the Railway Company, seems to extend only to the actual approaches to a station from a contiguous highway; and none of the roads, which have been recommended as feeders to the Railway, appear to come within its terms. The Right Honorable the Governor in Council is, therefore, pleased to order, with reference to Extracts Minutes Consultation of 5th February, No. 160, and 3rd April, No. 478, that the two roads from Ranipett and from Wallajapettah, respectively, to Amoor shall now be executed, at once, as Government works.

3. As respects the road from Neelacuntriapettah to Amoor, the third road entered in the Budget of 1856-57, the Governor in Council will be prepared, with reference to para 5 of the letter from the Civil Engineer 4th Division to the Chief Engineer, dated February 19th, 1856, to authorize the execution of the road from Perincanjy to Bannaveram, in lieu of that, if the Civil Engineer should still consider it preferable to be first undertaken, as an approach to the Railway from Sholinghur.

4. The Chief Engineer will, also, be at liberty to mention any other Railway feeders, which he may consider of sufficient urgency, to justify their being undertaken in anticipation of the sanction to the Budget of 1857-58. He will, at the same time, submit full reasons for the opinion.

(A true Extract.)

(Signed) J. D. BOURDILLON,

Secretary to Government.

Ordered to be communicated to the Consulting Engineer for Railways, with reference to his letter of the 31st January 1856, No. 13.

(True Extract and Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 240.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

I learn, from the Traffic Manager of the Madras Railway, that there is a marked tendency in the Goods traffic to increase at the several stations of Companypettah and Sholinghur; but that the transport of the Agricultural produce of the country to those points is carried on, at present, under great difficulties, from the very imperfect condition of the cross roads.

2. Estimates for the improvement of the roads to which I refer will, I believe, be included in the next Budget, being those from Conjeveram by Companypettah (station) to Tritany and Nuggery, and another from Cauverypauk by Sholinghur (station) to a junction with the Sholinghur road near Perincanjee.

3. The completion of these roads would be attended with great benefit to the country, and would tend greatly to augment the local traffic on the Railway. The portion of road most urgently requiring improvement with this view, seems to be the line from Companypettah Station towards Nuggery, and that from Cauverypauk to Perincanjee.

4. I have thought it my duty to bring the subject to notice, not knowing whether the degree of importance, to be attached to these railway feeders, will be considered such as to justify the Government in ordering their execution, in anticipation of the sanction of the Budget.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 18th November 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 251.

To T. PYCROFT Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

I have the honor to forward, for the consideration of Government, a petition* addressed to the Chief Engineer of the Railway, transferred by that Gentleman to me, from certain inhabitants of Conjeveram and its neighbourhood, respecting the road from Conjeveram to the Companypettah Station. This road, Government will observe, is one of those referred to by me in a late report, No. 240, dated the 18th instant.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th November 1856.

PUBLIC WORKS DEPARTMENT,
PUBLIC.

No. 2319.

Extract from the Minutes of Consultation, under date the 16th December 1856.

Read the following papers.

From the Consulting Engineer for Railways.

States that there is a marked tendency in the goods traffic to increase at the several Railway stations, but from the imperfect condition of the cross roads, the transport of the agricultural produce, at the several points, is carried on under great difficulties; and as estimates for the improvement of these roads are to be included in the next Budget, requests the orders of Government may be issued for their execution in anticipation of sanction. (Here enter 18th November 1856, No. 240.)

Memo. from the Chief Engineer.

Informes, in reply to Memo. dated 21st Instant, that the Estimate marked FF., dated 1st Instant, No. 7728, is for a road from Perincanjee to Bannaveram, and will connect the Railway station there with Sholinghur, also that an estimate has been received for the road from Nuggery, via Tritany, to Companypettah, which will be submitted with the usual monthly list, and an estimate has been called for for a road from Conjeveram to Companypettah, which it is hoped will also be submitted by the end of the month. (Here enter 24th " 5329.)

From the Consulting Engineer for Railways.

Forwards a petition, addressed to the Chief Engineer of the Railway, from certain inhabitants of Conjeveram, respecting the road from that town to the Railway station at Companypettah, and states that this road is one of those referred to in his Report, No. 240, dated 18th November. (Here enter 29th " 251.)

The Government observe that, in an Extract Minutes of Consultation of this date, they have authorized the execution, on emergency, of an estimate of Rupees 12,600, for a road from Perincanjee to the Railway station at Bannavaram, submitted by the Chief Engineer with report FF, dated 1st November No. 7728; and they understand, from the Chief Engineer's Memo. of the 24th November, that he has received an Estimate for the road from Nagery, *vid* Tritany, to Companypett, and has called for an estimate for a road from Conjeveram to Companypett. These Estimates, when submitted, will receive immediate attention, with reference to the opinion expressed by the Consulting Engineer, in his letter of the 18th November, as to the great importance of these roads to the country and the Railway traffic, and with reference to the petition submitted by the Consulting Engineer, with his letter of the 29th November.

(A true Extract.)

(Signed) J. D. BOURDILLON,

Secretary to Government.

BUILDINGS, LOCOMOTIVE DEPARTMENT.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 9.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to state that the Locomotive Superintendent has brought to my notice the advisability of placing the four large Locomotives with their tenders in Store, using for the present the Locomotives last received, which are of a sufficient size to meet present requirements and are more economical in their working.

2. As there will not be sufficient cover in the Running Sheds for the whole of the Locomotives, including those Engines shortly expected by the "Cossipore," I have, on the requisition of the Locomotive Superintendent, called upon the Chief Railway Engineer to furnish an Estimate of the cost of constructing a shed of sufficient size, for the cover of the four large Locomotives with their tenders, which I beg to transmit herewith, and request that Government may be pleased to sanction the outlay, *viz.* Rupees (450) four hundred and fifty.

3. By this arrangement there will be sufficient room in the Running Sheds for all the Tank Engines now here, as also for those expected.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 4th January 1856.

Submitted and recommended for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 8th January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 16.

Extract from the Minutes of Consultation, dated 16th January 1856.

Read the following letter from the Agent and Manager, through the Consulting Engineer for Railways.

(Here enter 4th January 1856.)

The Government sanction the Estimate, for the shed proposed to be erected for the cover of the Locomotives, amounting to Rupees (450) four hundred and fifty.

(True Extract)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY, 4TH SEPTEMBER 1856.

No. 578.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to state that, on more than one occasion, has the great and many objections, arising from the numerous temporary thatched buildings in the plateau at this station, been prominently brought to my notice; not only is there much danger incurred from the inflammable description of the buildings, and which, in the event of fire, would lead to the destruction of great amount of property, but inconvenience is also felt from the crowding of the station ground. It therefore appears to me to be desirable that measures should be adopted, for the early removal of the carriage-construction department to the ground at Perambore. But as the large Workshops about to be built on that ground will, I believe, not be completed for a long period, the Locomotive Superintendent and the Chief Engineer consider that the object desired may be attained by the construction, in the first instance, of sheds which can, as a temporary arrangement, be used for the cover in the construction of carriages, but which, when the large Workshops are complete, will be available as Timber and Saw sheds, as explained in a letter* from the Locomotive Superintendent, a copy of which is annexed.

* No. 343, 16th August 1856. I forward a Plan of the buildings, and an Estimate of the cost of constructing the same, amounting to Rupees 5,750, which I request you will have the goodness to move the Government to sanction.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted and recommended for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 23rd October 1856.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT,
ENGINEER'S OFFICE, 16TH AUGUST 1856.

No. 343.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

In our conversation of yesterday, relative to increased accommodation for carriage wagon building, and to the dilapidated state of our present Palmyrah shed, which must be replaced to

enable us to carry on work in them through the Monsoon, you expressed your opinion that it was not desirable to lay out any more money on sheds of that nature, in the Station yard at Royapuram, from their liability to take fire, and you also seemed to think it would be well to remove our carriage Workshops at once to Perambore.

Mr. Paton informs me that it will take some time to get the Permanent shops ready for our reception, far longer than we can wait without additional shop room of some kind. What I would therefore propose is this, that sheds should be at once erected at Perambore, to serve temporarily for carriage building purposes, and to be so arranged and constructed as to be convertible into Timber and Sawyers' sheds, in connection with the Permanent Workshops. Such buildings might be run up rapidly, and if we could get into them before the Monsoon, it would enable us to appropriate our present shops to the purpose of sheltering the stock, now lying exposed, and which must suffer considerably from exposure to the Monsoon.

Our Engines especially require shelter, and a portion of the carriage buildings may be devoted for that purpose, pending the erection of the Permanent running shed, until such time as we require these sheds for the purpose of carriage and wagon repairs.

I have the honor to beg that you will have the goodness to obtain the necessary sanction for the erection of sheds at Perambore, to be used, as above adverted to, as temporary carriage Workshops.

I have, &c.,
(Signed) WILLIAM BARTON WRIGHT,
Locomotive Superintendent.
(True copy.)

T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

To MAJOR T. A. JENKINS,

No. 453.

Agent and Manager, Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 578, of the 4th instant, and to convey to you the authority of Government for proceeding with the construction of the shed proposed by you at Perambore, pending the examination of the Estimate, &c.

2. I trust you will be careful that the heads of departments concerned are consulted in the selection of the site for this building, and fully satisfied of the suitability of that which may be ultimately determined upon.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Camp, Ootacamund, 18th September 1856.

No. 381.

FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 3rd November 1856.

Read the following letter from the Agent and Manager of the Railway Company, through the Consulting Engineer for Railways.

(Here enter 4th September 1856.)

For the reasons stated in the letter from the Railway Agent, the Government sanction the Estimate submitted by him, amounting to Rupees (5,750) Five thousand seven hundred and fifty.

for the erection of sheds at Perambore, to be used as temporary carriage Workshops, and eventually to serve as Timber and Saw sheds.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

MADRAS RAILWAY,
MADRAS, 29th SEPTEMBER 1856.

No. 646.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

I have the honor to forward, for submission to Government, Plans and Estimates, for the construction of workshops for the Locomotive and Carriage building Department at Perambore, which meet the requirements of the Superintendent of that Department, and I request that you will be pleased to move the Government to sanction the Estimates, as hereunder specified.

Estimate of 6 Workmen's Houses, as per Plan, No. 43.....	Rs 14,650 0 0
Estimate of Carriage Buildings, Fittings and Painting shops, as per Plan, No 47..	83,400 0 0
Estimate of Carriage and Engine Machinery shop, as per Plan No 48.....	33,400 0 0
Estimate of Superintendent's Offices, as per Plan No 49.....	13,900 0 0
Estimate of Smithy and Wheel Tire Furnaces shop, as per Plan No 50.....	17,500 0 0

Total Company's Rupees..... 1,62,850 0 0

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras 13th November 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 532.

To MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

As the joint amount, viz. Rs. 1,62,850, of the five Estimates forwarded with your letter, No. 646 of the 29th ultimo, is somewhat considerable, and, as it appears to me much in advance of present requirements, I have the honor to request that you will be so good as to inform me which of the buildings, or what portions of any of them, are considered by you urgently requisite for immediate sanction, and, on the other hand, what may safely be deferred for the present.

2. I shall, likewise, feel obliged by your stating, in the event of the sanction of Government being granted for the whole amount to be executed, what in your opinion should be the annual expenditure, from that amount, so as to provide amply for the requirements of the traffic.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 22nd October 1856.

MADRAS RAILWAY,
MADRAS, 3RD NOVEMBER 1856.

No. 762.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter, No. 532, dated 22nd of October, I have the honor to state that, as the plans of the Workshops, for the Locomotive and Carriage building Department at Perambore, have been prepared in a manner to facilitate communication and transport of heavy weights from shop to shop, it is considered to be desirable that the whole, as a system, should be sanctioned by the Government; as, however, these extensive buildings cannot be completed, under ordinary circumstances, within a period of four years, the buildings that will be first required, I am informed by the Locomotive Superintendent, will be the Timber shed, to be used as a Carriage building shed pending the construction of the large shops, the machinery shop, Smithies and wheel-tyre turning shop; the other shops can be constructed in succession. Six houses for Artificers and an Office for the Superintendent and Foreman will be, I am informed, early required.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the sanction of Government.

Madras, 13th November 1856.

T. T. PEARS,

Consulting Engineer for Railways.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 533.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

With reference to your letter, No. 646, of the 29th ultimo, I have the honor to request information as to whether the Plan and Estimate, for Rupees 13,900, therewith forwarded for the Locomotive Superintendent's offices at Perambore, provides, or not, more than ample accommodation for the purposes required.

2. Taking into consideration the possibility of the Locomotive Superintendent's office being at some future date removed from Perambore, it appears to me advisable to allow, at present, merely for what will suffice for his existing establishment, accommodation for any considerable additions to which can, at any future time, be made, rather than to erect, as proposed, an extensive building at a great outlay, suited for an establishment of a strength which it may never be destined to accommodate.

3. I shall feel obliged by your supplying me with a statement, showing the present strength of the Locomotive Superintendent's establishment.

I have, &c.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 22nd October 1856.

MADRAS RAILWAY,
MADRAS, 1ST NOVEMBER 1856.

No. 760.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No 533, dated the 22nd ultimo, I have the honor to state that it does appear that the accommodation, proposed to be provided for the Office of the Locomotive Superintendent, at Perambore, is larger than required for the existing establishment.

2. I request that you will have the goodness to return the Plan and Estimate for that building forwarded to you with my letter, No. 646, dated 29th September, with a view to the revision of the same.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

No. 236.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 646 and 762, dated the 29th September, and 3rd November 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards certain Plans and Estimates, the latter amounting in the aggregate to Rupees 1,62,850 for buildings, connected with the Locomotive and Carriage department, which it is proposed to erect at Perambore. Of these, Government have already sanctioned the Workmen's houses, Rs. 14,650, and of the others the Agent mentions, as being first required, the Machinery shop, Smithies, and Wheel-tyre-turning shop. The Timber shed, referred to by the Agent, is not among these, but has been separately sanctioned.

2. It has been proposed to construct the principal shops hereafter, at some convenient and more central point up country. With such an arrangement in view, the buildings now proposed appear large, but, under any circumstance, they will not be more than would be required in Madras, in the event of the Cuddapah line coming into operation.

3. The Agent does not contemplate carrying out all these buildings at once; and it will be better, therefore, to give ourselves as much time as possible to ascertain the requirements of the line, and to determine the most judicious arrangement of shops, as other portions of the line are brought into work.

4. I would suggest, therefore, that these buildings be approved, that the Machinery shop, Smithies, and Wheel-tyre-turning shop, be sanctioned at once; and that the Agent be requested to consider well the dimensions proposed for the Carriage building and Locomotive erecting shop, and to report to Government, at a future day, when the Engineer Department are prepared to proceed with those buildings.

Rs. 33,400.
Rs. 17,500.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th November 1856.

FINANCIAL (RAILWAY) DEPARTMENT.
No. 418.

Extract from the Minutes of Consultation, dated 21st November 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Railway Company:

(Here enter 13th November 1856.)

Total amount of the Estimates... Rupees 1,62,850
Deduct amount sanctioned 3rd
November 1856.....

Remainder.....
a Rupees 23,400
b Rupees 17,500
Total... 50,900

The Government approve of the buildings* connected with the Locomotive and Carriage department, which it is proposed to erect at Perambore, and resolve, on the recommendation of their Consulting Engineer, to sanction, at once, the Estimates submitted by the Railway Agent for the Carriage(a) and Engine Machinery, and Smithie(b) and wheel-tyre-turning shops, amounting together to Rupees (50,900) Fifty thousand and nine hundred.

2. They desire that, as suggested by Colonel Pears, the Agent be requested to consider well the dimensions proposed for the Carriage building and Locomotive erecting shop, and to report, at a future period, when the Engineer Department is prepared to proceed with those buildings.

(True Extract.)

(Signed) F. PYCROFT,

Chief Secretary.

TIMBER.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 29.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

With reference to your letter, No. 48, dated 22nd instant, I have the honor to request you will state, for the information of Government, what measures you have adopted, or propose to adopt, for the purchase of Timber by contract, and what has been the result of such measures hitherto.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th January 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 15.

TO THE CHIEF SECRETARY TO GOVERNMENT,

SIR,

Submitted to Government on
the 28th January 1856.

Letter No. 29, dated 28th
January 1856.

In reference to an application for a further advance of Rupees 70,000, for the purchase of Timber, the Agent and Manager of the Madras Railway Company was requested to state, for the information of Government, what measures he had adopted, or proposed to adopt, for the purchase of Timber by contract, and what has been the result of such measures hitherto.

2. The reply, which is endorsed "confidential," is submitted herewith.

3. My object in addressing the Agent was to ascertain whether the views, expressed in my report of the 14th March 1855, and entirely concurred in by the Right Honorable the Governor in Council, have been adopted and acted up to by that Gentleman or not.

4. It appears to me that they have not; and from conversations which I have had with the Agent, I am inclined to believe that he still adheres to the opinion, that private dealings, to a certain extent, are essential to the advantageous purchase of the supply of Timber required by the Company.

5. I regret that such should be his views; because I am satisfied, in my own mind, that they are not compatible with the best interests of the Company.

6. From the enclosed "confidential" letter, the Government will observe that tenders were invited for Timber, and that those received in reply to such invitations were rejected as too high.

7. It would seem, but this is not quite clear, that subsequent to the date named for opening, three other tenders were received—whether sealed or not does not appear—which were also declined; and from the fourth para it appears that one of the parties, thus tendering at too high a rate, has had the opportunity afforded him of entering into an arrangement for the sale of 500 tons, previously tendered at Rupees 70, for Rupees 58-10-0.

8. This is the system advocated and followed, I believe, by the Agent, both in regard to Timber in the rough and Sleepers. Tenders are invited. In some cases, a day for opening has been named; in others, this appears to have been left to the discretion of the Agent.

9. In either case, if the first tenders are too high they are rejected, and, without further notice, other offers are received; in fact, the system of offering to fair competition may be said to be dropped; and private bargaining takes its place.

10. I consider that money, expended in advertisement under these circumstances, is thrown away. Such a system is indeed exactly suited to the genius of this people; who are unaccustomed to, and dread, fair competition; and would rather trust to private bargain, favor, and intrigue. What, it may be asked, need have prevented the man, who first offered Rs. 70 and then came down to Rs. 58-10-0, doing so by sealed tenders on finding his first refused?

11. My opinion is, that, in this matter, the Railway Authorities should look to their future no less than their present interests; that they should strive to create a market, by repeated public invitations of sealed tenders; that the tenders, so received, should be decided on at a fixed day, and, if need be, rejected; but that, as an encouragement, the lowest, if in other respects satisfactory, should be accepted, although appearing to give a somewhat unreasonably high profit. In such a case, the Agent might justly exact punctuality as to time, and thereby, in a measure, compensate for high price.

12. That, if necessary, the advertisement should be repeated, and, in fact, the Timber merchants at last convinced that, in no other way, could arrangements for the sale of Timber to the Railway Company be effected.

13. The tenders would, of course, as in all similar cases, be submitted to Government for sanction.

14. I consider the matter of sufficient importance to bring it specially to the notice of Government. Large sums of money are being thus expended by the Agent, upon a system that I cannot think judicious.

15. Should the Government not wish to interfere, directly, with the proceedings of the Agent in this, which is a question of management (whether it does or does not involve a pecuniary sacrifice is a fair matter of opinion), I would suggest that the Honorable Court be requested to re-

fer the matter, at an early date, to the serious consideration of the Board of Directors, with reference to my report of the 20th March 1855, and the order of Government thereon.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 7th February 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 62.

Extract from the Minutes of Consultation, dated 23rd February 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 7th February 1856, No. 15.)

The Right Honorable the Governor in Council entirely agrees with the views set forth by the Consulting Engineer in the above letter. He, however, thinks it unnecessary to dwell upon the subject, inasmuch as the question has been disposed of by the Honorable the Court of Directors, in para 31 of their Despatch of 12th December 1855, No. 26, which has recently been furnished to Colonel Pears, and no doubt been by him communicated to the Railway Agent. In that Despatch the Honorable Court express their entire concurrence in the opinion given by this Government, in Extract Minutes Consultation, 20th March last, and state that they have required the Railway Companies in England to observe the principle of competition to the fullest extent possible consistently with the interests of their undertakings.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 105.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer.

SIR,

1. I have the honor to forward a Statement, showing the receipts and expenditure, on account of stores, and request that you will have the goodness to move the Government to sanction a further advance of Rupees (70,000) Seventy thousand, to meet expenses in the purchase of Timber and the landing of the Locomotives and heavy stores.

2. I beg to acquaint you that I have completed the purchase of more than half the quantity of the Timber mentioned in my letter, dated 2nd instant, payments for which I shall have to make at an early date.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 19th February 1856.

Submitted (with observations) for the sanction of Government.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 22nd February 1856.

No. 28.

On a letter from the Agent and Manager of the Madras Railway Company, No. 105, dated 19th February 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent applies for a further advance on account of the purchase of Stores and Timber. I would recommend that the advance be sanctioned, but that the Agent's attention be called to the orders of Government, No. 62, of the 20th March 1855, regarding the purchase of Timber by Contract. I have noticed this subject in my report, No. 15, of the 7th February 1856, upon which the orders of Government have not been received.

2. I think the Agent might be requested to issue fresh advertisements for Teak Timber, to adopt all possible means of making the advertisements known far and wide, translating them into the native languages, and publishing them in Calcutta papers, and those of Burnah, as well as the local journals, that he should give full time, not less than 4 months, for the arrival of the tenders, and report to Government the result.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 22nd February 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 70.

Extract from the Minutes of Consultation, dated 29th February 1856.

Read observations of the Consulting Engineer on a letter from the Agent and Manager of the Railway Company.

(Here enter 22nd February 1856, No. 28.)

1. Resolved, that the Sub Treasurer be authorized to advance to the Agent and Manager of the Railway Company, the further sum of Rupees (70,000) Seventy thousand, required on account of the purchase of Timber and landing of heavy stores.

2. The Government approve the suggestion made by Colonel Pears, in the 2nd para of his observations, and desire that it may be communicated to the Railway Agent. The views of Government, on the question of procuring Railway supplies by competition, were communicated to the Consulting Engineer, in Extract Minutes of Consultation, of the 23rd Instant, No. 62.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

SLEEPERS.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 102.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

I have the honor to submit, for the approval of Government, a Tender, which I have received through the Chief Railway Engineer, from M. G. Barthasartee, for the supply of 30,000 Sleep-

ers of the 1st class, deliverable near Tripatoor, at Rupees 2-8-0 each, and I request that I may be authorized to accept the same.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 19th February 1856.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 25th February 1856.

No. 31.

On a letter, No. 102, from the Agent and Manager of the Madras Railway Company, dated 19th February 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent submits and recommends for acceptance a tender, by one Parthasardy, of 30,000 Sleepers, at Rupees 2-8-0, to be delivered within 10 miles of Tripatore (Salem District). The price is, I think, reasonable, though for that neighborhood not particularly favorable.
2. The tender has not been made in the manner I should wish to see it. It seems to have been made in personal communication with the Chief Engineer. Such personal communication has, doubtless, in the present state of society in this part of India its advantages.
3. I would rather, however, see the Agent persevere in calling for tenders, and in adopting the system recommended by me in regard to Timber, and with the same view, viz. that of raising up a class of active competing contractors, I would recommend that authority be granted for the acceptance of this tender, but that the Agent be requested to report when his last advertisement was published, in what papers and languages, and what the result was.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 25th February 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 72.

Extract from the Minutes of Consultation, dated 4th March 1856

Read the following letter from the Consulting Engineer for Railways.

(Here enter 25th February 1856, No. 31.)

The Government authorize the acceptance of the tender for 30,000 first class Sleepers, at 2½ Rupees each, made by T. M. Parthasardy.

The Consulting Engineer will obtain from the Railway Agent and submit to Government the information specified at the conclusion of his observations.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 139.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

I have the honor to forward a Tender from Veeralai Naiken for the supply of 3,000 Sleepers, at 1 Rupee each, of the 1st Class, at Palghaut, and annex a copy of a letter from the Chief Railway Engineer, in which he recommends the tender being accepted, and that payments be made by the District Engineer, on the delivery of the Sleepers, he certifying to their correctness.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 8th March 1856.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 11th March 1856.

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
CAMP PALGHAUT, 29TH FEBRUARY 1856.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the pleasure of handing you a Tender for 3,000 Sleepers, proposed to be delivered at Palghaut for Rupee 1 each.

2. The price is not high, though remunerative; and I beg to suggest that the clause requiring the withholding of ten per cent be not enforced.

3. I am anxious to encourage these small contractors in every way, believing it to be the Company's interest to do so, and in order to this, it is absolutely essential that the contractors should receive their money on the delivery of good Sleepers.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

(Signed) T. A. JENKINS,

Agent and Manager.

No. 36.

On a letter (No. 139,) from the Agent and Manager of the Madras Railway Company, dated 8th March 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent submits, and recommends for sanction, a tender of 3,000 Sleepers, to be delivered at Palghaut, at 1 Rupee. The remarks made in my Report of the 26th ultimo, No. 31, upon a tender then submitted, apply to this.

I would, however, recommend that it be sanctioned.

2. The Chief Engineer of the Railway proposes that the Engineer in the District should pass and at once pay for the Sleepers. Such a proceeding would be to set aside the supervision

of Government, on the plea of wishing to make early payment to the Contractors, and would be in direct violation of an order of Government, in the Financial (Railway) Department, No. 83, of the 11th April 1854.

Report for 1854, page 200, Appendix 2.

3. If the contractors ever kept their own time, if the Engineers inspected the Sleepers offered, on all occasions, promptly, which they do not do, there might be some reason in pleading for this violation of an important principle. I do not consider it, in the present case, either necessary, or expedient, that the control of the Government Officer should be set aside. The proper mode of proceeding is, for the contractor to obtain from the Engineer a certificate, and to hand this on to the Agent, who, in a few hours, if no objections appear to the transaction, receives the sanction of Government to the payment. The contractor, who has been many months fulfilling his part, is not likely to complain, if he gets his money within a fortnight after delivering his supplies.

Madras, 11th March 1856.

T. T. PEARS,
Consulting Engineer for Railways.

No. 84. FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 20th March 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 10th March 1856.)

The Government authorize the acceptance of the tender made by Veerala Naiken for the supply of 3,000 Sleepers of the 1st class at one Rupee each, to be delivered at Palghaut.

They concur in the concluding observations of the Consulting Engineer, and desire that the same be communicated to the Railway Agent.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

No. 474. MADRAS RAILWAY, 18TH JULY 1856.

To LIEUTENANT COLONEL T. T. PEARS,
Consulting Engineer for Railways.

SIR,
I have the honor to annex a copy of a letter, No. 158, dated the 15th July, from the Chief Railway Engineer, in which he draws attention to the state of the Timber market in Malabar, and states that Agents from the Scinde and Bombay Railways are at Calicut, purchasing Sleepers for their respective Companies, and he suggests that a person, in the employ of this Company, be appointed to purchase Sleepers on the Western Coast, without awaiting for the formality of Tenders being submitted and approved of by the Government.

2. I beg to state that, undoubtedly, delays have occurred in obtaining sanction to Tenders, caused by various circumstances, for instance having to send the Tenders first to the Chief Engineer for report, then afterwards to be returned for correction or explanation. I would, however, with a view of removing any impediments, either real or supposed, adduced by the Chief Engineer, in the way of obtaining supplies of Sleepers for the construction of the Railway, beg to recommend to the Government that his suggestion be adopted as a trial, and that the officer in charge of Stores at Beypoor be permitted to purchase Timber, for Sleepers, that may be offered for sale, the same being examined and certified as to soundness and eligibility by the Engineer of the District, he forwarding the usual documents for the sanction of the Government.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

Camp Ootacamund, 19th September 1856.

T. T. PEARS,
Consulting Engineer for Railways.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 15TH JULY 1856.

No. 158.

To MAJOR T. A. JENKINS,
Agent and Manager.

SIR,

Allow me to draw your attention to the state of the Timber market in Malabar, and our prospects of procuring Sleepers there.

2. The Bombay Railway and the Scinde Railway, and the Bombay Government, have Agents down at Calicut, buying up all the timber they can lay their hands on, and taking it up to their respective lines. Owing to this the price is likely to rise very much.

3. In the meantime what are we doing? Your Agent in Beypoor sent Tenders for sanction to you in February last; and now in the middle of July we have just received sanction for two of these, the remainder being still under consideration.

4. In the interval other parties have been in the market, and after a delay of five months in accepting a Tender, it is doubtful whether the parties tendering will abide by their offer. Unless some change is made, leaving the officers of this Company as free to purchase Sleepers as their neighbours, and the Government, we shall certainly be obliged to indent again upon England.

5. You have a responsible and highly paid Officer on the spot, and I have an Engineer there. There surely would be no great laxity in empowering your Agent to purchase Sleepers, approved by the Resident Engineer on certain fixed principles laid down for his guidance.

6. I am aware that this is objected to as ignoring the control of the Government officer, but what does that Gentleman's control or mine amount to in such a matter? We can but lay down rules. We cannot see, measure or examine the Sleepers for ourselves; and having laid down rules for the guidance of the party purchasing, we must in the long run take his word that the rules are abided by even under the present system.

7. The Government send an Agent from Bombay to purchase timber in Beypoor, and remove it from before our very eyes, while our Officers are unable even to appear in the market as purchasers.

8. It may be said that it will not be a matter of more than a few days to receive sanction. All I can say is that it never has been so speedy.

9. I am very unwilling to press the matter again upon your attention; and it is only because I believe the interests of the Company to be seriously compromised, by the present arrangement, that I am induced to do so.

I have, &c.,

(Signed) GEORGE B. BRUCE,
Chief Engineer.

(True Copy.)

(Signed) T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 383.

To MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge your letter, No. 474, of the 18th instant, proposing certain arrangements for the purchase of Sleepers in Malabar. Before laying this before Government, I shall be glad if you will be good enough to inform me, of the date of your last advertisement inviting tenders for Sleepers, of the measures adopted by you then, or on any other occasion, for making your wants known to the people of Malabar, through the medium of the native languages.

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2. I also request to be informed, to what tender Mr. Bruce alludes, in para 3 of his letter, copy of which accompanied yours under acknowledgement.

I have, &c.,
(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Keelmooringhy, 22nd July 1856.

MADRAS RAILWAY, 4TH AUGUST 1856.

No. 520.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 383, dated the 22nd ultimo, I have the honor to acquaint you that in October of last year, I advertised in the papers named in the margin calling for tenders for the supply of Sleepers. The Engineers in all the districts made known our wants in their respective vicinities, and the Officer in charge of stores at Beypoor. Mr. Allan also made it public, on the Western Coast, that tenders would be received for Sleepers, and has forwarded to me several tenders; those below specified are a part of them, and have been sanctioned by the Government, and are those alluded to by the Chief Engineer, in his letter, No. 158, dated 15th ultimo.

From Eduljee Cursetjee, Sleepers 45,000, sanctioned 25th June 1856.
D. H. Arango, " 36,000, do. do.
Burjorjee Framjee, " 6,000, do. 18th July 1856.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Camp Ootacamund, 19th September 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 409.

To MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 520, of the 4th instant, being a reply to my letter of the 22nd ultimo.

2. In the latter, however, you will observe, I requested you would be good enough to inform me of the measures which you adopted for making your wants (in regard to Sleepers) known to the people of Malabar through the medium of the native languages.

3. In your reply, you state that in that district Mr. Allan "made it public that Tenders would be received," I shall feel obliged by your stating for the information of Government what measures were adopted either by yourself or by your representative in Malabar for making your wants known through the medium of the native languages.

I have, &c.,

T. T. PEARS,
Consulting Engineer for Railways.

Camp Ootacamund, 14th August 1856.

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MADRAS RAILWAY, 10TH SEPTEMBER 1856.

No. 597.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 409, dated the 14th ultimo, in which you require to be informed what steps were adopted for making known our want of Sleepers, through the medium of the native languages, to the people of Malabar.

2nd. In reply I beg to state that, the Officer in charge of stores at Beypoor reports that he personally communicated with the merchants at Calicut, Tellicherry and Cochin upon the subject, and transmitted translations into the vernacular language of the Notice and specification of Sleepers to different merchants also in Cannanore and Billapatnam. The Engineer Officer of District XVII also made known our requirements throughout his District. Mr. Allan, the Officer in charge of stores at Beypoor, states that he finds a difficulty in inducing the native merchants to enter into a contract; that several offers have been made to him of Sleepers to be paid for on delivery, and that there are only three or four merchants at Calicut who have the means of entering into large contracts. They purchase from the small Timber merchants, and thus obtain a profit by the transaction.

I have, &c.,

(Signed) T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Camp Ootacamund, 19th September 1856.

No. 179.

On letters Nos. 474, 520 and 597 from the Agent and Manager of the Madras Railway Company, dated severally the 18th July, 14th August and 10th September 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent in these letters proposes that his Agent at Beypoor be authorized to purchase Sleepers, without the formality of tenders being submitted or approved by Government.

2. I need hardly trouble Government with reference to former correspondence upon this subject. It has been determined by Government, with the concurrence of the authorities at home, that the proper mode of obtaining supplies is by tender.

3. This system has never been fully carried out by the Railway authorities here.

4. Government will have observed that the loss of time is often pleaded as a reason for not referring matters to Government; and will have also observed that it is invariably shown that the delay, if any, arises from the extreme difficulty in getting replies from the Agent.

5. The Chief Engineer in this letter mentions a tender sent to the Agent in February and sanctioned in July.

6. The Agent explains what tender is alluded to, and I find that the 3 tenders mentioned were received in my office on the 5th of May, at least 3 months after they are stated to have been sent to the Agent; that a letter requiring explanation of some woods offered in one tender was despatched on the 9th of May, that a reply to that letter was received on the 12th of July—two out of the three tenders having been in the meanwhile submitted for sanction at the request of the Agent—that the tender regarding which a reference was made on the 5th May, and a reply received on the 12th July, was submitted to Government on the 15th July, and sanctioned on the 18th July.

7. I have only now to add that I have been lately in Malabar, and have personally communicated with Mr. Allon, who is employed, under the Agent's orders, in the charge of the Railway Company's property there.

8. Mr. Allon informed me that there was promise of abundance of Sleepers being furnished on contract.

9. He had not yet, he said, adopted the practice of inviting at a fixed day sealed tenders; but he invited people to tender, and never made known to others the offers made him. He added that no difficulty whatever was likely to arise from a reference for payment to Madras, so long as the money was paid at regular intervals. Thus a batch of Sleepers being passed, Contractors, if satisfied that in a fortnight or three weeks the payment would be authorized, would have no cause of complaint so long as these intervals between delivery and payment were tolerably regular.

10. I myself saw, and spoke to several contractors; and I have no doubt that if the spirit of competition is fostered among them, and if that too common idea, of their getting a contract being dependant on any Gentleman's favor, be discouraged and got rid of Sleepers may be procured in Malabar in abundance, and at a cheap rate.

No. 597. 11. In a letter now submitted the Agent observes that there are only 3 or 4 merchants at Calicut who have the means of entering into large contracts. These purchase from the small Timber merchants, and thus obtain a profit on the transaction.

12. Why these are just the very men we want. Of course they purchase from smaller tradesmen. What large capitalist ever did otherwise? They have a Parsee contractor at work now cheerfully and actively; and there will doubtless be more, if they make a profit by these transactions, not otherwise; and the more there are the sooner will that profit be brought to a minimum, and the price of Sleepers reduced.

No. 474. 13. In his first letter now submitted, the Agent alludes to the desirableness of removing any impediment real or supposed, adduced by the Chief Engineer, in obtaining a supply of Sleepers. Sleepers are accumulating fast at Beypoor; and the Chief Engineer has at present no use for them, and is not likely to have any urgent demand for some time to come.

14. It is my duty to add my conviction that this constant declared preference on the part of the Railway authorities for the system of private bargaining is as impolitic as, under the repeated orders from superior authority, it appears inexplicable.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 19th September 1856.

No. 325. FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 2nd October 1856.
Read the following letter from the Consulting Engineer for Railways.

Here enter 19th September 1856.

The Government quite concur in the views of the Consulting Engineer, as communicated in the foregoing report, and desire that the Railway Agent be informed that they cannot sanction any departure from the authorized mode of obtaining supplies of Railway Sleepers by Tenders to be previously approved by them. They must at the same time remark that there seem to be no grounds whatever for the present application of the Railway authorities to be allowed to purchase Sleepers on the Western Coast without the Tenders being submitted to and approved by Government.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY, 10TH SEPTEMBER 1856.

No. 608.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to forward a tender made by Palanyuppa Chetty, of Coimbatore, for the supply of 3,000 Sleepers of the 1st class, at Rupees 1-12-0 each, deliverable near Madookairy, received through the Chief Engineer, who, on a reference in respect to one of the woods therein named, "Pillay Muddah", states that, although unauthorized, it is an exceedingly good wood. I beg to recommend that Government may be pleased to authorize the tender being accepted.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 24th September 1856.

RAILWAY DEPARTMENT.
CONSULTING ENGINEER'S OFFICE.

No. 461.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 608, dated the 17th instant, forwarding a Tender from Palanyuppa Chetty, of Coimbatore, for the supply of 3,000 Sleepers, and to draw your attention to the circumstance of the Tender not having been dated, and that the delivery was to begin "from the 1st of July 1856;" while no allusion has been made in your letter as regards the delay in the submission of this Tender for sanction.

I also request to be favored with further information regarding the wood specially referred to as "Pillay Muddah," its botanical name, if possible, the uses to which it is known to be applied, and your Chief Engineer's reason for considering it a good wood.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 22nd September 1856.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY, 3TH SEPTEMBER 1856.

No. 585.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

In forwarding for sanction the accompanying copies of two statements of Sleepers, delivered by contractor Veerala Naiken at Paulghat, I have the honor, in explanation, to state that some

of the woods are not in the list of Timber authorized; but the Inspecting Engineer has pronounced them to be "of a serviceable and durable" description, and the Chief Engineer has recommended that the Sleepers be not restricted to those already sanctioned, but the Engineers be permitted to receive such woods as may be found serviceable. I have requested the Chief Engineer to forward a revised Statement showing the Timber that he would recommend for Sleepers; in the meantime, I have to request that you will have the goodness to obtain the sanction of the Government for the payment of the amount.

1st Class Sleepers 458 at 1 Rupee each.....	Rupees 458 0 0
" " 27 " "	27 0 0
Total Sleepers 485	Total Rupees 485 0 0

I have, &c.

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 457.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 585, of the 3rd September, in which you request sanction for the payment of certain monies to a Contractor, for Sleepers delivered, and explain that some of the woods are not among the timber authorized.

2. The woods, referred to, were, I presume, not in the Contractor's tender, which would appear to be that referred to in Extract from Minutes of Consultation, No. 84, of the 20th March 1856. If such be the case, I need only refer you to orders of Government, Nos. 83 and 114, dated, severally, the 11th April and 23rd May 1854.

3. The Sleepers, referred to as being of unauthorized woods, cannot be received as a portion of the supply contracted for. There can be no objection to your obtaining, by special purchase, a few specimens of unauthorized woods for purpose of experiment; but after the experience we have had of the behaviour of one unauthorized wood, on that portion of the line now open to the public, after the trouble that has been taken in ascertaining the most suitable woods, the difficulty that has been experienced in doing so, I cannot conceive upon what grounds your Chief Engineer now purposes to abolish all restrictions, or how it is that wood is to be "found serviceable," until it has been either tested by actual practice, or until trustworthy evidence of its character has been adduced. In either of these cases you are of course at liberty to propose an addition to the present list of authorized woods. I have now to convey to you the sanction of Government to the payment of Rupees 458, being the amount due to contractor Veerala Naick, for Sleepers delivered, and to return to you the statement containing a list of Sleepers, of an unauthorized description of woods, offered by the same man.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

(True copy.)

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 20th September 1856.

No. 186.

On a letter, No. 608, from the Agent and Manager of the Madras Railway Company, dated 17th September 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent submits for sanction a tender of 3,000 Sleepers, for Rupees 1-12-0 each, deliverable at Madakairy, near Coimbatore. I would recommend that it be sanctioned, but that the wood called Pillay Murdah be not admitted.

No. 461, dated 22nd September 1856.

2. I have addressed the Agent in a letter, copy of which is appended, upon the subject of this wood, and would not recommend its admission being sanctioned, until some satisfactory account is given of it.

Copy of letter, No. 457, dated 20th September, 1856, appended.

3. A very few days since, I had occasion to reply to a proposal, made by the Agent, that the Chief Engineer might accept any wood offered that might be found "serviceable." A good many Sleepers have failed from decay on the first three districts. The Agent will be called upon for a report on the several descriptions of wood from which these Sleepers were made; and I would recommend that he be directed to take care that the number and descriptions of Sleepers, which it may be found necessary to replace on that portion of the line, be recorded, and an account furnished with the other monthly reports.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 24th September 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 333.

Extract from the Minutes of Consultation, dated 7th October 1856.

Read the following observations of the Consulting Engineer for Railways, on a letter from the Agent and Manager of the Railway Company.

(Here enter 24th September 1856.)

1. The Government authorize the acceptance of Palaneyappa Chetty's tender for the supply of 3,000 Sleepers of the first class, at Rupees (1-12-0) One and Annas twelve each, with the exception of the wood described as "Pillay Murdah," which will not be admitted unless passed by the Consulting Engineer, on receipt of the information required from the Railway Agent respecting it.

2. With reference to the circumstance that a good many Sleepers have failed from decay, on the first 3 Districts, the Railway Agent should be instructed to take care that the number and descriptions of Sleepers, which it may be found necessary to replace on that portion of the line, be recorded, and an account furnished with the other monthly reports.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY,
MADRAS, 21st OCTOBER 1856.

No. 721.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 461, dated 22nd ultimo, I have the honor to annex an Extract from a letter from the Chief Railway Engineer, affording the information, therein called for, relative to the wood called "Pilly Murchah," which Mr. Bruce states is the same wood as that known in Tamil as "Maroothy Marum," and that the wood is much used in the Palghaut Workshops.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Extract from a letter from the Chief Railway Engineer, No. 593, dated 14th October 1856.

The Tender in question was first presented to Mr. Ross, then forwarded to me. It reached me in Camp, and I waited a few days that I might have an opportunity of consulting Mr. Ross about the price, which I remember right was rather high.

There was no other delay that I am aware of.

Why there was no date to the Tender I cannot explain, neither was it of much consequence. We use "Pillay Murchah" extensively in the workshops at Palghaut, and on making further enquiries, I am informed that it is the name applied in Malabar to the wood bearing the Tamil name of "Moroothy Marum," No. 7, in our list.

(True Extract.)

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 545.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

In advertence to your letter, No. 721 of the 21st instant, I have the honor to request that the Tamil name of "Maroothy Marum" may be used for "Pillay Murchah" in future, by which name authority has been already given to the use of the wood for Railway Sleepers

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th October 1856.

CHANGE IN THE ENGINEER DEPARTMENT.

MADRAS RAILWAY, 18TH JUNE 1856.

No. 400.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor to annex copies of a correspondence, which has taken place between the Chief Engineer and myself, relative to a change which he proposes to make in the organization of his department.

2. The Chief Engineer, in the infancy of this undertaking, naturally felt desirous that the construction of the line should be conducted as economically as possible, and with this view he devoted much of his time to the supervision of details. So long as the works were confined to the first few districts it was practicable, and perhaps desirable, that he should do so; but circumstances have of late greatly changed, the works are no longer confined to a distance of 60 or 70 miles, but extended over some hundreds, and it is consequently no longer feasible for him to enter so minutely into details as heretofore. It may be a question as to whether it was ever desirable that the Chief Engineer should have identified himself so closely with details of works which might have been conducted by his subordinates. However, the Chief Engineer now proposes to relieve himself from the same, and to appoint a first class Engineer to the executive charge of a division, consisting of three districts, each district to be in charge of a 3rd class Engineer.

3. The Resident Engineer would be in communication with the Chief Engineer, and be responsible for the proper conduct of the works on his division, as also of expenditure and the correctness of accounts.

4. The subordinate Engineers would, in every respect, be his Assistants, and would receive their orders from him.

5. By this arrangement, you will perceive, the Chief Engineer, being relieved from his present onerous duties, would have more time to devote to those questions of great moment appertaining to his department, and wherein the interests of the Company are so deeply involved.

6. Being released from the close petty details of work, he would also more freely express his opinion upon the works of his Engineers, and I am led to hope that business would be conducted in a more agreeable tone.

7. To carry out these views, the Chief Engineer requires an addition to his staff of five 3rd class Engineers, and being convinced that the interests of the Company will be greatly enhanced by the adoption of the plan herein set forth, I beg to submit the subject for your favorable support, and beg that you will move the Government to authorize my applying to the Board of Directors to send out five Engineers, of the 3rd class, accordingly.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 21st June 1856.

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
MADRAS, 2ND JUNE 1856.

No. 111.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. The great increase in the amount of business to be transacted by me, now that nearly all the Directors along the line are in full work, with the prospect of much to be done on the Cuddapah line, induces me to bring to your notice a slight change, which I beg to propose, in our Engineering arrangements.

2. You are aware that each Resident Engineer has charge of 75 miles, being three Districts; one of these District is immediately under his own direct orders, the other two are under Assistant Engineers, and to these the Resident Engineer only pays as much attention as his other heavy duties will allow.

3. In practice, the Resident Engineers are found to have no time whatever for anything save the work of their own special Districts, and take little or no cognizance of the two other Districts, nominally under their orders.

4. The consequence of this that the Assistant Engineers receive no assistance in the management of their work from the Resident Engineers, and the whole of the detail duties of supervision and direction fall upon myself.

5. At present, I exercise personally a direct and minute control over each district separately.

6. The accumulation of business, involved in this, may be more readily conceived than explained.

7. The alteration, which I would propose for the consideration of our Directors, is that the Resident Engineer should be relieved from having charge of the working of any district, that an Assistant Engineer be placed on each of the three districts forming a division, all under the orders of the Resident Engineer.

8. In this way, my labor will, I think, be lightened, and the efficiency of the establishment increased.

9. To carry out this arrangement we shall require five more Assistant Engineers.

10. My only reason for not proposing this arrangement originally was a wish to keep down, as much as possible, the expenses of the establishment, but now that our works are so extensive, it becomes absolutely necessary to make the change.

11. I may remark that, even with the addition now asked for, we shall not have more than half the number of Engineers usually employed on English Railways for the same length of line.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

MADRAS RAILWAY, 4TH JUNE 1856.

No. 421.

To GEORGE B. BRUCE,

Chief Engineer.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 111, dated 2nd instant, and beg to state that I quite concur in the opinion expressed by you, that, so long as the construction on the line was limited to a moderate length, it was quite feasible, and I may add desirable, that you, in conducting such a responsible and novel undertaking in this country, should personally

give your attention to the most minute details in the infancy of the undertaking. But, as you say, circumstances have now materially changed, many hundreds of miles of works are now and about to be under construction, besides which a course for a Railway, through a new line of country, about 300 miles in length, has to occupy a large share of your attention, rendering it quite impracticable that you can continue to devote so much of your time, as formerly, to details, in the various districts upon which the works are now progressing. It is quite apparent that the time has now arrived that you should be relieved of such duties as can, without inconvenience to the interests of the Company, be carried on by your subordinates.

2. You propose that the Resident Engineers should be in charge and superintend the works on the whole length of their respective divisions, with an Assistant Engineer to each district. When the appointment of Sub-Assistant Engineers was established, I believe it was intended that one of that class of Officers should be allotted to each Resident Engineer, with a view to his carrying on the works of the district during the absence of the latter. It may be said, in reply, that there is a difficulty in procuring that class of men in this country, but as your pupils advance in knowledge they will be qualified to fill such appointments; it is, therefore, a question for the Board to decide whether, in the meantime, they will make the addition you require in your Staff, by appointing a few 3rd class Assistant Engineers, or by appointing a few Sub-Assistant Engineers from England.

3. I would beg to suggest that you enter more fully into the subject, viz. as to the manner in which you propose to make use of your Resident Engineers. I presume that it is your intention to make them Executive Officers; that is to say that the Resident Engineer would have the immediate charge of everything connected with his division, under your own control, the Assistant Engineers being entirely under his orders. The whole of the accounts of the division would be sent through the office of the Executive Engineer, who will examine and check them, previously to forwarding them on to you. Indeed that the Resident Engineer be the responsible Officer for the works of his division and the expenditure thereon. How far he might be required to furnish plans and estimates is a matter for your consideration.

4. In making any alteration in existing arrangements, it is desirable that the fullest information should be laid before the Board, and before the Government, to enable them to judge of the propriety of the proposed alterations; you will, I am sure, perceive that something more is necessary than is expressed in your letter under reference.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 16TH JUNE 1856.

No. 123.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. I have the honor to acknowledge the receipt of your's, No. 421.

2. I scarcely know how to explain, as fully and minutely as it may be necessary, the reasons which render it desirable to make the proposed change in our arrangements.

3. The object is to carry out a more complete system of division of labour, and avail ourselves to a greater extent than we have hitherto done of the experience of the Resident Engineers, in assisting and guiding the Assistant Engineers of each district.

4. The Sub-Assistant Engineers were never intended to take the regular and complete charge of a district; indeed they would be found generally speaking not competent for the task.

5. The Pupils are very useful and will become increasingly so, but they are as yet not fit for any higher duties than those which they at present perform.

6. As to sending Sub-Assistant Engineers from England, I think that it is not desirable; want men with as much experience as possible.
7. Under the proposed arrangement, each division of 75 miles will be constructed as an independent line, under the control of a Resident Engineer, who will have one Assistant on each district of 25 miles.
8. The Resident Engineer will be responsible to me, for the proper management of the division; all the accounts and correspondence will pass through their offices.
9. Our establishment will then be one Chief Engineer directing the whole, one Resident Engineer, on each 75 miles, communicating directly with the Chief Engineer, three Assistant Engineers, on each 75 miles, in immediate charge of the works, receiving their orders from and communicating with the Resident Engineer, whose attention will be directed equally to all three districts.
10. My experience is that it is impossible to do justice to the large amount of work involved in the personal direct control of each and all the districts which our present system involves, whilst this would be both practicable and easy with the assistance rendered by the division of labor which I now propose.
11. There is a disadvantage, arising from our present plans, of a less important character, but which may in certain quarters be considered worthy of consideration. Mixed up at present, as I am, with every detail, I am perhaps scarcely in a position to give you so fair and impartial an account of our progress and prospects as you have a right to expect; or, however fair and impartial it may be, it is too apt to be regarded as pleading in self defence.
12. Under the new arrangement, the Resident Engineer takes his proper place and leaves the Chief Engineer more free for that general supervision which is so necessary to secure united and steady action, and at the same time places him in a position more favorable for taking an impartial review of anything connected with works, in the event of references made by the Agent or the Government.

I have, &c.,

(Signed) GEORGE B. BRUCE,
Chief Engineer.

(True copies.)

T. A. JENKINS,
Agent and Manager.

No. 126.

On a letter from the Agent and Manager of the Madras Railway Company No. 400, dated 18th June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent with this letter forwards copies of correspondence, between himself and the Railway Chief Engineer, in which certain changes in the mode of conducting the duties of the Engineer Department are proposed and discussed. The introduction of the change, referred to, would necessitate the employment of five more 3rd Class Engineers on the present trunk line; and the Agent, consequently, after explaining the system of management present and proposed, applies for permission to send home for that additional number of Engineers.

2. The Government have lately sanctioned an application for two more. These were applied for with special reference to the Cuddapah line; but if not required there immediately on arrival, they might be made use of, at once, to enable the Agent to introduce the change of system now contemplated.

3. The subject is fully explained in this correspondence. The object aimed at is, by giving to each division of the line (75 miles) an Engineer to superintend the execution of the works, generally, without having to attend to the details of any portion, to relieve the Chief Engineer from much of the executive duties which he has from the commencement taken upon himself.
4. The extent to which the Chief Engineer has been mixed up with the executive details, throughout the line, has been attended with many serious disadvantages; and one of the many benefits that would result, from the introduction of the change proposed, is plainly stated in the two last paras of Mr. Bruce's letter * No. 123, dated 16th June 1856. to the Agent now forwarded.
5. I have long seen that such a change would be very beneficial, but felt that such matters must be left to the judgment of the Railway Manager and his Chief Engineer.
6. In replying to enquiries, on the subject, lately made by the Superintending Engineer in the Railway Department of Bombay, I said "I am not satisfied that the Railway authorities here have hit off precisely the best system of organization in the construction department. One obvious evil, to be apprehended from the introduction of this system, is the loss of the whole-some check exercised over the contractor, as the executive, by the Engineer or inspecting Officer. This should be remedied, by a proper division of the latter into those two classes. Such has not been the case here. The Chief Engineer has taken up the position of Executive Officer for the whole work, the other Engineers working on their several districts rather as his Assistants than as responsible Executive Officers. This is, I think, an error. It would have been, in my opinion, better had the Chief Engineer confined himself to the duties of inspecting and controlling, laying the entire executive duties and responsibilities upon district Officers."
7. I would recommend that sanction be given to an application for five 3rd class Engineers, with the express view of carrying out these changes. At the same time, I think it might with advantage be pointed out to the Agent that the arrangement will be incomplete, and one very important end will be lost sight of, unless the divisional Engineers are held responsible for the preparation and submission of accounts, as well as for the conduct of the expenditure. The Chief Engineer's Office should become strictly one of supervision and check. The Agent's being, as far as the Railway Company is concerned, the office of final audit.
8. I should anticipate very great advantages from this entire separation of all executive duties from the office of the Chief Engineer.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 21st June 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 231.

Extract from the Minutes of Consultation, dated 15th July 1856.

Read observations by the Consulting Engineer, on a letter from the Agent and Manager of the Railway Company.

(Dated 21st June 1856.)

1. With the foregoing observations the Consulting Engineer submits a correspondence, between the Agent and Chief Engineer of the Railway Company, on the subject of the change of system proposed by the latter in conducting the duties of the Engineer Department, the object of which is to relieve the Chief Engineer entirely from the executive details throughout the line, which, under the present mode of management, have been undertaken by him to an extent which has been attended, it is represented, with many serious disadvantages.

2. It is proposed to appoint a first class Engineer to the executive charge of a division, consisting of 3 districts (75 miles in extent), and to place each district in charge of a 3rd class Engineer. The Resident Engineer to be in communication with the Chief Engineer, and to be

responsible for the proper conduct of the works in his division, and also of the expenditure, and for the correctness of accounts, and the subordinate Engineers to be in every respect his Assistants, and to receive their orders from him.

3. To carry out this arrangement, the Chief Engineer requires an addition to his staff of five 3rd class Engineers, and the Agent, concurring in the adoption of the plan as one calculated to be very beneficial and to promote the interests of the Railway Company, solicits permission to apply to the Board of Directors to send out that number from England.

4. Colonel Pears anticipates very great advantages from the entire separation of all executive duties from the office of the Chief Engineer, and he accordingly recommends the application submitted by the Railway Agent.

5. Under the concurrent opinions expressed on the subject, the Government are pleased to authorize the Agent to apply to the Railway Directors for the additional number of Engineers required to carry out the proposed change, and desire that it may be pointed out to the Agent that, in the contemplated arrangement, the divisional Engineers should be held responsible for the correct preparation and regular submission of accounts, as well as for the conduct of the expenditure.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

PROGRESS FORM, E.

Observations of the Chief Railway Engineer on Progress Report E for November 1855.

During this month, as well as October, the progress has, I regret to say, been considerably interfered with, by sickness. This has been specially felt on Districts 7, 8, and 13.

I referred to the whole matter fully in my letter, No. 337, with its enclosures, and need not now return to it further than to say that arrangements have been made, as far as possible, to expedite the work wherever it is progressing too slowly.

The want of experienced Superintendence, which Government considered unnecessary, is sadly felt and must ever continue to be so.

(Signed) ROBERT PATON,

for Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 5th January 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 16.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

In a Memo. attached to the report of progress (E.) for November, your Chief Engineer observes that the want of experienced Superintendence, which Government considered unnecessary, is sadly felt and must ever continue to be so.

2. I request that you will be good enough to explain, for the information of Government, upon what District, or special works, delay has been hitherto occasioned for the want of experienced Superintendence.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 11th January 1856.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 54.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter, No. 16, dated the 11th instant, calling for explanation relative to an observation, inserted by the Chief Engineer, in the Report of Progress, Form E, for November last, I have the honor to annex a copy of a letter from Mr. Bruce, No. 17, dated 23rd instant, in which he states that, throughout his whole establishment, he feels the want of practical assistance.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 24th January 1856.

Submitted (with observations) for the orders of Government.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 29th January 1856.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 23RD JANUARY 1856.

No. 17.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. In reply to your letter, No. 34, allow me to observe that throughout our whole establishment we feel the want of practical assistance.

2. Our ballasting and waggon work is conducted and managed by men who never in their lives before saw a waggon. Our bridges, with scarcely an exception, are Superintended by men, who, to use a common expression, "do not know a brick from a stone."

3. The Engineers have no practical assistance.

4. To descend to particulars, Mr. Collins has spent the greater part of last month in the personal and detailed Superintendence of a rock cutting, which could be much more economically done by a man on £4 a week. There is no practical man at the Goriattum bridge, none on District 6, where there will be several large bridges. At the Pennar and Muttur bridges, on district 7, we have felt the want severely.

5. On district 8, we have heavy rock cuttings trusted to inexperienced and costly hands.

6. I have no one for the Cauvery bridge.

7. On district 13, we have again heavy rock cuttings, but no experienced assistance.

8. I was myself most anxious to provide subordinate Superintendence in this country, but, after the experience of two years, I gave it up in despair. I am fully alive to the disadvantages, or draw backs, there are in the way of sending to England for men, and have duly weighed all these.

9. We pay as much for inexperience in this country as would provide experience from home; there can be no virtue in ignorance, and we ought to have a moderate number, at least, of men who have been trained and brought up on Railway works, to assist the Engineers.

10. If it will be more satisfactory to Government, I will write to each Engineer, and ask the question "Are you crippled for want of practical assistance?"

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 8.

On Progress Report (Form E) for November 1855, and a letter from the Agent and Manager of the Madras Railway Company, No. 54, dated the 24th January 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The progress reported during the month of November is not generally satisfactory. Mr. Bruce states, in a note, that the want of experienced superintendence is very much felt, and must ever continue to be so. Explanation of this note was called for and given, and is submitted herewith.

Extract Minutes Consultation, Financial (Railway) Department, No. 251, 6th October 1855.

2. The observation had reference to a late order of Government, upon the subject of certain men whom Mr. Bruce wished to get from England.

From Mr. Bruce to Agent, No. 17, dated 23rd January 1856.

3. I shall not trouble Government with many remarks upon this letter. One observation may, however, be made, viz. that the progress chiefly complained of is in "earthwork", and that not only where rock cutting is concerned.

4. The Railway Chief Engineer has to superintend the construction of a line of about 450 miles. To aid him in this, he has an Engineer from England to each district of 25 miles, or under, with several European subordinates under him. He has, in addition thereto, money in abundance at command to purchase, at whatever price may be necessary, the services of native artizans and laborers of all classes.

5. The line is one of the easiest and simplest construction in the world. There is not one tunnel, but one bridge involving any of what is called Engineering difficulties. One line of banks, cuttings, and small drains, and bridges:—the monotony of which is only broken by an occasional large bridge, consisting of a greater number of similar small arches. I believe the "Clavery" is the only river which it has been proposed to cross by a bridge having arches of more than 30 feet span. The works are simple enough, therefore, and cannot require any peculiar skill. Even if they did, it seems to me the amount of Engineering skill already paid for should be ample.

6. I consider that the Agent has abundant means at his disposal for carrying out the works with the aid of native workmen, or others found in the country, quickly and cheaply and well. Whatever may be my opinion, the fact, and the difficulty arising out of it, remains the same. The Railway Company's Chief Engineer asserts that he cannot. I would, therefore, submit that this is a subject upon which the Railway Directors, who do in fact undertake this work through the means of Agents selected by themselves, are the best judges; and I would recommend that it be

referred to them; but it would be well if the Agent placed clearly before them a description of the work—a list of works of masonry to be carried out—with a statement of the number and general qualifications of the Europeans and East Indians at present employed in their Engineer department.

7. The Railway Engineer department began work 2½ years ago, and it has always been, and continues to be, a source of surprise and regret to myself to observe so little improvement, excepting in some of the native pupils and platelayers, in the character and qualifications of the native agency.

8. With respect to Mr. Collins and the rock blasting, I must observe that that Gentleman's district (4) has hitherto made indifferent progress—a circumstance that is in no degree attributable to the small quantity of rock blasting that has been yet taken in hand—that it seemed to me, as I lately rode over it, to be not in want of superintendence but of labor, and that, during much conversation with Mr. Collins, I understood that his native contractors had been very dilatory and unsatisfactory, and that he hoped to succeed better with day laborers.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 29th January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 36.

Extract from the Minutes of Consultation, dated 7th February 1856.

Read the following observations of the Consulting Engineer for Railways.

(Here enter 29th January 1856.)

The Right Honorable the Governor in Council resolves to transmit the above papers to the Honorable the Court of Directors without delay, for communication to the Board of Railway Directors.

2. The Consulting Engineer will, as he proposes, suggest to the Railway Agent the propriety of his placing clearly before the Board—to enable them to come to a decided conclusion on this reference—a description of the work, a list of works of masonry to be carried out, with a statement of the number and general qualifications of the Europeans and East Indians at present employed in the Engineer Department.

3. Meanwhile, the Government do not hesitate to inform the Honorable Court that, in their judgment, the Consulting Engineer is correct in his views; and that good and sufficient native agency is to be procured, if due means be employed.

4. It will be pointed out to the Honorable Court that the Railway Chief Engineer has much larger means at his disposal than any of the Civil Engineers, in the service of Government, who have again and again executed works of greater magnitude than any of those alluded to in Mr. Bruce's letter.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 52.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

The order of Government, of which a copy is now forwarded for your information, has reference to a remark made by Mr. Bruce, on the Progress Report (E) for the month of November last, and to your letter No. 54, of the 24th January 1856.

Para 2. The Government request that you will bring Mr. Bruce's statement to the notice of the Board of Directors, and will place fully and clearly before them the circumstance under which your Engineer department is now placed.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 8th February 1856.

Observations of the Chief Railway Engineer, on Progress Report E for December 1855.

On the first and second districts we have been principally engaged in ballasting the line, which is a matter of no small difficulty with our limited supply of rolling stock, which has also to be employed in loading materials for District 3. The fencing is also progressing, and the gates are ready all fixed.

On the 3rd district, every exertion is being made to complete the Permanent Way as far as Amoor; and now that a supply of bolts and nuts has been received, there will I think be no delay. One or two rock cuttings remain to be completed, but I do not anticipate any difficulty in finishing these, so to be ready as soon as the Permanent Way. Possession of land for the stations, applied for in June, has just been received; the buildings will be commenced immediately.

On District 4, we have been obliged to resort to daily labour, from which I anticipated good result, as time is of more value than money.

District 5. Here we have got possession of no land, and look anxiously for permission to begin the Bridge over the Palar river.

District 6. A fair beginning has been made on so much of the line as we have got possession of the land.

Districts 7 and 8. Here our chief difficulty is the prevalence of fever, which frequently reduces our Superintendence far below the standard of efficiency, in spite of every special arrangement we are able to make. On these districts such attacks are the more serious, as all is done by daily labour.

On District 7, the price of earthwork has been considerably reduced, though the quantity is not all I could wish for.

Districts 9 and 11. We have not got possession of any land.

On District 13, all is going on well; we hope to begin laying the rails which have arrived at Beypore.

District 14. Here we have now got possession of land for a few miles of line, and I hope, in some measure, to make up for lost time.

District 15, 16 and 17, most anxious to begin, but have got possession of no land.

(Signed) ROBERT PATON,

for Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Chief Engineer's Office, 31st January 1856.

No. 22.

On Progress Report (E) for the month of December 1855.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The amount of work done, during the month, is not satisfactory.
2. The amount of earthwork thrown up on districts 7 and 8, which have been now long in hand, is very small.
3. The same must be said of the masonry on the same districts. Mr. Bruce attributes this to the prevalence of fever.
4. With respect to district 8, Mr. Bruce observes that the land required for stations, applied for in June, has just been received. The Engineers having been for some time at work on the line, the Collector probably overlooked the application for a while. The Railway authorities, however, have not been urgent regarding the ground, not having, for some time, materials ready to begin with the stations.
5. In regard to districts 5, 6, 9, 11, 14, 15, 16 and 17, Mr. Bruce's observations will probably lead Government to suppose that the work is chiefly retarded by delay in getting possession of the land.
6. The accompanying statement will show how the work has advanced, hitherto, from stage to stage—the 1st column showing the day of the 1st monthly pay bill drawn by the Engineer and establishment employed in the district in question.
7. It will be seen that the surveys, for nearly the whole of the districts referred to, have been received in the Government Office since the 1st of December, and many since the 1st of January of the present year.
8. The Collectors have been, generally, remarkably prompt in giving permission to proceed with the work.
9. There has been some little delay lately in Coimbatore and in Malabar; but while, as I believe, the Collectors of those districts are doing their best to arrange as soon as possible for the transfer of the ground, I cannot consider that the delay has yet been such, as would justify a hasty or arbitrary settlement of a question of so much importance to the interests and convenience of the people whose property is affected.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 15th February 1856.

Statement showing the traces received from the Agent and Manager of the Madras Railway Company, and disposed of by the Consulting Engineer for Railways.

District.	When commenced work.	Traces when received.	Traces when sent to the Collectors.	Replies of Collectors.	Date of instructions to the Agent to proceed.	Remarks.
No. 3. Nov. 1853.....	Trace of Section, 21st March 1855.....					
	* Stations, 18th June 1855.....					
No. 4. June 1854.....	Section 1, 26th May 1855.....					
	Section 2, 17th December 1855.....					
No. 5. June 1854.....	From 1st to 6th mile, 20th Dec. 1855.					
	From 6th to 12th mile, 18th Jan. 1856.					
	From 18th to 24th mile, 11th Feb. 1856.					
No. 6. June 1854.....	From 1st to 6th mile, 15th Oct. 1855.					
	† From 6th mile to 11th mile, 14th ch. 15th Jan. 1856.....					
No. 7. Dec. 1853.....	Section 1, 6th March 1855.....					
	Section 2, 26th May 1855.....					
No. 8. Dec. 1853.....	Section 1, 6th March 1855.....					
	From 12th to 16th mile, 17th Oct. 1855.					
No. 9. April 1853.....	From 1st to 6th mile, 18th Jan. 1856.					
	From 6th to 12th mile, 11th Feb. 1856.					
No. 11. July 1855.....	From 1st to 6th mile, 6th Dec. 1855.					
No. 12. March 1854.....	Section 1, 2nd Feb. 1855.....					
	Section 2, 26th Feb. 1855.....					
	From 17th to 25 miles, 17th Aug. 1855.					

No. 14. Dec. 1853.....	From 6th to 12th mile, 7th Sep. 1855.	8th Sep. 1855.	17th Dec. 1855.			
	From 12th to 25th mile, 24th Oct. 1855.	31st Oct. 1855.	17th Dec. 1855.			
No. 15. Dec. 1853.....	From 1st to 6th mile, 5th Dec. 1855.	8th Dec. 1855.	Reply not received.			
No. 16. Dec. 1854.....	Section 1, 12th Dec. 1855.	13th Dec. 1855.	Do.			
	Section 1, from 1st to 10th mile, 19th Dec. 1855.	20th Dec. 1855.	Do.			
No. 17. Dec. 1854.....	From 10th to 19th mile, 23 Jan. 1856.	7th Jan. 1856.	Do.			
	From 1st to 9th mile, 2nd Jan. 1856.	7th Jan. 1856.	Do.			

T. T. PEARSON,

Madras, 18th February 1856.

Consulting Engineer for Railways.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 67.

Extract from the Minutes of Consultation, dated 26th February 1856.

Read the following observations from the Consulting Engineer for Railways.

(Here enter 15th February 1856, No. 22.)

In submitting the progress report of the Madras Railway for the month of December last, the Consulting Engineer observes that it is not satisfactory—the amount of earthwork and masonry executed in many districts is very small.

2. In several districts, the slow progress made seems to be ascribed, by the Railway Engineer, to the delay that has occurred in getting possession of the land.

3. It is shown, in the statement submitted by Colonel Pears, that, in most instances, this delay proceeded from the Railway authorities themselves—the tracings, in many cases, not having been sent in to his office until towards the end of last year, or even later.

Madras.
Chingleput.
North Arcot.
Salem.
Coimbatore.
Malabar.

4. In connection with this subject, the Right Honorable the Governor in Council likewise resolves to call upon the several Collectors, as per margin, whose provinces are traversed by the Rail, to report, at an early date, what claims to compensation for lands, or buildings, in their several districts, taken up on account of the Railway, either for the line, stations, or other purposes, are still undisposed of—what causes have retarded their adjustment—and when they may be expected to be settled.

(True Extract.)

(Signed) T. PYCROFT,

*Chief Secretary.**Observations of the Chief Railway Engineer, on Progress Report E, for January 1856.*

The works, generally, throughout the whole line have suffered by the Poongul feast.

There was almost complete cessation from labour for a fortnight.

The platelaying on the third district advanced as well as the circumstance above named would allow, but the month of February will show much more rapid progress, all the earthwork which remains to be done is rock, but there is very little of it, and there is no obstacle in the way of the rails being laid as fast as we could find men to do it.

District 4 is decidedly behind, owing to the failure of the contractors, but now that the work is done by the day, I expect much more rapid progress.

District 6. The earthwork, on the six miles of which we have got possession, is going on most favorably. The masonry is rather behind.

The same may be said of district 7, though there is room for improvement in the quantity of earthwork as well as masonry. The number of coolies was rapidly on the increase when I visited the district in February.

District 8. Here the only earthwork not completed is in the jungle, and all very hard material. Large gangs are at work, doing as much as possibly can be done.

There are several miles on district 7 and 8 ready for the rails, which I propose to lead up to them during the dry weather.

District 13. There is no earthwork in hand here excepting in the jungle, and there we cannot, at this season, get labour in consequence of fever.

The masonry is going on well, but I hope it will be accelerated, for which arrangements have been made.

Rails are being led from Beypoor—both for the purpose of laying the line and also assisting in taking out the cuttings in the jungle.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras Railway, Chief Engineer's Office,
Camp Caungapally, 6th March 1856.

No. 46.

On Report of Progress (E) for January 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The progress, exhibited in this report, continues still to be unsatisfactory. The total amount of earthwork, executed on 6 districts during the month, is under 1,20,000 yards, which is at the rate of about 800 yards the mile. At this rate, and assuming the average amount to be 50,000 yards, the earthwork alone would occupy 5 years from its commencement.

2. The progress in masonry is equally unsatisfactory. On 4 districts, wherein the work has been for a considerable time in hand, the amount of work done is 1,738 yards or about 17 ⁴/₁₀ yards per mile.

3. On the first two districts*, 50 miles, the quantity actually executed has been about 36,500 yards, or 730 yards per mile. If this be taken as an average amount, it will be seen that the present rate of progress on the districts in question is not satisfactory.

4. The small quantity of work executed during the month in question is in some measure accounted for by reference to the Poongul feast.

T. T. PEARS,

Madras, 29th March 1856.

Consulting Engineer for Railways.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 60.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

Sir,

I have the honor to annex a copy of a letter which I have received from the Chief Railway Engineer, in which he reports that he anticipates having the line as far as Amoor, 65 miles, completed by the 15th of March next.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 28th January 1856.

Submitted (with observations) for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 30th January 1856.

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MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
12TH JANUARY 1856.

No. 7.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I beg to propose that arrangements be made to open the Railway as far as Amoor, which is about 2½ miles from Arcot.

2. I think this will secure all the advantages we should derive from opening to Trivellum, and we could effect it at an earlier date than the opening to the latter station.

3. We can, I think, open to Amoor, on the 15th of March.

4. All the additional works required at Amoor, in consequence of its being for a time the Terminus, will be the fixing of an Engine turn table, an Engine pit, and covering for one Engine, for which I will submit an estimate if the suggestion meets your approval and Colonel Pears's.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 9.

On a letter from the Agent and Manager of the Madras Railway Company, No. 60, dated 28th January 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. With this letter the Agent forwards a report from the Chief Engineer, to the effect that he thinks he will be able to throw the line open as far as Amoor, 65 miles, on the 15th March.

2. I have lately inspected that portion of the line, and fear Mr. Bruce is too sanguine. It would at all events require that progress should be, during the next six weeks, much better than it has been lately, to ensure the completion of the line so far by the date he mentions.

3. The Agent has been requested to submit estimates for the works mentioned in the concluding para. of Mr. Bruce's letter.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 30th January 1856.

No. 34.

FINANCIAL (RAILWAY) DEPARTMENT

Extract from the Minutes of Consultation, dated 7th February 1856.

Read again observations of the Consulting Engineer for Railways, dated 30th January 1856.

In his letter of the 12th ultimo, sent up by Colonel Pears with the above observations, the Chief Railway Engineer expresses his opinion that the Railway may be opened to Amoor, about 2½ miles from Arcot, by the 15th March.

2. Colonel Pears thinks that, in this anticipation, Mr. Bruce is too sanguine.

[97]

3. The Right Honorable the Governor in Council remarks that it was originally calculated that the line would be opened to Arcot by the commencement of the present year, and it appears, from a recent Despatch, that the Honorable the Court of Directors were fully under the impression that this would have been done.

4. The Court will naturally expect clear explanation as to the causes which have rendered the progress of the work slower than they had been led to expect. The Governor in Council therefore resolves to call upon the Consulting Engineer to state precisely, for communication to the Honorable Court, what have been the obstructions which have prevented the opening of the line, in the beginning of the past month, and why it cannot be opened, as far as Trivellum, on the 15th proximo.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 150.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to Extract from Minutes of Consultation, No. 34, dated the 7th of February, calling for explanation as to the causes which have rendered the progress of the works, between Madras and Arcot, slower than the Government were led to expect, and why the line cannot be opened, as far as Trivellum, on the 15th of March, I have the honor to state that I called upon the Chief Railway Engineer to submit such explanations as he might have to offer, for the information of the Government.

2. I beg to annex copies of his replies; they are dated, you will observe, in February last; but the information called for by you, in your letter, No. 55, dated the 8th of February, to the effect that "to make this explanation as complete and satisfactory as possible, it will be well if you could inform the Government of the average number of persons that have been employed in the several departments of work in district III," I have not yet received. I have therefore again applied for it.

3. Mr. Bruce imputes the delay, in the completion of the line, to the non-receipt of certain Permanent Way materials from England, such as Fishing-Plates, Bolts and Nuts, &c. &c. It is true that there was delay, in the arrival of a Ship with Bolts and Nuts, caused, I am informed, by the default of contractors, and likewise in consequence of the vessel having made a long voyage: she arrived towards the latter part of the month of December.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 15th March 1856.

Submitted (with observations) for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th March 1856.

A I

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
CAMP MULLIAPOOKAM, 12TH FEBRUARY 1856.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of the Minutes of Consultation, No. 27, and beg to assure you that every exertion shall be made, or rather is being made, to open the line at the time named by you.

2. I beg particularly that you will oblige me by drawing the attention of the Government (in relation to that paragraph of their Minute, where it is stated that the Honorable Court and our own Directors believe the line to be already opened) to the fact that it was only in January last that a supply of bolts and nuts, for the rails, arrived from England, and that, at that time, we had been waiting some months for these materials.

3. I beg to lay special stress on the fact that, for want of materials, it was a physical impossibility to prepare the line for opening at the time the Board expected we should open it.

4. At the same time, I would guard myself against even the appearance of ascribing blame to any one, as I know our Directors have used every exertion to forward materials, but the Government will at once see that, without materials, your Engineers could not finish the line.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
CAMP SALEM, 15TH FEBRUARY 1856.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 102, with the Minutes of Consultation, and the letter of the Government Engineer, regarding the delay in opening the line of Railway.

2. Already I have anticipated the enquiries of Government in a letter, I had the honor to address to you a few days ago, in which I explained that the want of fishing plates and bolts rendered the finishing of the line a physical impossibility.

3. We are doing now all that lies in our power, to make up for the loss of time to which we have been subjected; but as we cannot lay more than a certain length of rails in a day, there is necessarily a limit to our progress, since the whole of the platelaying on district 3 has been driven to the last, instead of being carried on regularly along with the rest of the work.

4. This is the main reason the line is not ready.

5. There is a rock cutting, at Cotpank, which has given us a great deal of trouble, and obliged us to cast forward materials which might otherwise have been carried straight along by rails; but this was only a minor hinderance.

6. The reason why I proposed to open to Amoor, rather than Trivellum, was because being a few miles shorter we shall get there first, and it appears to me to be as good a place to open to as Trivellum, since it is so near Arcot.

7. Again, if we open to Trivellum, we must have a temporary station, which will be a heavy expense, and it would only be available for a very short time, as we shall be across the river almost as soon as we get to the river.

6. In short, I proposed to open to Amoor instead of Trivellum, because it would be a saving of time and money, be more advantageous to the Company, as advantageous to the public.

9. Mr. Paton will forward to you, along with this letter, a statement showing the average number of people employed, on each description of labour, during the last six months.

10. It must be borne in mind that the work, on district 3, did not admit of large bodies of men being employed during the last six months, as the bulk of the work was finished before then.

I have, &c.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copies.)

T. A. JENKINS,

Agent and Manager.

No. 45.

On a letter from the Agent and Manager of the Madras Railway Company, No. 105, dated the 15th March 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. In obedience to orders, conveyed in an Extract from Minutes of Consultation, No. 34, dated 7th February 1856, the Agent forwards explanation regarding the delay that has occurred, in opening the Railway to public traffic, and the proposal to open to Arcot, in the first instance, instead of Trivellum.

2. The explanation is given in two letters from the Chief Engineer of the Railway. The delay is therein stated to be attributable mainly to the non-receipt of certain Permanent Way materials from England—bolts and nuts.

3. I requested that a statement might be prepared, showing the number of people that have been employed, upon the 3rd (Arcot) District, since August last. This statement has not yet been furnished.

4. From a statement, which I have obtained from the Agent, it would appear that, as far as the supply of bolts and nuts are concerned, the work might have been, if not actually completed to Arcot, much further advanced than it is. The works which required completion when I was last up the line, in February, were some rock cuttings, small bridges, dressing and turfing slopes, fences, stations, gates, as well as a portion of the Permanent Way.

5. 265 casks of bolts and nuts had been received up to the end of December last, being enough for about 55 miles; 78 casks were landed in January, being sufficient for 15 miles more. The Agent's letter forwarding a report from Mr. Bruce, to the effect that the line would be opened on the 15th March, was dated the 28th January. There appears to have been unaccountable difficulty in procuring labor, in the 3rd (Arcot) District, of late. It would not have been possible to complete the line without bolts and nuts; but rock cuttings might have been got out, materials, as sleepers and rails, might have been led into position, and everything in fact done but the fishing.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th March 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 102.

Extract from the Minutes of Consultation, dated 8th April 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Company.

(Here enter 27th and 29th March 1856.)

1. The Right Honorable the Governor in Council considers the explanation, laid before him with the Consulting Engineer's observations of the 27th ultimo, regarding the delay that has occurred in opening the Railway to public traffic, and the proposal to open the line to Arcot, in the first instance, instead of Triyellum, to be very unsatisfactory.

2. In his letter of the 12th February last, the Railway Chief Engineer endeavors to show that the delay, in the opening of the line, was attributable to the absence of bolts and nuts till January last. In his letter of 15th February, in which he speaks of having anticipated the enquiries of Government, by his letter of the 12th, he admits delay in platelaying, and incidentally, in para 5, refers to a rock cutting which had given much trouble. But by the Consulting Engineer's observations, the Government learn that, up to the end of December, bolts and nuts for 55 miles had been received, and in January for 15 miles more; and it appears that, had these bolts and nuts been received at an earlier date, the line could not have been opened; for the Permanent Way was incomplete in other respects, the slopes of the banks were unfinished, small bridges were wanting, station houses were not constructed, gates were not put up, and lastly there were rock cuttings to be effected.

3. Thus then it is clear that the want of bolts and nuts had nothing to do with the delay. The real cause being that, in no one department appertaining to the Railway Chief Engineer, were the works sufficiently advanced to permit of the line being opened.

4. Ordered that the previous* correspond-
ence and that now submitted, together with the foregoing remarks, be brought to the notice of the Honorable the Court of Directors by the next mail, and that the Progress Report, for the month of January last, with the Consulting Engineer's observations thereon, be forwarded to them at the same time.

(True Extract.)

(Signed) T. PYCROFT.

Chief Secretary.

MADRAS RAILWAY, 7TH JULY 1856.

No. 444.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

At the especial request of the Chief Engineer of this Company, I have the honor to annex a copy of a letter from that Gentleman, No. 124, dated the 19th ultimo, affording explanation relative to the work done on the line during the month of January last.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 9th July 1856.

T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 19TH JUNE 1856.

No. 124.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have this day received a copy of the remarks of the Government Consulting Engineer, on the progress of our works during the month of January last.

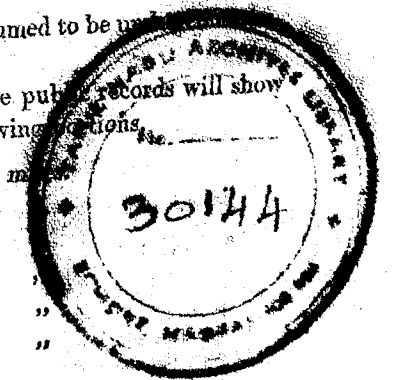
2. In my letter, dated 15th May 1856, No. 83, asking to be favored with a copy of these remarks, the substance of which I saw in the public newspapers, I stated that the conclusions drawn appeared to be based on erroneous data; this, I think, I shall now be able to substantiate.

3. The first statement made in the report under review is as follows. "The total amount of earthwork executed, on six districts, during the month, is under 120,000 cubic yards, which is at the rate of 800 cubic yards per mile; at this rate, assuming the average amount per mile to be 50,000 cubic yards, the earthwork alone would occupy five years from its commencement."

4. You will observe that, in the above para, the length of line assumed to be under construction was 9 times 25 miles or 150 miles in all.

5. The districts alluded to were Nos. 4, 6, 7, 8, 13, and 14. The public records will show that of these districts we have only sanction to proceed with the following sections.

District 4.....	12½ miles
" 6.....	6 "
" 7.....	25 "
" 8.....	22 "
" 13.....	18 "
" 14.....	8 "
Total.....	91½ "



being ninety one and a half miles, instead of one hundred and fifty, as assumed in the report.

6. The quantity executed being 120,000 yards, divided over 91½ miles, we have 1,300 cubic yards per mile, instead of 800 cubic yards.

Assuming 50,000 cubic yards per mile to be a correct estimate of the work to be done, we have $\frac{120,000}{1,300} = 38.4$ months required for the completion of the work, instead of 5 years.

7. The above calculations are based on Colonel Pears's own data, with the exception of the length of line under construction, which was incorrectly stated.

8. Two districts, on which earthwork was done, were omitted by Colonel Pears; one properly so, the district itself (No. 2) being completed, the other (district 3) shows 65,000 cubic yards done, though the work there also was nearly completed.

9. Adding 65,000 to 120,000 we have the work done on seven districts equal to 185,000 cubic yards; dividing this by the length, which now becomes 116½ miles, we have 1587 cubic yards per mile executed; dividing the total work to be done by this amount we have $\frac{120,000}{1,587} = 31$ months, the line required to complete it instead of 5 years.

10. It would be easy for me to show that even this should be materially reduced, because district 3 being nearly finished, the work was only going on over 12 miles.

District 8 had finished 10 miles.

District 13..... 9 miles.

11. Making these deductions leaves the actual time required for the construction, according to the rate of progress in January, at a trifle more than 22 months.

12. I do not press this last calculation, though strictly correct, because I do not wish to base my remarks on anything save facts, as well known to you and to the Government as to myself.

R
1415-211 x m56
m57

13. Regarding the masonry, I would only observe that Colonel Pears takes in his calculation four districts—as follows.

District 4 work done.....	45½ cubic yards.
" 7.....	250 "
" 8.....	784 "
" 13.....	658½ "

but misses out

District 3, where the work done was 1,202½ yards. Supplying this omission, we have a total of 2,940 cubic yards done in the month.

14. The total length of line, in these districts, for which we have had sanction, was 102 miles—giving 28.8 yards the work done per mile.

15. I do not say whether this is "satisfactory", or "unsatisfactory", but would simply observe that it is upwards of 60 per cent more than the "17½ yards per mile", stated as the work done in the remarks under review.

16. In para 4, it is stated that the "small quantity of work executed during the month in question is in some measure accounted for by reference to the Poongul feast."

17. I was in Camp nearly the whole of that month, and know that what I stated in the January report was strictly and literally true, viz., "there was almost a complete cessation of labour for a fortnight."

18. Work people were not to be had for any purpose.

19. I will not add a single comment, but beg that this letter may be brought prominently before our Board of Directors, and that it may also be allowed a place in the same public newspaper in which the remarks referred to appeared.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 145.

On a letter from the Agent and Manager of the Madras Railway Company, No. 444, dated 7th July 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards a letter, from the Chief Engineer of the Railway, having reference to my report, No. 46, of the 29th March last, commenting on the progress made (according to the report E) during the month of January last.

2. Mr. Bruce disputes some of the statements made in that report, and considers that I have done the Officers of the Railway Company injustice. I should be sorry if I should have done so even through inadvertence; but I see no reason to modify, in any respect, the views then expressed by me.

3. My report was to the following effect, that the progress exhibited was still unsatisfactory; that, in 6 districts named, there were 120,000 yards of earthwork executed; that the progress in masonry was equally unsatisfactory, that in 4 districts the work done was 1,738 yards; and lastly, that the small quantity of work done during the month was, in some measure, accounted for by a reference to the Poongul feast.

4. Mr. Bruce's observations upon the same month's progress were.

1st. That the works generally have suffered from the Poongul feast, "there was almost complete cessation from labor for a fortnight."

2ndly. District 4 is decidedly behind District 6. "Masonry rather behind."

3rdly. District 7, room for improvement in the quantity of earthwork as well as of masonry.

4thly. District 13 cannot get labor in consequence of fever. Arrangements have been made for accelerating the masonry.

5. Mr. Bruce's mode of meeting my statements is by assuming that I "stated incorrectly" the length of line under construction. I did not state at all; I took 6 districts where the Engineers were at work, and showed the average work done in each. Each district is one charge; and the quantity of work done at this stage depends not so much upon the number of miles upon which the Engineer has actually broken ground, as upon the arrangements made to collect a large number of workmen.

6. It is quite true that, on many of these districts, the Engineers had, owing to delay in furnishing the preliminary surveys or in making out the ground, not yet got possession of the whole districts; but this was no excuse for the small quantity of work done. In proof of this, we have the following facts.

7. On District 4, there were 76,594 yards of earthwork reported in November, when the Engineer was at work on one section only. On the same district in January, there were only 13,459 yards executed; since then, up to the latest report, 30th of April, though the land on the 2nd section was made over in the end of January, the monthly progress has never reached that above shown in November.

8. Further Mr. Bruce, para 9, adds the work done on District 3 to raise the average done on the other districts. District 3 was not called in question by me. It passed, as the amount of work done appeared to demand, without special notice one way or the other, i. e. as being satisfactory though nothing extraordinary.

9. In para 13, Mr. Bruce does exactly the same with the masonry, the progress of which, on particular districts, I remarked upon. He adds that on district 3—chiefly the Poiney bridge—I presume, to increase the average of the whole.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th July 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 246.

Extract from the Minutes of Consultation, dated 26th July 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 9th July 1856.)

The Right Honorable the Governor in Council considers the explanation, afforded by the Consulting Engineer, of his remarks on the Progress report for January 1856, the justness of which is questioned by the Chief Railway Engineer, to be quite satisfactory.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

Observations of the Chief Railway Engineer on Progress Report E, for February 1856.

During the month of February, the bridges over the Goriattum and Palar rivers were commenced. The work done on District No. 4 was confined to Section 1, and that on District No. 5 was a mere beginning on the first six miles.

On District No. 6, the works are going on with great vigour; the amount shown in this report was executed on the first six miles, by daily labour.

The bridges over the Mookeremputty and Palar rivers were begun this month, with a fair prospect of success; we are experiencing greater difficulty, in procuring labour on this district, than I was prepared to expect, and our staff here, as on district 8, is frequently disabled by fever.

The earthwork on district No. 8 is less than it would have been, but for the difficulty in getting Smiths into the jungle to repair the blasting tools. This difficulty is not insurmountable, but it has greatly crippled our proceedings.

District No. 11 has made a good beginning.

District No. 13 is going on as well as the circumstances of the season will allow.

District No. 14 has begun favorably at present; there is abundance of labour, which we are making the most of while it is at our disposal. Brick making, which had been somewhat neglected, is going on well.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 16th April 1856.

Observations of the Chief Railway Engineer on Progress Report E, for April 1856.

1. There has been, on the whole, an improvement in the progress during April as compared with the previous month.

2. We were disappointed to find the supply of labour on districts 7 and 8 fall off, instead of increase, in the month of April, as we anticipated.

3. Districts 6 and 14 made the most marked advancement during the month, though this is not so manifest from the report as it was in reality.

4. As regards district 8, I have already explained that we are only working among the rocks of Moroor Pass, the rest being completed, and have experienced great difficulty in getting Smiths to repair the tools, in consequence of the fever to which the locality is subject.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 5th June 1856.

Observations of the Chief Railway Engineer, on Progress Report E, for May 1856.

There has been a decided improvement in the progress of the work as a whole, though on the Western Coast, owing to the monsoon, there has been less done.

The last arch of the Poiney bridge was keyed during the month of May.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 11th July 1856.

No. 160.

On Report of Progress (Form E), for May 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

There is a marked improvement in the progress reported during the month, referred to upon some portion of the line. The advance made on district 6 is very marked. There is continued improvement on district 14.

2. On district 4, one of special interest at present, as that which is next to be thrown open to public traffic, the progress reported in earthwork is indifferent, and masonry good.

3. With the exception of this, and district 13, the masonry throughout the line does not appear to have made very considerable progress. The amount of work executed upon the terminal station at Madras as well as on the minor stations on the three first districts appears to have been small.

4. Government will observe with satisfaction that on the Poiney bridge, the last of 56 arches was keyed during the month.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 12th August 1856.

Observations of the Chief Railway Engineer, on Progress Report E, for June 1856.

The return of earthwork executed on the various districts on the line of Railway during June, considerably exceeds that for the previous month excepting on those districts situated in Malabar where, of course, the monsoon has retarded operations to a great extent.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

No. 182.

On Progress Report (Form E), for the month of June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

This report shows considerable improvement in the amount of earthwork executed on the line generally during the month; which amounts to 475,282 cubic yards. There is improvement on the 4th district, a fair amount of work having been executed on that as well as on the 6th district.

The amount of masonry work executed is not remarkable.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 22nd September 1856.

Observation of the Chief Railway Engineer, on Progress Report E for August 1856.

The earthwork continues to improve, but in the Malabar district the monsoon was still, during August, an obstacle to the progress of the work.

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 30th September 1856.

No. 220.

On Report of Progress E, for August 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

There is a marked improvement in the amount of earthwork shown in this report, as executed in district IV; viz. 1,12,547 yards. The earthwork generally is on the increase.

2. The progress in works of masonry has been probably interfered with in some measure by the rains. In this department of work the progress in district IV (Vellore) is not satisfactory.

3. The work done to the stations, during the month in question, was very small.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th October 1856.

Observations of the Chief Railway Engineer, on Progress Report E, for September 1856.

The earthwork and masonry done during the present month, is much the same in August, less earthwork has been done on the east end of the line, but this has been compensated by an increased amount on the Malabar Coast.

On districts Nos. 6, 7 and 8 the brick work and masonry was greatly retarded by the continued floods.

(Signed) ALEX. BEATTIE,

Acting Chief Engineer.

(Signed) T. A. JENKINS,

Agent and Manager.

Madras, 30th October 1856.

RAILWAY DEPARTMENT.

No. 677.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

In the Progress Report (Form E) for September 1856, received yesterday, I observe that the quantities of estimates which have not yet received the sanction of Government, have been entered therein, I have the honor therefore, under the orders of Government, to request that in the future reports these quantities be not entered, but only those of estimates which have been sanctioned by Government.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

COURSE OF LINE OF RAILWAY ON DISTRICT X.

MADRAS RAILWAY, 7TH APRIL 1856.

No. 197.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter No. 81, dated 26th February last, calling for a report in respect to the ground on each side of the line in district X, with a view to obtaining a better gradient, I have the honor to annex a copy of a letter from the Chief Engineer, dated the 24th ultimo, together with its enclosure from the Resident Engineer, Mr. Smart, by which it appears that the ground on either side of the line has been examined, but, that no favorable result appears to have been obtained. The trial sections which have been taken will be forwarded when ready.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 5th November 1856.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
CAMP PALGHAT, 24TH MARCH 1856.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I duly received your letter, No. 166.

The survey of district 10 was sent to you when I was out in Camp, or I should have accompanied it with remarks regarding the summit to be overcome.

When on the ground about a month ago, I desired Mr. Bryce to try another deviation, by which I thought the difficulty might, in some measure at least, be overcome: this has not turned out so satisfactory as I expected, and has accordingly been abandoned.

The letter which I have received from Mr. Smart, a copy of which is enclosed, will shew you the number of trials which have been taken, both to the north and to the south of the adopted line.

The trial taken near to Tengeracottah Hill was abandoned, because it was so unfavorable, and though we have not taken any trials to the North of Sunkrydroog, Mr. Smart speaks decidedly regarding that line of country presenting very formidable obstacles. I cannot speak positively on this point from my own observation, for though I looked carefully over the ground, which appeared feasible, the north of Sunkrydroog is so much out of the general direction of the line, that I did not observe it minutely. This shall have my attention in a few days, when on district 10.

We do propose to deviate the last five miles of district 9, but it is to take it rather more towards the north, which is a great improvement on the old line. The survey and section of this deviation has doubtless been sent to you.

The other trial sections which have been taken shall be forwarded when ready.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

RESIDENT ENGINEER'S OFFICE,
CAUVERY DIVISION, MADRAS RAILWAY,
21st MARCH 1856.

DEAR SIR,

I have to acknowledge the receipt of your letter, dated Calicut, 3rd March 1856, enclosing copies of letters from Colonel Pears and Major Jenkins.

It was not without a very extensive and protracted examination of the country through which the Cauvery Division extends, that I selected the route, the plans of which, for districts 10 and 11, have been submitted; a mere glance at the country north of the Sunkrydroog satisfied me that it was unsuited to a line of Railway, the portion between Maitoor and Sunkrydroog presenting a series of granite ridges and peaks, almost insurmountable; I therefore confined my attention to the ground South of the hill last named, viewing it in connection with the extension of the line to Coimbatore. I also made a point of crossing the Cauvery as far to the North as was compatible with the nature of the adjacent ground.

I think there can be no doubt as to the course the line should pursue in districts 11 and 12; of these we consider Salem district and the Cauvery crossing fixed points—I have no hesitation in saying that Mr. Bryce has adopted the very best route that could be obtained between those points.

Mr. Bryce, although his district is only $23\frac{1}{2}$ miles in length, has made upwards of 50 miles of trial Section.

His first trial was made over a line bearing considerably to the South of that shown on the plan forwarded to your Office, being nearly in the direction suggested by Colonel Pears; if continued, it would have passed one or one and a half mile north of Trichigode; this trial extended as far as Thooticurradoo, (marked on Trigonometrical map) and would have passed immediately north of that hill.

It was abandoned owing to the great difficulties it presented. Another line was attempted a little more to the North still, which also turned out very unfavorably. I have requested Mr. Bryce to furnish me with the result of these levels, which I will send you.

The next trial is that which has been sent in, and is the best that can be obtained, supposing it to form a junction with district 9, where Mr. Lovell stopped his survey. The only improvement I thought could be made on this was, by changing the last six miles of Mr. Lovell's line, so as to cross the Pund River nearer to its source. With Mr. Beattie's concurrence, I requested Mr. Bryce to try this: it proved successful, and copies of the plans and Sections (previously sent to Madras) were seen and approved of by you when I met you at McDonald's choultry on the 19th February last.

At that time you requested Mr. Bryce to make a Section of a deviation, North of the Salem and Coimbatore Road, and crossing it near Valloor, Caudoor, the object being to obtain a lower crossing of the ridge shown on plan at $5\frac{1}{2}$ miles. Mr. Bryce did so, and sent me the result, which not being satisfactory, I conceived that every precaution had been taken to secure the best line.

I am, &c.,

(Signed) W. G. SMART,
Assistant Resident Engineer.

(True Copy.)

(Signed) R. PATON,
for Chief Engineer.

(True Copies.)

(Signed) T. A. JENKINS,
Agent and Manager.

To GEORGE B. BRUCE, Esq.,
Chief Engineer.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 81.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 112, dated the 22nd instant, forwarding tracing of a trial survey and section on district 10. The length of line, of which section is here shown, is 20 miles 18 chains and 15 feet.

The ground appears to be unfavorable and the gradients bad.

Not being accompanied by any report from your Chief Engineer, Government can form no opinion, from your letter, as to the extent to which the country may have been searched for a more favorable line. I have to request you will be good enough to call for, and submit, a full report upon the subject, and will point out to your Chief Engineer the desirableness of having the line North of Senkerrydroog looked at, if it has not been already done, and also another line somewhat South of that on which the section has been now taken. It appears from the map which, however, exhibits the features of the country very imperfectly, that the cluster of hills, of which Sunkerrydroog is the most conspicuous, constitutes a centre from which the ground falls in all directions; and the base of which is broken up into many spurs or ridges, which, sloping in every direction towards the principal streams, constitute the minor water-sheds of the adjacent country. The line now surveyed, for district 10, appears to cross one of these ridges, at about $5\frac{1}{2}$ miles, with a bearing rather towards than away from the highest ground. In this distance it rises about 200 feet, to fall again towards the Cauvery. It appears probable, therefore, that by carrying the line, from about the 20th mile in Mr. Lovell's survey (No. 9), considerably to the South of the line shown on this Section, so as to pass not far North of Trichengode, a better summit would be obtained, though it is impossible to say, without a survey, what the features might be found in detail.

Your Chief Engineer will probably have visited the locality by this time. I request that Government may be favored with an early report, together with such other trials as may have been taken.

I have, &c.,

*(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 26th February 1856.

MADRAS RAILWAY, 28th MAY 1856.

No. 327.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 81, dated 26th February last, I have the honor to forward, herewith, copies of plans and sections made by Mr. Bryce, Assistant Engineer, in charge of District X, and I annex a copy of a letter from the Chief Railway Engineer, No. 95, dated the 23rd instant, in explanation of the features of the country and the proposed course of the line of Railway, in the vicinity of Senkerrydroog.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 5th November 1856.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 23RD MAY 1856.

No. 95.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I forward herewith, for submission to Government, copies of plans and sections, made by Mr. Bryce on district 10.

2. They are those which are referred to in Mr. Smart's letter of 21st March.

3. Since I had the honor of forwarding that letter, I have, myself, accompanied by Mr. Smart and Mr. Bryce, examined the ground over which these trials were made, and also that to the North of Senkerrydroog; and my own observations corroborate the statements made in the letter referred to.

4. The observations of Colonel Pears, with regard to the general features of the country, are very just, and his conclusions are such as any one who has not actually examined the ground would arrive at; but at the same time that its general slope is southwards from Senkerrydroog, the valleys, as a matter of course, falling uniformly, the spurs and ridges spoken of do not fall at the same rate; thus the ridge, which forms the summit of Mr. Bryce's line, continues to rise slightly for a considerable distance from the point where the line now crosses it, or where it falls it is not at the same rate as the low ground; thus, although it might be possible to obtain a lower crossing of the ridge in question, (not however without a considerable deviation) the banks approaching it on either side would be so heavy as to increase the earthwork very materially.

5. The section of trial line No. 1, made with a view to obtaining the lowest crossing, and which, if continued, would have passed not far North of Trichengode, nearly in the direction suggested by Colonel Pears, affords evidence of what I have said above.

6. With regard to the practicability of changing the line to the North of Senkerrydroog, I satisfied myself, by personal inspection, that no such change could be effected.

7. A granite ridge, connecting the two Hills of Senkerrydroog and Soonamullay, would necessitate an alteration in the whole course of the line, through districts 9, 10 and 11, which should then have pursued a course near Womaloor, West of Kangamullay and Soonamullay, crossing the Cauvery probably above its junction with the Bhowany, thus involving another large bridge, and in fact taking a totally different line of country from that which has been adopted.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

(True copy.)

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 423.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

In acknowledging the receipt of your letter, No. 527, dated the 9th instant, with a tracing of a portion of the 9th District, I have the honor to inform you that the Chief Engineer has, at my suggestion, called for further information, regarding the best course for the line between district 8 and the Cauvery river, and that, until that question is satisfactorily decided, all work affected thereby must necessarily be suspended.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Palghaut, 27th August 1856.

RAILWAY, DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 480.

TO MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

With reference to my letter, dated the 27th August, regarding a suggested alteration in the course of the line between the Moroor pass and the Cauvery, I have the honor to request that a report, made at your Chief Engineer's desire, by Mr. Bryce, upon that line, may be forwarded for the information of Government; and that I may be informed to what extent, in amount and cost, work has been already executed on the portion of the line, which, in the event of that of the Womaloor river being adopted, would have to be abandoned.

2. I have to request also that the Government may be favored with your Chief Engineer's views, upon a careful consideration of the whole question, of the ultimate expense of working, as well as present cost of construction, as to the expediency of abandoning or adhering to the present line south of Senkerrydroog.

3. I request to be favored with an early reply, as it is desirable that this point should be settled with as little delay as possible.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Jackatallah, 2nd October 1856.

MADRAS RAILWAY,

MADRAS, 20TH OCTOBER 1856.

No. 709.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor to acquaint you that I communicated the purport of your letters, Nos. 423 and 480, dated respectively the 27th of August and 2nd October, to the Chief Railway Engineer; a copy of his reply* I beg to annex by which you will perceive that he adduces strong and urgent reasons, why the works upon the districts 9, 10, 11 and 12 should not be stopped, pending a decision as to the advisability of making the alternative line, from near Womalore to Bhowany, adverted to by you, viz., "that the laboring classes now employed upon the works would, were they stopped, at once separate, and it would not be, except with considerable difficulty and after a lapse of some time, that they could again be brought together."

2. Mr. Bruce gives his opinion in respect to the necessity, or otherwise, for the alternative line now proposed; he is of opinion that, at this advanced stage of the operations, such a proceeding is not desirable, as it would be attended with considerable delay in the completion of the line of Railway, and an expenditure of Rs. 200,000 would be thrown away.

3. He adverts to the desirability of the line passing near to the Town of Salem; such, in a commercial point of view, is most desirable; for unless the line proceed to the close proximity of the large town of Salem, it is feared that it may prove very detrimental to the traffic on the line.

4. I therefore beg leave to support the opinion, expressed by the Chief Engineer of this Company, that, all circumstances considered, the line as now laid out had better be completed, even should the gradients be not so favorable as those obtainable upon the alternative line.

5. I request that I may be favored with further instructions upon this matter.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 5th November 1856.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 14TH OCTOBER 1856.

No. 201.

To MAJOR T. A. JENKINS,
Agent and Manager.

SIR,

I have to acknowledge the receipt of a copy of Colonel Pears' letter, dated 27th August 1856, requesting that the work between district 8 and the Cauvery river be suspended, pending the examination of an alternative line.

2. The new line proposed, instead of going down to Salem, then diverging in a westerly direction south of Senkerrydroog to Erode, would leave the present line about the end of district 8, pass near Womaloor, then along the valley on the north of Senkerrydroog to Bhowany, and thence to Coimbatore.

3. The course thus indicated is shorter than the existing line via Salem.

4. I confess that it was with some surprise that, months after the works have been begun, and large sums of money expended, I found myself called on to examine a new line through a different tract of country, when the reasons which led to the choice of the present line remain the same, and we are in possession of no facts, regarding the recently proposed line, which were not in our possession from the beginning.

5. The object in view, in taking the line to Salem, was clear and obvious. That most important town is the centre of the trade of a large district, and no Railway Company ought, upon slight grounds, so to interfere with existing interests as to ignore the requirements of such a town, and deny it the advantages of Railway communication, by not taking the line nearer to it than ten or twelve miles.

6. Besides the injury which would be done to Salem, if the line was taken via Womaloor, we must not forget that Trichinopoly and the Southern districts will be much better supplied by a line via Salem than via Womaloor.

7. These are all rather commercial than Engineering considerations, but they are very important, and nothing in my opinion has come to light to counterbalance them.

8. The high ground near Senkerrydroog, which Colonel Pears wishes to avoid, is not of so formidable a character as to justify our neglecting Salem, and going twelve miles further from Trichinopoly, to avoid it.

9. You may perhaps get a better line down the valley; but you will, I think, get a worse line from Bhowany to Coimbatore.

10. These considerations which might have been weighed and balanced eighteen months ago, when the Engineers first entered upon the work, appear to be taken out of our hands by the forward state of the works. We consider that we were bound to go to or near Salem, and accordingly did go.

11. The amount of money, which has been spent on districts 9, 10, 11 and 12, is in all Rs. 2,00,000; this I conclude the Company will not choose to throw away, neither will they wish to see it added, as a dead weight, to the guaranteed capital, the interest of which is to be repaid out of profits, so that I am afraid the stopping of the old line and beginning a new one is not so easy a matter as at first sight it may have appeared.

12. I understand, privately, that Lieutenant Roberts has reported in favor of the old line; I will, therefore, with your permission wait to hear what Colonel Pears' wishes are, consequent on that Report, before stopping the works which cannot be done without great expense, and we shall lose less by continuing it, even should the work have to be stopped, than we should if we stopped it at once, dispersed all our people, and then had to begin again.

13. Mr. Beattie is examining the line near Womaloor, but I have no Engineer available for carrying on a new survey, unless I stop the works, regarding which I shall wait further orders.

I have, &c.,

(Signed) GEORGE B. BRUCE,
Chief Engineer.

True Copy.)

T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 531.

To MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to request you will be good enough to state, for the information of Government, whether the instructions contained in my letter, No. 423, of the 27th August, were duly communicated to your Chief Engineer, and on what date.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 22nd October 1856.

MADRAS RAILWAY,
MADRAS, 23RD OCTOBER 1856.

No. 733.

To LIEUTENANT COLONEL T. T. PEARS, C. E.,
Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 531, dated the 22nd of October, in which you request to be informed whether the purport of your letter, No. 423, dated the 27th of August, was communicated to the Chief Engineer of this Company, and when, I have the honor to state that your letter in question informed me, that the Chief Engineer had, on your suggestion, called for further information relative to the best course of the line in district VIII, and it was not until an interview with the Chief Engineer, that I learnt that he had not suspended the works upon the line in those districts, as I supposed he had done, upon your suggestion personally communicated. I then, on the 6th of October, sent him a copy of your letter.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 5th November 1856.

RAILWAY DEPARTMENT,
DEPUTY CONSULTING ENGINEER'S OFFICE.

No. 6.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to report the completion of my inspection, pursuant to your instructions, of the country to be traversed by the proposed deviation of the line of Railway to the North of Senkerrydroog, and to transmit herewith the printed Map (No. 61) with the direction that such a line would take duly shown thereon (in blue).

2. As Mr. Bryce had already examined and reported on, as you are aware, that portion of this line between Oomaloor and the Cauvery River, near Reddypetty, stating that a favorable line could be obtained by following, but not too closely, the right bank of the Oomaloor river, I did not consider it worth while to go over that ground; but I confined myself to seeing how that trace could be most advantageously brought into connection with the original line.

3. By the Map, you will observe that the point of connection, to the West, occurs at Pungumbaddi, from which the new line would descend, apparently, gradually, and over not very rough country, to the Cauvery, near Seeraumpollum, as suggested by you, where a favorable crossing presents itself. Thence, following up the left bank of the Cauvery, the new line would wind round the spur of the Seerungacounden Hill, and cross the Oomaloor River, to Reddipetty, as before-mentioned.

4. Between Reddipetty and Oomaloor, the frequent spurs leading out from the Hills to the North of Senkerrydroog, render it impossible for any but a most tortuous line to be obtained up the left bank of the Oomaloor river.

5. On the right bank, however, as already reported by Mr. Bryce, no impediment exists to procuring an almost direct line.

6. From Oomaloor up to Chettyputty (on the present line), at which point about the connection to the East would occur, the country rises very rapidly and markedly; and I fear, therefore, that good gradients cannot be obtained thereon.

7. Standing on the ridge near Chettyputty, and taking as a standard the present line steadily descending therefrom, on an incline of 1 in 120—even by taking advantage, as it does, of a spur of the Shevroy hills—a very fair idea can be formed, by sweeping round the horizon with that grade in one's eye, as to how very much steeper any line must be that attempts to enter so immediately the Oomaloor valley.

8. Taking this, as it appears to me, most legitimate mode of testing the amount of descent, I feel quite satisfied in stating that between Chettyputty and Oomaloor no easier grade than 1 in 100 can be obtained, and I do not think I am far wrong in stating that, probably, the ruling incline on that line would be as much as 1 in 80.

9. As these gradients would be, at all events, equal to, if not in excess of, as I am inclined to believe, those, on the present line in the vicinity of Senkerrydroog; in fact, as it would be only removing the difficult portion of the line to another part of the country, it remains to be seen what the comparative advantages of either line are, in other respects.

10. Between Oomaloor and the Cauvery, the new line, though at first sight it appears to traverse a most favorable country, will perhaps, on closer inspection, appear not to be altogether so very advisable. For although the gradients will undoubtedly be easy, yet from crossing continuous patches of paddy cultivation and from its taking a low level, the line will require banking throughout, and endless masonry works; and, moreover, in the purchase of land, it will be rendered additionally expensive, as regards original cost of construction.

11. On the other hand, the great advantage of the present line to the South of Senkerrydroog, and which arises from its running for so great a distance along the water shed of the country, is the absence of masonry works. In few parts of India, I should imagine, will you see a continuous stretch of 25 miles, as in district No. 10, with scarcely any masonry works, and not one of any magnitude. The Pund River Bridge, 2 arches of 30 feet, met at 3 miles 28 chains, being the largest.

12. Mr. Bryce informs me that he feels confident in being able to reduce, by curves, all gradients to the West of the summit (South of Senkerrydroog) in district No. 10 to 1 in 110, and that, by extra cutting and embankment, he can subdue those on the East side to 1 in 130, as a maximum.

13. Considering, therefore, the respective advantages of either line, as above set forth, the little difference between the length of each* (the old being 52 miles and the new 51 miles long), the amount already expended upon the portion now under execution that would be discarded by the new line, say 1½ Lakhs of Rupees, the further delay in the eventual opening of the Railway by taking up this new line, probably about one year, I have come to the conclusion that the retention of the present line is far from unadvisable; and, with all deference, I would recommend that such extra outlay be incurred on district 10, as would reduce the gradients to the greatest extent possible.

14. In arriving at this decision, I have not been uninfluenced by the fact that the new line, if feasible, would by going to Oomaloor, and thus avoiding Salem, greatly deprive the latter town of those benefits and advantages which it was originally intended, as every body has been led to expect, should be opened out to Salem by the construction of a Railway.

* 15. In bringing this point forward, I trust that you will understand that I do so, not because I attribute to it any vital importance, but because it appears to me to be, among others, fairly one for consideration.

16. For, as it was from keeping this point mainly in view, that the direction of the line was originally selected, so a departure from that view would, in all probability, have entailed a considerable deviation from the line as it now stands.

17. After a careful examination of the country, I cannot but consider that if the Salem station and the crossing of the Cauvery River, that has been selected near Errode, are to be retained, the trial line (colored red) is the best available.

18. The deviation that has been proposed by Trichengode, and which is colored yellow, has a summit of 96 feet below the summit (marked A) of the trial line, but at the points where each of these lines crosses the road between Senkerrydroog and Trichengode, it is found that the Trichengode line is 23.61 feet above that by Senkerrydroog.

19. If then the fall (viz. 340 feet) on the original line, from this crossing of the Trichengode road to the Cauvery River, is considered excessive, in a distance of 10½ miles, how much more so will not that be, on the proposed deviation by Trichengode, where the fall would be $340 + 23 = 363$ feet, in a distance of 9 miles?

20. Even, therefore, though the remaining portion, to the East of the line deviating by Trichengode, be found more favourable than the corresponding portion on the original line by Senkerrydroog, which I by no means anticipate as likely to prove the case, the Western portion, as above shown, would, I think, be sufficient to condemn the deviation by Trichengode, as proposed.

21. In conclusion, I have the honor to state that it is only after a very careful consideration of all the circumstances connected with the case that I have arrived at the opinion, I have expressed, regarding the advisability of retaining the line originally selected; but should you consider such a step necessary, a set of levels might be run between Chettyputty and Oomaloor.

so as to determine the accuracy, or otherwise, of what I have stated regarding the steep gradients that will be encountered on this portion of the newly proposed line, and so effectually set at rest the question as to the retention, or otherwise, of the original line.

I have, &c.,

RICHARD A. ROBERTS, LIEUTENANT,
Deputy Consulting Engineer for Railways.

Camp Mullapooram, 24th September 1856.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

SALEM, COLLECTOR'S OFFICE,
Oosoor, 14th October 1856.

No. 63.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer, Madras Railway.

Sir,

With reference to your demi-official letter, dated the 2nd instant, requesting me to state whether I should consider it of great importance to my district, or its capital, if the course of the Railway line were to be changed near Salem, and run from the foot of the Moroor pass, by Womalore down the Womalore river towards Bhowany, I have the honor to state that the proposed change would prove a great disadvantage both to the town of Salem, and to nearly all the inhabitants in the District, to all in fact whom trade or business may require to visit the chief town.

2. If a Branch line should be carried by Salem to Trichinopoly, the objections to which I now refer might be nearly, if not entirely, removed; but if there is reason to believe that this branch line will be delayed, or not be immediately commenced, the people of this District would much regret to see the line altered in the way now referred to.

I have, &c.,

H. A. BRETT,
Collector.

Salem, Collector's Office, }
Oosoor, 14th October 1856. }

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.
Madras, 5th November 1856.

No. 225.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 197, 327, 709, and 733, dated severally the 7th April, 28th May, 20th and 23rd October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. On the 22nd February last, the Agent forwarded a tracing of a trial survey of district 10, being a portion of the line of Railway lying near Salem.

2. His attention was called to certain defects in the section, in a letter* dated the 26th idem, and "the desirableness of having the line North of Senkerrydroog looked at" was noticed therein.

* Copy appended.
3. On the 7th April the Agent replied, forwarding with letter* (No. 197) communications from the Chief Engineer and Mr. Smart. In the former of these Mr. Bruce observes, "though we have not taken any trials to the north of Senkerrydroog, Mr. Smart speaks decidedly regarding that line of country presenting very formidable obstacles. I cannot speak positively on this point from my own observation, for though I looked carefully over the ground, which appeared feasible, that to the north of Senkerrydroog is so much out of the general direction of the line, that I did not observe it minutely. This shall have my attention in a few days, when on district 10."

No. 192, dated 8th April to the Agent, 4. On the receipt of this letter the Agent was authorized to stake out the line.

Letter to Agent No. 95, dated 23rd May, paras. 6 and 7. 5. On the 23rd May Mr. Bruce writes thus, "with regard to the practicability of changing the line to the North of Senkerrydroog, I satisfied myself, by personal inspection, that no such change could be effected. A granite ridge, connecting the two Hills of Senkerrydroog and Sonamullay, would necessitate an alteration in the whole course of the line through districts 9, 10, and 11, which should then have pursued a course near Womaloor, West of Kungamullay and Soonamullay, crossing the Caverry probably above its junction with the Bhowany, thus involving another large bridge, and, in fact, taking a totally different line of country from that which has been adopted."

6. On visiting this portion of the line lately, in company with Mr. Bruce, I found that the line north of Senkerrydroog, which always appeared to me to offer the likeliest alternative line, and to which I alluded in my previous letter had not been closely examined.

Shown by blue on the accompanying sheet of the Atlas. 7. This line would pass direct from Womaloor along the general course of a small river, tributary to the Caverry, nearly in the direction of Bhowany, and might, as it seems, be then carried down the left bank of the river, till a convenient spot for crossing is found, not far above that selected for the other line.

8. I requested Mr. Bruce would have this line examined, informing the Agent, on the 27th August, that I had done so; and pointing out that "until that question is satisfactorily decided, all work affected thereby must necessarily be suspended."

* No. 6, dated 24th September 1856. 9. I also instructed Mr. Roberts to examine and report upon the line proposed, and his report,* together with a copy of that made by Mr. Bryce to the Chief Engineer of the Railway, is appended.

Shown on the Map by a red line. 10. The line proposed by Mr. Bruce, and upon which some money has been already expended, runs from the Moroor pass leaving Womaloor to the North, curves round the base of the Shervaroys, and leaving the town of Salem about 2 miles to the South, ascends the ridge which stretches across from Senkerrydroog; and leaving that hill to the right, drops into the valley of the Cauvery.

11. The objection to this line is, that, while the general section of the country indicates a continued fall from Salem to the Caverry, this fall is broken here by a sharp ascent of the Senkerrydroog ridge—the trial section shows gradients in that direction, i. e. a direction opposed to the general fall of the line, of 1 in 100.

12. This is obviously a very serious defect, and likely to interfere greatly with the economical working of the traffic; for it is clear that, had the line a dead fall to the river, the expense of working up from thence to the neighbourhood of Oomaloor, or the top of the Moroor pass, would be in a great measure balanced by the advantages gained in working down, assuming the traffic both ways to be the same.

13. But by breaking up the down plane, and interposing a reverse gradient of $\frac{1}{100}$ in 100, we either lose the whole of the advantages in that direction, and limit the load to that which can ascend such a gradient, or, at all events, render necessary assistant engines to work the load up the ascending plane.

See letter appended, No. 62,
dated 14th October 1856.

14. The advantages of this line are, however, cheapness of construction, as shown in Mr. Roberts' report, and its keeping close to the Town of Salem, to which the Collector attaches great importance.

15. Of the other line, the advantages are that it promises to afford a steady and tolerably uniform fall the whole way, that it is shorter, Mr. Roberts estimates, by one mile; while the disadvantages are that it is likely, mile for mile, to be the most expensive, and that it would pass 10 miles from Salem, and that, if adopted now, it involves the sacrifice of a considerable sum already laid out on the other line.

16. I think there can be no doubt that the latter would have been the best line. The interests of the Railway itself would have suffered nothing from the circumstance of Salem being thrown a few miles out, while the effect on the Town itself would probably have been to draw away, gradually, many of the inhabitants to a healthier locality near the line.

17. I should not have thought it necessary to notice further what appears to me to be an unfortunate mistake, but for a passage in the Chief Engineer's letter to the Agent (No. 201, 14th October) "I confess that it was with some surprise that, months after the works have been begun and large sums of money expended, I found myself called on to examine a new line, through a different tract of country, when the reasons which led to the choice of the present line, remain the same, and we are in possession of no facts, regarding the recently proposed line, which were not in our possession from the beginning".

18. From this correspondence Government will learn that, in April last, the Chief Engineer reported, with reference to this line, that the North of Senkerrydroog is so much out of the general direction of the line that he did not observe it minutely, but that it should have his attention in a few days; and that on the 23rd May, he reported, as above quoted, against the line, and that among other objections, it would render necessary bridges over both the Cauvery and Bhowany. The reports of Lieutenant Roberts and Mr. Bryce tend to a different conclusion, and it appears that this line would be, not only in all probability the best, but the shortest.

19. Mr. Bruce's attention was again called to this line in August, no work of any consequence having been executed on district 10; the Agent was reminded that all work likely to be affected by the proposed change should be suspended.

20. This order, it appears, was not conveyed to the Chief Engineer until the 6th October; considerable sums of money have doubtless been expended since, and on the 18th October, Mr. Bruce, after stating that the line is shorter than the other one, expresses his surprise at the change proposed, when large sums of money had been expended, &c.

21. I have now to solicit instructions from Government, as to whether the new line shall be further examined and all works now in progress, and likely to be affected by the change, be suspended, or whether the works be allowed to proceed on the line first proposed.

22. Under these circumstances, I have considered it my duty, in anticipation of the approval of Government, to request the Agent to cause a trial section of the proposed alternative line to be taken without delay; and to stop, in the meanwhile, all works now in progress likely to be affected by the adoption of that line. I have, after much consideration, adopted this course for the following reasons.

23. The portion of the line in question lies between the Moroor pass and a point, a few miles beyond the Cauvery. The length thereof is about 50 miles, and the probable cost of that portion of the line, therefore, may be estimated at 30 lacs of Rupees.

24. Mr. Bruce states that, on districts 9, 10, 11 and 12, about 2 lacs of Rupees have been expended, but since district 12 would not be affected at all by the change, districts 9 and 11 only in part, and the expenditure on district 10 is relatively small, we may hope that this would not be, under any circumstances, wholly thrown away. I have, however, called for an exact report upon this point to accompany the section.

25. It appears that the probable point of departure of the new line, from that which has been already staked out, would be about Chettyputty, whence the character of the present line, as it proceeds towards the Cauvery is, as follows.

26. For about 23 miles it has a general fall to the "Pund River", marked B on the Atlas. The fall in this distance appears, from the section already submitted, to be about 300 feet. From this point to the first summit is a distance of $5\frac{1}{2}$ miles, involving a total rise of 240 feet; and this portion will consist of two planes of about two miles, each, at 1 in 100, with an intervening level plane. From hence, the line falls towards the west, for $\frac{1}{2}$ a mile, at 1 in 100; a level plane of 2 miles follows, then a fall of one mile at 1 in 100, and from thence a continued fall to the bank of the river, for nearly 12 miles, by planes, the maximum slope of which is 1 in 100;—the total difference of level on this 12 miles being about 400 feet. From the river, the line ascends abruptly, by rather sharp gradients, to the point whereat the alternative line, by Oomaloor, might be expected to strike.

27. The difference of level, therefore, between Chettyputty at the one end, and the river at the other, is about 500 feet, in a distance of about 40 miles; but, in passing over a line with this average fall, we have in this case to accomplish, in addition, an ascent of 250 feet. In a similar manner the return, or uploads, would have to overcome the same 250 feet, in addition to the 500 actual difference between the two termini.

28. The effect of this would be, as before observed, either to limit to a very great extent the loads travelling each way, or to render necessary the employment of assistant engines over the difficult portion of the line, which may be said to extend over 20 miles, i. e. from the Pund river to the Cauvery.

29. The actual loss, in working such a line, would depend upon the amount of traffic; but the mode in which this loss would arise, and its probable extent, may be judged of from the following.

30. Assuming that the line direct from Oomaloor to the river was characterized by an uniform slope, or one broken up only by easy gradients, such that for all practical purposes in working down it might be considered level, and that an engine could take down a load (gross) of 300 tons at 10 or 12 miles an hour; to carry the same load up the plane towards Senkerrydroog would require at least 5 such engines.

31. For a moderate traffic, such as 300 tons a day each way, an addition to the Rolling Stock of at least 4 engines would be required to work this distance, involving a capital outlay at once of eighty thousand Rupees.

32. The maintenance and working of these engines would also have to be charged upon the traffic passing over; a permanent charge would be thus laid upon every unit of traffic.

33. It cannot be yet affirmed positively that the other line possesses characteristics, in all respects, such as to render it so far superior to this, as to warrant the abandonment of a portion of work executed, and an apparent disregard of the immediate interests of the Town of Salem; but it seems to be the opinion of those who have seen it, of both Mr. Roberts and Mr. Bryce, that the features of the country, in following the general course of the Oomaloor river, promise well.

34. Doubtless, in adopting the course which I now recommend, some delay will arise; but the importance of the question to be solved renders it well deserving of some expenditure of time.

35. If the result should justify an adherence to Mr. Bruce's line, the time lost will be merely that expended in making a trial section of the alternative line, not more, I should think, than two months. If the new line should turn out so far superior as to justify its adoption, we shall have the satisfaction of knowing, though it may cost some sacrifice, both of time and money, we have made no blunder in the line ultimately adopted, and have expended, to the best advantage, the large sums devoted to the construction of this important work.

36. Government will observe that, had the examination of the new line been taken in hand, as suggested by me, nearly three months ago, the question would have been one of easy solution, and would have been probably determined ere this. It has now been embarrassed by the considerable sums of money expended already, on that which I have reason to believe, is the least eligible course of the line.

37. Under these circumstances, perhaps the most satisfactory mode of proceeding would be, while the Engineers are here engaged in examining and reporting on the new line, to refer this correspondence for the opinion of the Board of Directors and their Consulting Engineer.

38. A survey of the Oomalloor line has yet to be made, but a trace, showing a section on the other line, is now submitted; and the Board might be asked their opinion as to the propriety of adopting the line of better gradients, with the sacrifice above explained, which that adoption would involve.

39. Ample compensation for a delay of a few months will be found, in the careful consideration and judicious determination of a point of so much importance to the future operations of the Railway.

40. I trust Mr. Bruce, the Chief Engineer of the Railway, will be in England when this question reaches the Board, and will be able to give them whatever importance they may require, to enable them to come to a conclusion upon this subject.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 5th November 1856.

P. S.—I have detained this report for some days, expecting to receive Mr. Bryce's report, but as it has not yet been forwarded by the Agent, I do not think it proper to delay any longer bringing these circumstances to the notice of Government.

The report, when received, shall be submitted to Government without delay.

T. T. PEARS,
Consulting Engineer for Railways.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

To Major T. A. JENKINS,

No. 537.

Sir,
Agent and Manager of the Madras Railway Company.

I have the honor to acknowledge the receipt of your letter, No. 709, of the 20th instant, with its enclosure. From these letters the Government learn that no survey has yet been made of the alternative line, referred to by me in letter to your address, No. 423 of the 27th August, and that the works, likely to be affected by the question regarding the adoption or rejection of that line, were not suspended as directed in that letter.

2. I have now the honor, under the orders of Government, to request that no time may be lost in furnishing a trial section of the line referred to. In the selection of such line for trial, for which duty you have several experienced and intelligent Engineers in that neighbourhood, the object in view may be considered to be the adoption of the best line between districts 8 and 11, giving due and not more than due consideration to the desirableness of applying, as far as may be, work already executed upon districts 9 and 11. In the meantime, I have to request that all works, likely to be affected by the adoption of this line, be at once suspended, and that in forwarding the trial section, it may be accompanied by a statement showing exactly the nature, amount, and value, of work, which has been actually executed and will have to be abandoned upon the line already staked out. With respect to the means at your disposal for carrying out the Survey expeditiously, you will observe that the Sub-Assistant Engineer in charge of district 10 will be, for the time being, wholly set free, and if not considered qualified for a duty of this nature, it seems that he might well conduct the works still in progress on districts 9 or 11, under the supervision of the Engineers, while one of those gentlemen made the survey now called for.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 23rd October 1856.

MADRAS RAILWAY,
MADRAS, 6TH NOVEMBER 1856.

No. 774.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer.

Sir,

With reference to your letter, No. 537, dated the 23rd ultimo, I have the honor to transmit to you, herewith, a copy of the Report by Assistant Engineer, Mr. Bryce, upon the country between Woomalloor and Cauverypettah, as requested, together with a sketch of the ground, showing the line of Railway in districts 9, 10 and 11, and the deviations which been examined, via Trichengode and the Woomalloor valley.

2. I annex a copy of a letter from Mr. Beattie, Chief Resident Engineer, expressing his opinion and reasons against the total abandonment of the original line, or a temporary suspension.

No. 260, 5th November.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 11th November 1856.

MADRAS RAILWAY, CHIEF ENGINEER'S OFFICE,
MADRAS, 5TH NOVEMBER 1856.

No. 260.

To Major T. A. JENKINS,
Agent and Manager.

Sir,

1. I have the honor to reply to yours, No. 841, dated 31st October, enclosing letter, No. 537, from the Consulting Engineer.

2. As requested, I have given orders to suspend all work likely to be affected by the proposed deviation to the North of Senkerrydroog.

3. I have also made arrangements for having this proposed deviation surveyed.

4. It is with much reluctance that I have complied with these orders of Government, as I find Mr. Bruce entirely objected to them, and from my own personal knowledge of the district, I believe the adoption of this deviation would be detrimental both to the interests of the Railway and the country generally.

5. I have called on the Resident Engineer to give me the necessary information, to enable me to lay before you fully the loss that will be sustained by the suspension, and abandonment, of the present line.

6. I find Mr. Bruce, in a letter, No. 201, dated 14th October, has given you his views on this matter, and I beg to add the following objections to either the total abandonment or a temporary suspension.

1st. If the present route is abandoned, the completion of the line will be delayed from 15 to 18 months. If the works are only suspended, until the new surveys and reports have been made, and passed through the proper channel, then I think the delay would be from six to nine months.

2nd. If the present works are abandoned, we throw away some Rupees 2,00,000 already expended, and we must compensate the contractors for taking the works out of their hands, and on district 9 the greater portion of the earthwork has already been contracted for by middlemen, who have imported widders from a distance and given them large advances; if the works are simply suspended, this latter claim I have no doubt will be made. I may here remark that I anticipate that during last month, on district 9, if the ten per cent are added the amount of earthwork executed will exceed considerably 100,000 cubic yards.

3rd. On the Shervaroy Division, a portion of the works were suspended for the same reasons as are now brought forward; after three months, Mr. Bruce convinced the Consulting Engineer that Mr. Henderson had adopted the best line, and the works were again proceeded with; but Mr. Henderson soon found that he had not only the simple delay of three months to contend with, and called my attention, as Resident Engineer of the Shervaroy Division, to the fact, that, owing to the summary dismissal of his coolies, he has never since had the same command over them, and when Mr. Bruce went over the line lately, he gave Mr. Henderson permission to raise the wages 33 per cent on the portion that had been suspended.

4th. The proposed line will be about 7 or 8 miles further from Salem than the present line, and about 10 miles further from Trichinopoly, Madura, &c.

5th. The proposed route will, I think, be considerably more expensive than the present line, owing to the number of rivers and streams in the way, and I think on examination it will be found that the first five miles, not gone over by Mr. Bryce, will be found very steep.

7th. The object of this proposed deviation is, I believe, to get rid of some gradients of 1 in 100, found on the trial section of district 10, these gradients, I understand, are likely to be improved on, again surveying the ground and assuming that the gradients can be made 1 in 110 or 1 in 120, I do not see any reason for the proposed deviation, the first five miles of which, as I have already stated, I think will be found steep, probably 1 in 100 part of the way.

8th. I may here remark that there are steeper gradients than 1 in 110 on both sides of the line objected to.

9th. The greater part of the establishments on districts 9, 10 and 11, are now without work.

10th. I presume, if the Railway Company are compelled to abandon their present line, Government will have to refund the amount expended on it, but, in the case of suspension, the extra cost will fall on the Railway Company.

11th. I enclose Mr. Bryce's report on the proposed deviation line.

I have, &c.,

(Signed) A. BEATTIE,

Acting Chief Engineer.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

DISTRICT 11, MADRAS RAILWAY,
ERODE, AUGUST 26TH 1856.

DEAR SIR,

I have as follows, to report, on the proposed diversions of line, which are laid down with the present routes of districts 9, 10, and 11 on the accompanying Map.

2. As directed by you at Perandooray, on the 7th instant, I examined the valley of the Woomaloor and Cauveryputty river, with the object to ascertain if a line could be brought down that valley with better gradients than those we have on the present route by Salem and Senkerrydroog, or on the proposed route by Salem and Trichingode.

3. I am satisfied that, from Woomaloor to the Cauvery river, a very direct line might be had, through a gently undulating country on the north side of the river.

4. Starting from a point, on district 9, about 5 miles east of Woomaloor, this line would pass immediately to the north of Woomaloor, and Kawra Munjullum, and so on to a crossing of the Cauvery river near Cauveryputty.

5. The banks of the Cauvery are here rocky, and 14 feet high, the depth of water in the river being at the time of my visit between 20 and 30 feet.

6. The gradients on the line (between Woomaloor, and the Cauvery) would be of considerably less inclination than 1 in 100.

7. I am not prepared to state whether the inclines would be so favorable on the 5 miles to the east of Woomaloor.

8. I made no examination of the country to the west of the Cauvery, for a continuation of this route, as I considered your instructions carried out, in exploring both sides of the Woomaloor river; and other duties compelled my immediate return to Erode.

9. Should it not be thought advisable to cross the Cauvery at Cauveryputty, the line might be thrown over the Woomaloor river about a mile from its mouth, and carried down close along the east bank of the Cauvery as shown on the map.

10. The country on the south side of the Woomaloor and Cauveryputty river is unfavorable for a line of Railway.

11. High granite ridges and spurs run down close to the river, and those ridges, besides entailing heavy work, would necessitate a line following the course of the river, which is very winding and crooked.

12. In regard to the proposed line of district 10 by Trichengode,

13. I have now ascertained the summit at Trichengode to be 2,361 feet higher than the gradient is, on the present line, at the crossing of the Senkerrydroog and Trichengode road.

14. The Trichengode summit, besides being higher, is also nearer the Cauvery crossing by $\frac{3}{4}$ of a mile.

15. From the above data we clearly establish that the gradients, between Trichengode and the Cauvery, would be steeper than those we now have on the last 10 miles of district 10.

16. That, in many places, they would be much steeper, I have no doubt; as a continuous and uniform fall, such as we have on the last 10 miles of the present line, could not be obtained.

17. As you may deem it satisfactory to know what gradients may be had between Trichengode and the Pund river, I have requested Mr. Braddock to make a section of that portion of the proposed deviation, choosing the most favorable ground he can find.

18. I shall send you the result of his levels, whenever I receive the necessary information from him.

19. With respect to the diversion of 2nd Section of district 11.

20. I have, with Mr. Macnair, examined the country to the south of the present line, and found that, from our summit at 16 $\frac{1}{2}$ miles, the land rises rapidly to the south towards Chinnamallay mountain.

21. The summit, on the proposed line, would be between 60 and 70 feet higher than the one we now have.

22. It being suggested to me that, by changing the last 3 or 4 miles of district 11, an improvement might be made on the line near Watkaloe, I carefully inspected the country to the west of Arsanamulla hill, with the view that this alteration might be made.

23. I came to the conclusion, however, that any change made on district 11 would not be for the better, and could be attended with no benefit whatever, either to the gradients or line of District 12.

Yours very truly,

(Signed) A. BRYCE, *Acting Resident Engineer.*

(True Copy.)

(Signed) GEORGE LATHAM, *Asst. to the Chief Engineer.*

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 232.

On a letter from the Agent and Manager of the Madras Railway Company, No. 774, dated 6th November 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

* Dated 26th August 1856.

The Agent with this letter forwards report* from Mr. Bryce, alluded to in my report No. 225 of the 5th November, and also a letter† from Mr. Beattie, the Chief Resident Engineer, on the subject of the course of the line near Senkerrydroog.

2. Mr. Bryce, it will be observed, speaks thus of the alternative line by the Womaloor river: "I am satisfied that from Womaloor to the Cavery river a very direct line might be had through a gently undulating country on the North side of the river" (Womaloor.)

3. Mr. Beattie enlarges much on the subject—a very important one too—of the loss of time and money involved in the suspension of the works now in progress, and still more on the ultimate adoption of the new line; but does not appear to question the probability of the latter proving the most favorable line.

4. The sacrifice in money is estimated by Mr. Beattie, as by Mr. Bruce, at no less than 2 lacs of Rupees. I find, however, that, up to the end of August, the total amount of advances made upon districts IX, X and XI (the first and last of these districts being only partially affected by the change) was 1,10,000 Rupees. Since that time Rupees 1,05,000 more have been advanced, and of this a considerable portion may have been expended—the order to suspend the work, having, through a mistake on the part of the Agent, not been forwarded.

5. With regard to the compensation to be made to the contractor, I cannot attach much importance to this, and still less to the assumed difficulty in collecting labour a second time. The people dwell in the neighbourhood; and it is contrary to all our experience in public works to assume that, while coolies may be collected at the commencement of a public work, any interruption in expenditure, on that account, will render it more difficult, than at the outset, to collect them again when wanted.

6. It remains for the Government to pass such orders as they think proper in this case. Mr. Beattie concurs with Mr. Bruce in strongly urging an adherence to their present line—wholly, as it seems, on the ground of the sacrifice to be made in giving it up.

7. It is greatly to be regretted that the country was not more carefully examined at first, for there can be no question I think, but that the superior character of the Northern line would have satisfied Mr. Bruce of the propriety of giving up the idea of running near Salem, and climbing the ridge South of Senkerrydroog.

8. With so much money expended and so much anticipated loss of time, as shown in Mr. Beattie's letter, it rests with Government to give their orders on the subject, and to determine whether the wishes of the Railway Engineers shall be complied with, and the responsibility of selecting the course of the line in the present case transferred to them; or whether the Agent shall be called upon to cause the alternative line to be surveyed, and all works likely to be affected by its adoption to be suspended in the meantime.

T. T. PEARS,

Madras, 11th November 1856.

Consulting Engineer for Railways.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 442.

Extract from the Minutes of Consultation, dated 2nd December 1856.

Read the following letters from the Consulting Engineer for Railways.

(Here enter 5th and 11th November 1856.)

With the first of the above communications the Consulting Engineer submits the correspondence that has passed relative to the course of the Railway through district 10, and parts of districts 9 and 11. He notices the unfavorable character of the gradients on the present line, with the consequent disadvantage in working it, and the probability that a more eligible line may be found via Oomaloor. He solicits instructions from Government whether the new line shall be further examined, and all works now in progress, and likely to be affected by the change, be suspended, or whether the works be allowed to proceed on the line first proposed. He intimates that he has considered it his duty, for reasons which he details, in anticipation of the approval of Government, to request the Agent to cause a trial section of the proposed alternative line to be taken without delay, and to stop, in the meanwhile, all works now in progress likely to be affected by the adoption of that line—and suggests that, under the circumstances, perhaps the most satisfactory mode of proceeding would be, while the Engineers are here engaged in examining and reporting on the new line, to refer this correspondence for the opinion of the Board of Directors and their Consulting Engineer.

2. With his second paper, Colonel Pears submits a report upon the proposed alternative line by Mr. Bryce, the Acting Resident Engineer, with remarks upon it by the Acting Chief Engineer, Mr. Beattie. Both Gentlemen strongly object to the abandonment of the present line. Colonel Pears states—"with so much money expended, and so much anticipated loss of time, as shewn in Mr. Beattie's letter, it rests with Government to give their orders on the subject, and to determine whether the wishes of the Railway Engineers shall be complied with, and the responsibility of selecting the course of the line in the present case transferred to them; or whether the Agent shall be called upon to cause the alternative line to be surveyed, and all works likely to be affected by its adoption, to be suspended in the meantime."

3. The Government have given the papers thus submitted to them their very careful attention. There seems reason to believe, as far as present information extends, that the line by Woomaloor would, on the whole, have been the best, and it is at any rate very much to be regretted that it was not thoroughly examined at the time, when the line by Salem was marked out. As matters, however, now stand, looking to the decided opinion expressed by the former and present Chief Engineer against the suspension of the works, as well as that of Lieutenant Roberts—to the large outlay already incurred, and the time that must be lost before the reply of the Board of Directors can be received, the Governor in Council is not prepared to take upon himself to authorize the suspension of the works—and he therefore directs that they be proceeded with at once on the responsibility of the Officers of the Railway Company.

4. A grave question, however, arises in connection with this subject, viz. the disregard shown by the Railway Officers to the instructions of the Consulting Engineer.

5. It appears not only that the country to the North of Senkerrydroog was, from the first, but imperfectly examined, in despite of the objections taken by Colonel Pears to the present line South of that town—but that, in August last, when "no work of any consequence" had been done upon that line, the Consulting Engineer requested Mr. Bruce, in person apparently, to have the alternative line examined, and in a letter written on the 27th of that month, reported the same to the Railway Agent and Manager, pointing out that, until the question was decided, "all work affected thereby must necessarily be suspended." The work, however, was not intermitted; nor, was the Consulting Engineer's order communicated by the Agent to the Chief Engineer until 6th October.

6. The Government have frequently had occasion to notice the disregard evinced by the Railway Functionaries in this country to the orders of the Government, or the Consulting Engineer, in matters opposed to their own views and inclinations. To address them now on the subject would, probably, be to little more effect than before; but, in reporting these proceedings to the Honorable the Court of Directors, the Government will feel it incumbent on them to solicit that the attention of the Railway Board be pointedly directed to this course of procedure, which, if persevered in, cannot but be highly prejudicial to the interests of the Railway Company as well as the Government.

7. The Consulting Engineer has lately been assisted by a Deputy, who will relieve him from much matter of detail, and enable him, it is trusted, to exercise such close supervision over the proceedings of the Department, as will prevent the possibility of such neglect of orders, as that now remarked on, again occurring—at least, without immediate detection.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 685.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have had the honor of laying before Government your letter, No. 774, of the 6th ultimo, and with reference thereto and to my demi-official communication of the 26th ultimo, I have been instructed to convey to you the following orders.

Agent's letters, Nos. 197, 327, 709, and 733, dated 7th April, 28th May and 20th and 23rd October 1856. 2. The Government have given the papers submitted to them on this occasion very careful attention. There seems to them reason to believe, as far as present information extends, that the line by Womaloor, would, on the whole, have been the best; and it is at any rate very much to be regretted that it was not thoroughly examined at the time, when the line by Salem was marked out.

3. As matters, however, now stand, looking to the decided opinion expressed by the former and present Chief Engineer, as well as by Lieutenant Roberts, against the suspension of the works to the large outlay already incurred, and the time that must be lost before the reply of the Board of Directors can be received, the Governor in Council is not prepared to take upon himself to authorize the suspension of the works, and he therefore directs that they be proceeded with at once, on the responsibility of the officers of the Railway Company.

4. I am directed, further, to observe that a grave question arises in connection with this subject, viz. the disregard shown to the instructions received from this office.

5. It appears not only that the country to the north of Senkerrydroog was, from the first, but imperfectly examined, in despite of the objections taken to the present line, but that in August last, when no work of any consequence had been done upon that line, the late Chief Engineer was requested to have the alternative line examined, while you were informed, by letter, on the 27th of the same month, that such was proposed and were reminded that, until the question was decided, all works affected thereby must necessarily be suspended. The work, however, was not intermitted, nor was the above order communicated by you to your Chief Engineer until the 6th October.

6. The Government have frequently had occasion to notice the disregard evinced by the Railway functionaries in this country to their orders, in matters opposed to their own views and inclinations, and, in reporting these proceedings to the Honorable Court of Directors, they will feel it incumbent on them to solicit that the attention of the Railway Board be pointedly directed to this course of procedure, which, if persevered in, cannot but be highly prejudicial to the interest of the Railway Company as well as the Government.

I have, &c.,

(Signed) T. T. PEARS,

Madras, 3rd December 1856.

Consulting Engineer for Railways.

LAND FOR RAILWAY.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

May I request you will favor me with a copy of the "correspondence which has passed between the Honorable Court and the Board", referred to in the 9th para of a letter to your address from the Managing Director, dated the 28th February last.

I have, &c.,

(Signed) T. T. PEARS,

Madras, 29th May 1856.

Consulting Engineer for Railways.

MADRAS RAILWAY, 3RD JUNE 1856.

No. 345.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

With reference to your letter, No. 258, dated 29th May, I have the honor to send you herewith a copy of the correspondence which has passed between the Honorable Court and the Board of Directors of this Company, referred to in the 9th paragraph of their general letter, to my address, No. 73, dated 28th February last.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

Submitted with report for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Copies of Correspondence, on the subject of the land to be provided by Government for the purposes of the Railway.

5, NEW BANK BUILDINGS,
LONDON, 14TH SEPTEMBER 1855.

DEAR SIR,

We have perused the paper, issued at Madras, containing the instructions from the Governor of Madras as to the land required for the purposes of the Railway.

By the terms of the Contract, Clause 3, the East India Company is to provide all land required for the Railway, or the works connected therewith, and for other conveniences connected therewith, and the Railway Company are required to deliver back to the Government all land issued in constructing the Railway for any temporary purpose, but not necessary to be retained after its completion.

By the spirit, as well as by the terms, of this clause we understand that the Railway Company is to have all land necessary, or convenient, for any purpose of construction of the Railway, provided by the East India Company, free of cost, and if eventually any part of the land so provided and used is not required for the permanent works, it is to be given up.

It appears to us that clause 9, of the rules, is inconsistent with this understanding, and should be rectified. The Railway Company are not to pay for, or purchase, any land. They are to have temporary possession of all they require for purposes of construction, and by clause 9, of the Contract, are to have a lease for 99 years of such as they may require permanently. But there is no provision for their purchasing, or acquiring, any land in India as freeholders, and we conceive that such an arrangement would be inconsistent with the principle of the Contract between the Railway Company and the East India Company, if not with the policy pervading the whole arrangement.

We conceive that it will only be necessary to point this out to the authorities here, who will no doubt see that the instructions are altered on this point.

We return the rules, and are, &c.

(Signed) J. C. and H. FRESHFIELD.

To J. WALKER, Esq.

MADRAS RAILWAY COMPANY,
26TH OCTOBER 1855.

No. 316.

SIR,

The Board have received, from their Agent and Manager at Madras, a copy of rules, for the guidance of the Company's officers in the survey and construction of the Railway, sanctioned by the Government, under date the 5th July last, and furnished by their orders to the Collectors of Districts traversed by the line, and to the Railway officers. Of these rules the following are paragraphs.

8. "In submitting (with surveys) applications for ground required for temporary purposes, "as brickfields, sand and ballast pits, turf ground, temporary bungalows, &c., no greater space "than is likely to be actually required is to be applied for, and in the case of bungalows it is "desirable that, when possible, land of little value should be selected."

9. "In forwarding application for the possession of land, it should be distinctly explained "for what purpose it is required, and whether it falls within or without the limits of that ultimately required for the way and works. The whole of the land required for these is conveyed "by Government, under Clause 3 of the deed of Contract: but all other, whether for brickfields, "ballast pits, or other such purposes, will be paid for by the Company."

The question, whether these instructions as to the land required for the purposes of the Railway are consistent with the terms and spirit of the Contract, having been referred to the Company's Solicitors, I am desired by the Board to submit for the consideration of the Honorable Court a copy of their letter on this point.

I am, &c.,

(Signed) J. WALKER.

To SIR J. C. MELVILL, K. C. B.

EAST INDIA HOUSE, 6TH DEC. 1855.

SIR,

I have received and laid before the Court of Directors of the East India Company your letter, No. 316, dated 26th October, together with its enclosure, from the Railway Company's Solicitors, in which doubts are raised as to the consistency of certain rules, which have been promulgated by the Madras Government, for the guidance of the officers employed in the survey and construction of the Railway, with the terms of clause 3, of the deed of Contract regarding the provision of land for the Railway.

The Court desire me to state that they cannot concur in the view taken by Messrs. Freshfield, but are of opinion that land required for the purpose of providing materials for the works of the Railway, whether the works are constructed by means of Contractors or by the Railway Company's officers themselves, is not to be provided at the expense of Government.

I am instructed to forward, herewith, for the information of the Directors, a copy of the rules which have been in operation in Bengal, and which the Court observe are the same in spirit with those referred to in your letter.

I have, &c.

(Signed) J. C. MELVILL.

To JAMES WALKER, Esq.

(ENCLOSURE.)

Copy-Rules for the purchase of land required for incidental purposes, connected with the Railway in the Bengal Presidency.

That all land required for incidental purposes, connected with the Railway, be taken by the Railway Commissioner.

B. This paragraph merely declares how the Government Officer shall get possession of the land while the following para. C. declares that whatever amount of land he thus gives to the Railway Company, the contractor may take materials from within the limits thereof for brick, ballast, &c. This proceeding has never been interfered with here.

That such land, if within the prescribed limit (100 yards wide), be taken under the Act XLII of 1850; if otherwise, by private bargain, when reasonable terms can be obtained.

That the contractors be at liberty, as heretofore, to take earth for bricks or ballast from the land given to the Railway Company, for side cuttings or other purposes, but that they be required to pay rent for all land that may be taken expressly for their own use.

5 NEW BANK BUILDINGS,
LONDON, 27TH DECEMBER, 1855.

DEAR SIR,

We have perused the letter from Sir J. C. Melvill, to you of the 6th instant, referring to a letter from us to you of the 14th September, and stating that the Court do not concur in the views expressed in it, and further enclosing (copy) Regulations, published in Bengal, which are represented as being framed in the same spirit as those acted on at Madras.

We have perused these extracts from the Bengal Rules, but are unable to recognize in them the spirit of identity assumed to exist between them and those published at Madras.

The Bengal Regulations provide (conformably with the Contract) that all land required for Railway purposes should be taken by a Commissioner—part of them compulsorily, part by agreement.

With these arrangements, which affect the Government, the Railway Company have nothing to do.

The regulations then provide that the Railway Contractors may take bricks and ballast from the lands provided for the Railway Company, but provide that, if they require land "expressly for their own use," they must pay for it.

We see no reason to object to these provisions. The East India Company is not bound to find any land for persons acting as Contractors for Railway works. They may, therefore, impose any terms they like upon such persons.

The question put to us, and which occasioned our letter of the 14th September, was whether the East India Company could lay down a fixed rule, that the Railway Company should have land to the extent of 100 yards wide free, and pay for any further lands required.

Our opinion upon that point was, and is, that the East India Company are not entitled to lay down any such rule.

By clause 3, of the Contract, the East India Company is to provide "all land required for the Railway and the works connected therewith, and proper Stations, Offices, Warehouses and other conveniences for the same," and directs "that all land, which shall not be permanently required for the purposes of the Railway Company, shall, as soon as practicable, be restored to the East India Company."

Clause 9 then contains an engagement, by the East India Company, to grant a lease to the Company, of so much of the land as shall be required for the completed line, and for the works and conveniences thereto belonging, for a term of 99 years.

It is obvious that these provisions embrace a free grant of the land necessary for Railway purposes, as well permanent as temporary, and they have always been so treated on all sides, but especially by the Railway Board, in their statements to the public and their proprietary, in which it has always been said that the land required is provided free of cost. It is not inconsistent with these arrangements that, if any part of the line is made by Contractors, they may make arrangements with the East India Company for land required, in the terms of the Bengal regulation, "expressly for their own use."

But while the terms of the (extract) Regulations, framed at Bengal, which we had quoted, do not appear to us to touch the principle regulating land required, not by the contractors for their own express use, but by the Company for the purpose of the Railway works, we must add that a further consideration of the subject has not enabled us to change the opinion we expressed in our former letter. All land required for the Railway purposes, whether permanent or temporary, is to be provided by the East India Company free; and if the East India Company should refuse land actually required for the Railway, because it was not within 100 yards of the line, we are clearly of opinion that such refusal would amount to a breach of the Contract with the Railway Company.

We must add that there is a form, in which the question might arise (which has not been actually presented to us) but which may possibly be the one which has given rise to the difference of opinion at Madras, viz., what would be the rights of the parties, if the Railway Company should require to occupy land, temporarily, at a distance from the line, for the purpose simply of making bricks or taking ballast from it. That particular contingency is not provided for in specific terms by the Contract. It may be that land might be convenient and yet not necessary, and then a question of intention might arise.

We cannot help thinking, however, as we stated in our former letter, that if land, so situate, were (though it were at a distance) indispensable to the Railway works, it ought to be provided by the East India Company. The spirit of the arrangement seems to us to be that the East India Company agree to provide all the land necessary to the Railway free of cost, and that this intention should receive a liberal construction. The Railway Company have no power to acquire any land except through this arrangement.

It is manifestly contrary to the terms of the contract for the East India Company to say that land lying beyond 100 yards of the line is not comprised in the arrangement, and we think it is inconsistent with the spirit of it to say that the Railway Company must pay for any land required for the Railway works.

(We are, &c.,)

J. C. and H. FRESHFIELD.

To JAMES WALKER, Esq.

5 NEW BANK BUILDINGS,
LONDON, JANUARY 14TH 1856.

DEAR SIR,

Referring to our two former letters, we have again perused the Regulations, published by the Government at Madras as instructions, for the Engineers of the Madras Railway Company, and collated them with the (extract) Regulations, published in Bengal.

The ninth of the Madras Regulations, as we understand it, assumes that no land, but that required for the permanent use of the "way and works," is to be conveyed free of cost to the Company, while all land required for temporary purposes "is to be paid for by the Company." If this be the meaning of the instructions, the provision is at variance with the spirit and meaning of the arrangement between the East India Company, as embodied in the Contract, which contemplates that all land necessary for the Railway, whether for temporary or permanent purposes, is to be delivered to the Company free of charge; it being stipulated that which is required for temporary purposes shall be surrendered, when the temporary purpose has been answered. The Bengal Regulations, in contrast with the Madras regulations, express that the Railway Company are to be at liberty to take ballast, or bricks, from the land provided for them, but limit the land to 100 yards in width along the course of the line. This Regulation is also inconsistent with the spirit of the Contract, in so far as it limits the land in a manner not prescribed by the Contract, and which may not admit (if it be strictly adhered to) of the construction of the Railway.

It is less objectionable, however, in principle than the Madras Regulations, because it seems to recognise the obligation of the East India Company to provide land for temporary purposes free of cost.

Upon the whole, we are disposed to regard both Regulations as laid down without any very critical reference to the Contract, and without any intention to do violence to it. But if in the administration of them, land necessary for the purposes of the Railway, whether temporary or permanent, is withheld, the attention of the Government should be directed to the subject. If when this has been done, a difference of opinion should be found to exist between the Government and the Company, we should be quite content, on the part of the Railway Company, to leave it to Mr. L. Wigram, the standing counsel of the East India Company, to decide what are the rights of the Railway Company under the Contract.

We return the papers.

We are, &c.,

(Signed) J. C. and H. FRESHFIELD.

To JAMES WALKER, Esq.

MADRAS RAILWAY COMPANY,
22ND JANUARY 1856.

No. 343.

SIR,

In reference to your letter of the 6th ultimo, intimating that the Court could not concur in the view, taken by Messrs. Freshfield, regarding the provision of land for the purposes of the Railway, and forwarding a copy of the rules in operation in Bengal, I am desired by the Board to state, that they have further consulted with their Solicitors on the subject, and have received from them the letters of which copies are enclosed.

In submitting these for the consideration of the Court of Directors, the Board do not feel it necessary to add anything to the opinions and views therein set forth, as to the terms and spirit of the Contract, and the effect of the different rules in force in Bengal and Madras on the subject of providing land. They recognise, with Messrs. Freshfield, the difference between the two, considering the Bengal Regulations less objectionable than those of Madras, in so much as while the latter appear to assume that no land, but that required for permanent use of the way and works, is to be conveyed free of cost to the Company, the former recognise the obligation of the East India Company to provide land for temporary purposes, also free of cost, though they limit that land to an arbitrary width of 100 yards.

These limits, it is no doubt to be apprehended, may in some instances be found less than the purposes of the Railway require; but as, on the other hand, that case may not occur, the Board have no desire to carry the discussion on the interpretation of the Contract farther at the present moment.

If the Court will be pleased now to substitute the Bengal Regulations for those promulgated at Madras, the Board will hope that the land, thus provided, may prove sufficient for the purposes of the Company, but if otherwise and difficulty should arise on this head, the Board will be quite ready to leave the question to an arbitration such as Messrs. Freshfield have proposed.

I am, &c.,

(Signed) JAMES WALKER.

To SIR JAMES C. MELVILL, K. C. B.

BOARD MEETING OF THE DIRECTORS.

At a Board held 17th January 1856,

Read a letter from the Solicitors, dated 14th instant, on the subject of land required for Railway purposes.

Resolved

That the letter from the Solicitors now read, together with their previous letter of the 27th December on this subject, be sent into the Court with a suggestion that the Regulations promulgated at Madras, as to providing land for Railway purposes be altered, and that the principle of the Bengal Regulations, as less objectionable, be adopted provisionally, and that in the event of the land so provided not being sufficient for the permanent and temporary purposes of the Railway, and difficulty arising on that head, a reference to the question involved in the correspondence be made to arbitration as suggested in the Solicitors' letter.

EAST INDIA HOUSE, 16TH FEBRUARY 1856.

SIR,

I have received and laid before the Court of Directors of the East India Company your letter, No. 343, dated the 22nd ultimo, forwarding, in reply to my letter of the 6th December last, copy of a further letter from Messrs. Freshfield, regarding the provision of land required for the purposes of the Railway.

Under Clause 3, of the deed of Contract, the East India Company engage to provide land "for the Railway and the works connected therewith, and proper Stations, Offices, Warehouses, and other conveniences, for the same," but Messrs. Freshfield still entertain the opinion that the East India Company are bound to provide, in addition to the land required for these purposes, such as may be needed for the purposes of the works of the Railway, viz. land containing ballast, stone, brick, materials, &c. The Court entirely dissent from this view. But adverting to the rules which have been established in Bengal, they will authorize the Madras Government to grant the same privilege to the Madras Railway Company, that has been accorded to the Railway Company in the Bengal Presidency, viz. the permission to use the land, to the extent of 100 yards in extreme width, which may be provided by the Government for the Railway, and to take therefrom materials for the works.

I am, &c.,

(Signed) JAMES C. MELVILL,

To JAMES WALKER, Esq.,

(True Copies.)

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 104.

To T. PYCROFT, Esquire,

Chief Secretary to Government, Fort Saint George.

SIR,

With reference to an Extract from Minutes of Consultation, No. 151, of the 20th May last, I have the honor to submit, for the information of Government, copy of the correspondence which has taken place between the Honorable Court and the Railway Board, on the subject of land required by the latter for temporary purposes; and I beg to bring to the notice of Government that the order of the Honorable Court seems, at first sight—though I may misunderstand it—to be at variance with the rules in practice in Bengal, though declared to be identical therewith.

2. In the rules in Bengal, submitted with my letter, No. 6, dated 22nd January 1855, and now quoted in this correspondence, it is declared "that the contractors be at liberty to take earth for bricks or ballast, &c., from the land given to the Railway Company,"—i. e. as I read it, within the limits of the land so given, whatever the extent of it may be. This has never been disputed here.

3. In the Managing Director's letter, to paras 9 and 10 of which my attention has been called, and the order of Government under acknowledgement, it is stated that the permission to use the land for similar purposes is limited to a width of 100 yards, of that which may be provided by Government for the Railway.

4. I must add, in explanation, that the width of land required by, and given to the Railway Company, is regulated by the height of bank or depth of cutting, that, for example, (according to tables published in Bengal) if the bank is 10 feet high, the total width of land required (for a double line) will be 273 feet; if the height of the bank be 20 feet, the width will be 457 feet, or upwards of 150 yards. According to our present practice, the Railway Engineers (or Contractor with their permission) might do what they like within those limits, and so might they, it appears, according to the Bengal rules: but by the instructions now forwarded by the Managing Director, this privilege is limited to a width of 100 yards.

5. It must be observed, too, that no authority is here given for placing this extent of ground (100 yards) at the disposal of the Railway Company, whether the character of the line, as above explained, require it or not; it only gives to them the privilege of making use of so much of the land which may have been given. Thus were the banks 4 feet high, the total width given is 50 yards; and they get all within, but nothing beyond that, for materials, ballast, &c.

6. I request I may be favored with instructions as to the communication to the Agent of new rules on the subject. The Railway Company here are more favorably situated now, than they would be by the introduction of the rule, which the Managing Director states to have been sanctioned by the Honorable Court.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 5th June 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 190.

Extract from the Minutes of Consultation, dated 21st June 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 5th June 1856.)

It is observed that the correspondence between the Railway Company and the Honorable the Court of Directors, of which copy has been furnished by the Agent and Manager to the Consulting Engineer and by him laid before Government, has not been communicated to the Government by the Honorable Court. The Court did indeed, with their despatch of 20th March last, send out copy of a letter from the Directors of the Madras Railway to their Agent, in which allusion is made to the subject—but the Court did not forward copy of their correspondence with the Railway Board on the question, nor did they mention it in any way.

2. Such being the case, the Government do not feel themselves at liberty to enter upon the consideration of the subject; but as it is one of much consequence to the Railway Company, they resolve to communicate Colonel Pears' observations to the Honorable Court at an early date, and to request their further instructions whether the existing practice at Madras shall be maintained, or whether any restrictions shall be introduced, according to what the Honorable Court apparently suppose to be the Bengal rule.

3. Meanwhile and until further orders, no change will be made in the practice hitherto in force on the Madras line.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 356.

Extract from the Minutes of Consultation, dated 22nd October 1856.

Read the following letter from the Secretary to the Government of India.

Communicates the terms on which land is granted to the Railway authorities in Bengal, and directs the discontinuance of the practice obtaining at Madras of giving land without restriction, to the Madras Railway Company.

(Here enter 26th September 1856.)

From the above letter from the Government of India, that authority would seem to be under the impression, derived from the perusal of the despatch from this Government to the Court of Directors, No. 11 of 1856, Financial Railway Department, that "it is customary at Madras to give land to the Railway Company, without restriction, for the preparation of materials."

2. The Governor in Council must observe that this is altogether a misapprehension, and he cannot perceive that such an inference is deducible from the terms of the despatch quoted. In para. 2 of that document it was stated that the Contractors were at liberty to take earth for

bricks, ballast, &c., from within the limits of the land given to the Railway Company, whatever the extent of that land might be. But it was not said that the land given to the Company was given without limit—or that they were allowed to take their materials wherever they chose. On the contrary, the land, as given under the Contract, is strictly regulated by the requirements of the line, height of embankment, &c., and no more given than is really necessary for the Railway and its works. Land thus given may be freely used for brickmaking, ballasting, &c. All that is so used beyond it must be paid for.

3. The practice obtaining at Madras is identical with that observed in Bengal, as described in para. 2 of Colonel Baker's letter, except that at Madras the restriction of 100 yards from the centre line does not exist, and all land beyond, or within, the 100 yards may be used without special sanction of Government—provided it is within the limits of the land given under Contract to the Railway Company, but not otherwise.

4. The Governor resolves to submit the above explanation to the Supreme Government, in reference to Colonel Baker's letter; but, before so doing, he will forward that letter and this extract to the Consulting Engineer, and ascertain from that officer whether there has ever been any deviation from the course as above described.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

No. 4565.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

To T. PYCROFT, Esq.,

Chief Secretary to the Government of Fort Saint George.

Public Works Department, } SIR,
Railway.

The despatch addressed by the Government of Fort Saint George to the Honorable the Court of Directors, under date the 9th ultimo, No. 11, respecting the provision of land for the Railway in the Madras Presidency and the works connected therewith, having been laid before the Right Honorable the Governor General in Council, I am instructed to communicate as follows.

2. Under the practice obtaining at this Presidency, a sufficiency of and is given, free of cost, to the East Indian Railway, for the site of the embankment or cutting, and for side cuttings and spoil banks; and the Railway Company, or Contractors, are permitted to use the land so given, if suitable, for brickmaking, the preparation of ballast, or for storing materials. No land is given beyond one hundred yards from the centre line without the special sanction of Government. Land is obtained by the Agency of Government Officers, for the use of the Railway Company, or Contractors, in brick or ballast making, but on the understanding that, in such cases, it is to be paid for by the person using it.

3. It appears, however, from the despatch of the Government of Fort Saint George above quoted, that it is customary, at Madras, to give land to the Railway Company without restriction for the preparation of materials. If this be really the practice, the Governor General in Council is of opinion that it should be discontinued; and so far as he understands the principle of the Railway Act, and the agreement between the Railway Companies and the Honorable East India Company, His Lordship in Council considers that more land than is required really for the Railway and its works ought not to be taken, even within the prescribed one hundred yards, whether it would be convenient for contractors or not.

I have, &c.,

(Signed) W. E. BAKER, LIEUTENANT COLONEL,
Secretary to the Government of India.

Fort William, the 26th September 1856.

(True Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 219.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

Sir,

I have the honor to acknowledge the receipt of Extract from Minutes of Consultation, No. 356, dated 22nd instant, forwarding copy of a letter from the Secretary to the Government of India, D. P. W., on the subject of the grant of land to the Railway, and requesting me to report, if there has been any deviation from the rule existing in this Presidency, as explained in the above Minutes of Consultation.

2. In reply, I have the honor to state that I am not aware that there has been any deviation from those rules.

3. I beg further to point out, with reference to para. 2 of the Minutes of Consultation referred to, and para. 2 of Colonel Baker's letter, that the practice at this Presidency only seems to differ from that followed in Bengal in that no land is given here, whether within, or in excess of, 100 yards from the centre line, without the special sanction of Government, conveyed through this office.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th October 1856.

REPORT ON THE LINE OPENED TO TRAFFIC
BETWEEN MADRAS AND AMOOR.RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 183.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

Sir,

I have the honor to submit, for the information of Government, an abstract statement exhibiting some of the characteristic features of that portion of the Madras Railway lately opened to public traffic.

2. The line is opened from Madras as far as Arcot, the Station, bearing this name being about 3 miles from the Cantonment of Arcot (Rancepett) and about 2 miles from the large commercial town of Wallajahnuggur. The distance is 65½ miles.

3. The total difference of level, between the Termini of this portion of the line, is 558·66 feet, giving an average rise of 8·6 feet per mile.

4. The total amount of earthwork reported is 3,370,000 cubic yards, giving an average of 51,650 yards per mile.

5. The total amount of masonry, on bridges and drains, is 52,158 cubic yards, giving an average of 799 cubic yards per mile. It should be observed that the earthwork on the first 25 miles, and the works of masonry throughout, are for a double line.

* Near Arcot.

6. It will not escape observation that, while the average rise per mile is only 8·6 feet, there is one* plane rising at no less than 1 in 176, or 29 feet in the mile.

7. This is doubtless a defect on this portion of the line, and is the more worthy of notice here, because I believe that had this, or any greater length of the line, been determined in all its characteristics, as a whole, before any work was commenced, gradients of so unfavorable a character as this might have been avoided.

8. In the anxiety felt by all parties to get on with a work of so much importance to the country, and the character of the entire country being such as to convey the impression of great uniformity up to, and even beyond, this point, the work on the first 50 miles was set out, and undertaken, before the section on the remainder had been determined.

9. Once committed to the line so far, I am not prepared to say that this gradient could have been avoided.

10. Recognizing, in this circumstance, the importance of considering and determining railway gradients upon whole lines, or at all events upon whole portions, between any two ruling points, the experience gained on this occasion should not be lost sight of, and it is solely with this view that I have thus noticed the subject.

11. The entire cost of this portion of the work, i. e. the capital sunk in its construction, cannot of course be stated with accuracy, until the whole, or a very much larger portion, of the lines undertaken by this Company has been completed. The difficulty arises mainly from the impossibility of rightly distributing general charges.

12. Moreover, this portion of the line is not yet wholly complete in stations, fencing, &c., and it has been determined that maintenance of way for one year shall be charged to capital.

13. I have an additional difficulty in not having yet been placed in possession of the expenditure, due to the different portions of the works on account of stores and the outturn of workshops—the Agent and Manager not having yet had it in his power to furnish correct returns of these.

14. We have information enough, however, to afford some idea of the real cost in this country of works of this nature.

15. I am indebted to the Chief Engineer of the Railway for a memo., which, taken from accounts brought up to a later date than any yet rendered to my office, shows that, up to the end of May last, the expenditure in the Engineer Department, upon these 65½ miles, in earthwork, masonry, ballasting, laying permanent way, fencing, miscellaneous, &c., amounted to Rs. 8,80,491 2 5

That the workshop and store account for aid rendered in the above department, for tools and for materials of the permanent way, amounted to ..	18,42,900	5	3
That the special Superintendence in the Engineer department had cost... ..	1,16,232	10	5
Contingencies connected therewith.....	6,605	15	7
The total actual expenditure upon this portion of the line (the last few months not having yet been actually passed by Government) would thus become.....	28,46,230	1	8

To this we have to add certain estimates and proportion of general charges, which I thus assume :

½ Agency and Management.....	40,000	0	0
½ Chief Engineer and his Establishment.....	40,000	0	0
Cost of completing the minor stations.....	30,000	0	0
* From the above Memo. Workshop charges not yet included....	*50,000	0	0
Completion of road and maintenance of way for one year.....	1,50,000	0	0

Total Rupees..... 31,56,230 1 8

16. This would give, on 65½ miles, an average cost (exclusive of the Madras Terminal Station) of about Rupees 48,400 or £ 4,840 per mile.

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MADRAS RAILWAY, TRAFFIC MANAGER'S OFFICE,
13TH MAY 1856.

No. 97.

To MAJOR T. A. JENKINS,
Agent and Manager.

SIR,
Referring to your letter, No. 36 of the 5th instant, I have the honor to submit the following as the staff required in the Traffic department, for the opening of the Railway for Traffic from Royapoorum to Arcot.

TRAFFIC MANAGER'S OFFICE.

1 Clerk at	Rupees 50
3 " each	" 35,30,25
2 " (relieving)	" 35
6 Assistant Guards at	" 40
20 Gatesmen at	" 6

ROYAPOORAM STATION.

1 Station Master at	Rs. 100
1 Booking Clerk at	" 60
1 do. at	" 35
1 Ticket Collector at	" 35
1 Goods Clerk at	" 60
1 do. at	" 35
2 Pointsman at	" 9
8 Peons at	" 7
20 Porters at	" 6

PERAMBORE STATION.

1 Station Master at	Rs. 60
1 Booking Clerk at	" 35
1 Pointsman at	" 9
2 Peons at	" 7
4 Porters at	" 6

RED HILLS ROAD.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
3 Porters at	" 6

AVADY STATION.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
2 Porters at	" 6

TINNANORE STATION.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
3 Porters at	" 6

TRIVELLORE STATION.

1 Station Master at	Rs. 60
1 Booking Clerk at	" 25
1 Pointsman at	" 9
2 Peons at	" 7
6 Porters at	" 6

CUDUMBATORE STATION.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
3 Porters at	" 6

CHINNAMPET STATION.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
2 Porters at	" 6

COMPANYPET STATION.

1 Station Master at	Rs. 60
1 Booking Clerk at	" 25
1 Pointsman at	" 9
2 Peons at	" 7
6 Porters at	" 6

SHOLINGHUR STATION.

1 Station Master at	Rs. 40
1 Pointsman at	" 9
1 Peon at	" 7
3 Porters at	" 6

ARCOT STATION.

1 Booking & Goods Clerk at	Rs. 60
1 Ticket Collector at	" 35
1 Pointsman at	" 9
4 Peons at	" 7
11 Porters at	" 6

THE WHOLE FORMING A TOTAL OF

1 Station Master at	Rs. 100
3 do. at	" 60
6 do. at	" 40
2 Booking Clerks at	" 60
2 " at	" 35
2 " at	" 25
1 Goods Clerk at	" 60
1 " at	" 35
2 Ticket Collectors at	" 35
1 Clerk at	" 50
3 " at	" 35
1 " at	" 30
1 " at	" 25
6 Assistant Guards at	" 40
12 Pointsman at	" 9
24 Peons at	" 7
67 Porters at	" 6
20 Gatesmen at	" 6

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2. With reference to the second para. of your letter, I think we shall require an advance of Rs 1,000 (one thousand) for the Stations upon the line, in carrying on the Goods Traffic. In many instances, goods cannot be delivered in time to enable the Station Master to collect the amounts, to transmit the cash daily. I therefore propose that they shall have a sufficient sum advanced to enable them to remit the amounts shown upon the returns daily, a principle adopted upon many lines at home with great convenience and success. The balance, thus advanced, may be probably distributed as follows.

Royapoorum.....	Rs. 500
Trivellore.....	" 100
Companypet.....	" 100
Arcot.....	" 200
Other Stations.....	" 100

I have, &c.,

(Signed) H. A. FLETCHER.

Traffic Manager.

(True copy.)

T. A. JENKINS,

Agent and Manager.

No. 109.

On letter from the Agent and Manager of the Madras Railway Company, No. 297, dated the 19th May 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent in submitting a letter, from the Traffic Manager, stating the establishment in the Traffic department that will probably be required in working the line to Arcot, suggests that he be permitted to work the line for one half year without any fixed establishment, employing such as he finds necessary, and charging in monthly contingent bills. I think the proposition a good one, and would recommend it to the approval of Government;—the Agent being requested to furnish a report some time before the end of the year, so that the fixed establishment may be brought into operation on the 1st January next.

2. The Agent should, I think, be called upon to explain the necessity of a "Station Master" on Rupees 100 at Royapooram, in addition to Mr. Brealey, styled also "Station Master" and appointed some time ago from home.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 7th June 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 183.

Extract from the Minutes of Consultation, dated 14th June 1856.

Read the following observations of the Consulting Engineer, on a letter from the Agent and Manager of the Railway Company.

(Here enter 7th June 1856.)

The Government approve of the Railway Agent's proposition, for working the line between Madras and Arcot, for one half year without any fixed establishment in the Traffic department, employing only such as he may find necessary, and charging the expense in monthly contingent bills, and they desire that the Agent be requested to furnish, before the close of the year, a report

on the establishment, which his knowledge of the requirements of the Traffic department may then show to be necessary, in order that the same may be brought into operation from the 1st of January next, as a permanent arrangement.

2. Colonel Pears will, as suggested, call upon the Agent to explain the necessity of a "Station Master" on Rupees 100 at Royapooram, in addition to Mr. Brealey, styled also Station Master and appointed from home.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

MADRAS RAILWAY, 24TH JUNE 1856.

No. 409.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 311, dated the 18th instant, and the order of Government, No. 183, dated the 14th idem, I have the honor to state that it is not intended to retain Mr. Brealey at Madras, but to employ him at the other Terminal. The working of the line at the Presidency will be specially looked to by the Traffic Manager and his assistant, having a Station Master at Royapooram, on a salary of Rupees 100 a month.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted with observations for the orders of Government.

T. T. PEARS,

Madras, 1st July 1856.

Consulting Engineer for Railways.

No. 139.

On a letter from the Agent and Manager of the Madras Railway Company, No. 409, dated the 24th June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

*Extract Minutes of Consultation, Financial Railway Department, No. 183, 14th June 1856.

With reference to a late order* of Government, the Agent explains that it is proposed to employ Mr. Brealey, the Station Master sent out from home, at the Western Terminus of the line, and as the Traffic Manager and his assistant will be occupied in the general management of the entire traffic, it is desirable to have an efficient Station Master under their orders at Royapooram. The explanation I think satisfactory, inasmuch as it is evidently of importance to have an efficient and experienced man at the other Terminus, and Mr. Brealey is the only man they have of this description available.

T. T. PEARS,

Madras, 1st July 1856.

Consulting Engineer for Railways.

SUNDAY TRAINS.

PUBLIC DEPARTMENT.

No. 808.

Extract from the Minutes of Consultation, dated 9th July 1856.

Read the following letter.

MADRAS,
POST MASTER GENERAL'S OFFICE,
7TH JULY 1856.

No. 646.

FROM R. H. WILLIAMSON, Esq.,

Post Master General.

TO T. PYCROFT, Esq.,

Chief Secretary to Government in the Public Department, Fort Saint George.

SIR,

In submitting the correspondence noted in the margin for the consideration of the Right Honorable the Governor in Council, I have the honor to state that, in consequence of the stoppage of the trains, the mails, on the Western line, were neither received nor dispatched yesterday.

I was under the full impression that the Government intended the mail to be conveyed on the Railway on Sunday as well as on other days, and have to observe that the letter, addressed by me to the Agent and Manager on Saturday evening, was written as a mere matter of form.

I am apprehensive that the stoppage of the Western mails, on Sunday, may entail great inconvenience both on the Government and on the public, as notwithstanding the receipt of letters at the Post Office up to 2.45. P. M., for which I hope in a few days to mature arrangements, it will scarcely be possible for the public offices to complete their Saturday's correspondence for dispatch at that hour, which must therefore involve its detention in the Post Office until Monday afternoon; again, in addition to the 24 hours delay, caused by the non-arrival of the packets for the interior on Sunday morning, the receipt of a double mail on Monday will seriously retard the delivery.

I have, &c.,

(Signed) R. H. WILLIAMSON,

Post Master General.

Madras, Post Master General's Office,
7th July 1856.

MADRAS, POST MASTER GENERAL'S OFFICE,

5TH JULY 1856.

No. 634.

TO THE MANAGER AND AGENT MADRAS RAILWAY COMPANY, MADRAS.

SIR,

It being understood that a mail train will run on Sundays, I have the honor to state that the mails will accordingly be at the Amoor and the Madras termini to-morrow at the usual hours.

I have, &c.,

(Signed) R. H. WILLIAMSON,

Post Master General.

(True Copy.)

(Signed) R. H. WILLIAMSON,

Post Master General.

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MADRAS RAILWAY, 5TH JULY 1856.

FROM MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

TO R. H. WILLIAMSON, Esq.,

Post Master General.

SIR,

I have the honor to acquaint you, in reply to your letter, dated the 5th instant, that in consequence of its not having been anticipated, that mails would have to be conveyed on Sundays, Trains have not been arranged for the purpose, as it is not the practice, I am informed, on the East Indian Railway to run Sunday Trains.

* I shall submit the subject for the orders of Government.

I have, &c.,

(Signed) T. A. JENKINS,

Agent and Manager.

(True Copy.)

(Signed) R. H. WILLIAMSON,

Post Master General.

ORDER.—Referred to the Consulting Engineer for his remarks.

(True Extract and Copies.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY, 8TH JULY 1856.

No. 450.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor to state that, through some misunderstanding, arrangements had not been made to run Railway Trains on Sundays, as required by the Post Master General for the conveyance of the mails.

2. In a conversation I have had with the Post Master General, I have been informed that the following arrangement will meet his requirements, viz. that a Train leave Madras on Sundays at 6 A. M. for Arcot, returning the same afternoon, leaving Arcot at 3.30, and arriving at Madras at 6.45.

3. Being under the impression that such an arrangement will meet the public wants, as well as that of the Post Office, and at the same time be beneficial to the Railway, I have the honor to request that Government may be pleased to sanction the same.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 357.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

With reference to your letter, No. 450, of the 8th July, reporting that, through some misunderstanding, arrangement had not been made to run Railway trains on Sundays, and proposing on those days certain trains differing, in point of time, from those on week days, I have the honor to request your attention to the order of Government, No. 161, of the 2nd June 1856, wherein you will find it is directed "that a passenger train leave Arcot daily for Madras at 5.30 A. M., and Madras for Arcot at 3.30 P. M."

2. Your letter, under acknowledgement, affords no explanation of your reasons for proposing to change the hour on Sundays; nor does it appear whether the Post Master General desires the change or has merely acquiesced in it, and it certainly seems, at first sight, ill calculated to accord with his general postal arrangements.

3. I request to be favored with further explanation, and trust that, in the meantime, the order above quoted, regarding the daily train, will be observed.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th July 1856.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 100.

TO R. H. WILLIAMSON, Esq.,

Post Master General, Madras.

SIR,

I have the honor to forward, for your information, copy of a letter* from the Agent and Manager of the Madras Railway Company, and to request you will have the goodness to inform me, whether your postal arrangements are such as render it more convenient that the mail on Sunday should leave Madras at 6 A. M. and Arcot at 3.30 P. M., while on week days they leave Arcot early in the morning, and Madras in the afternoon.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th July 1856.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

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MADRAS RAILWAY, 17TH JULY 1856.

No. 473.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 357, dated 9th instant, I have the honor to acquaint you that arrangements have been made for the conveyance of the mails on Sundays, by Train running at the usual hours from Madras and from Arcot.

2. On reference being made to the Post Master General, upon the subject of the proposed change in the hour of the Sunday Trains, that Gentleman sent me a copy of a letter which he had addressed to you, No. 707, dated 10th instant, I need not therefore recapitulate what he said therein.

3. In your letter, under reply, you state that I have not given my reasons for proposing to change the hours of running Trains on Sundays. I beg to state that many complaints have reached me, from the public, of the want of accommodation by Railway, generally experienced by parties desirous of leaving Madras and returning the same day; for as the Trains are at present arranged, parties proceeding from Madras are obliged to remain out two nights. This leads me to believe that we shall find it desirable, in a short time, to run a Train out from Madras every morning, and one in every afternoon, in addition to the present Train; the want of the morning Train out from Madras, returning in the evening, is more particularly felt on a Sunday, when so large a number of persons, especially Hindoos and Mahomedans in the service of the Government, and the European commercial public are disengaged, and would be enabled to avail themselves of the facilities offered by the Railway for proceeding with their families, without loss of a day's wages, a short trip into the country; which, under the present arrangements, they are debarred from doing.

4. Having these reasons in view, and the Post Master General having stated that he would adopt his mails, if approved of, to the times that would best suit the Railway, I was led to request a change in the present times, and therefore beg that you will lay the proposed alteration before the Government.

I have, &c.,

T. A. JENKINS,

*Agent and Manager.*MADRAS, POST MASTER GENERAL'S OFFICE,
10TH JULY 1856.

No. 717.

TO THE CONSULTING ENGINEER FOR RAILWAYS.

SIR,

In reply to your letter, under date the 9th instant, forwarding, for my information, copy of a communication from the Agent and Manager of the Madras Railway, I have the honor to state that it would certainly be more convenient, for the operations of my Department, that the Mails on Sunday should leave Arcot early in the morning, and Madras in the afternoon, as on week days; but in the event of the Government and the Railway authorities deeming it desirable that, on Sundays, the trains should leave Madras early in the morning, and Arcot in the afternoon, I shall, conformably thereto, make the best arrangements in my power to meet the requirements of the public.

The great inconvenience, arising from the entire stoppage of transit of the Western mails on Sundays, would at all events be modified.

I have, &c.,

R. H. WILLIAMSON,

*Post Master General.*RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 155.

TO T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

I have the honor to acknowledge the receipt of an order of Government, in the Public Department, No. 808, dated 9th instant, forwarding for my remarks copy of a letter from the Post Master General, with that of correspondence between that officer and the Railway Agent, on the subject of the Sunday Mail train.

2. It seems that, on the first Sunday after the opening of the line, the Mail having been carried daily during the week (from the 1st to the 5th inclusive) no train was in readiness either at Arcot, or at Madras, and the Mails consequently were not conveyed at all that day.

From the Agent, 450, 8th July 1856.

To do, 357, 9th July 1856.

From the Agent, 473, 17th July 1856.

Extract from the Minutes of Consultation, No. 161, dated 2nd June.

3. From the correspondence which has passed between the Agent and Manager and myself, now submitted, it is clear that the circumstance is to be attributed to an oversight, rather perhaps to a misunderstanding of the order of Government regarding "daily trains"—the Agent and Manager having caused to be inserted in the time table the words "Sundays excepted".

4. It was a mistake arising, I am informed, from the practice in England being to consider Sunday arrangements apart from the daily or week day trains.

5. The obvious meaning, however, of the Government having been suggested to the Agent, the trains run now on Sundays as on other days—i. e., one train carrying the mail each way.

6. But the Agent takes the opportunity of proposing a different arrangement on Sundays, viz. that the time of starting from the Madras and Arcot termini should be changed, that the up train to Arcot should be the early one, and the down train the evening one.

7. The Agent having reported that the Post Master General concurred in this arrangement, No. 100, dated 9th July 1856. I considered it my duty, before reporting to Government, to refer to that Officer by letter, copy of which is appended; and it would appear, from No. 717, 10th July 1856. his reply, that the change is far from being desired by him, and was acquiesced in from a wish to meet the supposed views of the Government and the Agent.

8. The despatch of the Mail on week days at $\frac{1}{2}$ past 3 P. M. from Madras, and from Arcot at $\frac{1}{2}$ past 5 A. M., and on Sunday at 6 A. M. in the morning from Madras, and from Arcot at 3.30 in the Evening, cannot possibly be a good or convenient postal arrangement, either for the department or the community at large.

9. The Agent and Manager has, however, it appears, another object in view, viz. Sunday excursion trains from Madras.

10. I do not think the time has arrived for entering upon the question of Sunday excursion trains.

11. To the popular practice of tempting people to travel by means of such trains (in which I do not include special trains for periodical gatherings, festivals, public amusements, &c.), I am inclined to object, as an empirical mode of raising money on these great national highways.

12. In the present case, the result might be, while establishing extra work among the Railway Officials on Sundays, to induce, so long as the feeling of curiosity still existed, a few people to travel up and down the rail on Sundays. This would not last long. There is nothing but the feeling of curiosity regarding the Railway (a feeling soon to pass away) to induce the natives of the country to leave Madras on a Sunday, they are much more likely to wish to come in to the Capital

Town for the day, from the adjacent district, than to go out into those districts from the Town; and the result would be two trains each way on the Sunday, to perform the ordinary business of the Railway—not yet nearly enough to employ one.

13. I consider it of the highest importance, that we should, from the beginning, prevent such error in the management of these works as that into which the Agent and Manager seems now disposed to fall, in accordance with the almost universal and ruinous practice, in England, of immediately running more trains because "many complaints have reached" him (para 3).

14. The present trains do not fill, notwithstanding that, for all the ordinary business of the country, they start at the most convenient hours. I have no doubt the number of passengers will steadily increase, but it will be time enough to have a second train, when we see the one now running each way tolerably well filled.

15. I will only repeat that, whatever may be the custom of the people in England, however desirable to give the inhabitants of Towns there the means of getting into the country on Sundays, the case is quite different here; no one can suppose that the native inhabitants of Madras, when once they have gratified their curiosity by a ride on the Railway, will have any inducement whatever, except at periodical festivals, to draw them out into the districts between Madras and Arcot on the Sunday.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Amboor, 23rd July 1856.

PUBLIC DEPARTMENT.

No. 978.

Extract from the Minutes of Consultation, dated 19th August 1856.

Read again letter from the Post Master General Madras, dated 7th July 1856.

Read also the following letters from the Consulting Engineer for Railways.

(Here enter 23rd July 1856.)

It appears from the foregoing letter that the stoppage of the trains on Sunday the 7th ultimo, whereby the western mails were neither received nor dispatched on that day, arose from a misunderstanding of the order of Government regarding "daily trains;" arrangements, however, have now, it is observed, been made to run the trains on Sundays as on other days, i. e., one train conveying the mails each way.

2. The Right Honorable the Governor in Council quite concurs in the views of the Consulting Engineer, in regard to the time of starting the trains on Sunday from the Madras and Arcot termini. The arrangement which obtains during the week best meets the requirements of the Postal Department, and no sufficient reason is shown for departing from it on Sunday.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MIXED TRAINS.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 157.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to request that you will have the goodness to obtain Sanction of Government for the running of our Trains, upon the opening of the line, as specified below.

I beg to state that I concur in the opinion, expressed by the Traffic Manager, that it would be desirable, in the first instance, to run mixed Trains—one "out" from Madras to Arcot, one "in" from Arcot to Madras, viz.

EAST.

From Arcot..... at 6 A. M.
Arriving at Madras..... at 9.15 A. M.

WEST.

From Madras..... at 3.30 P. M.
Arriving at Arcot..... at 6.45 P. M.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 19th March 1856.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 28th May 1856.

MADRAS RAILWAY, TRAFFIC DEPARTMENT,
17TH MARCH 1856.

No. 71.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. I have the honor to request that you will inform me what Trains it is proposed should be run upon the opening of the line, and at what hours?

2. I beg to suggest that, although it may be eventually desirable to run two Trains each way daily, that at the opening, one Train only each way daily should be run.

3. As the number of Passengers, or weight of goods, may not, in the first instance, be sufficient to pay the expenses of being separately run, I would suggest that, at the opening, the Passenger and goods be run together, a course which has been pursued upon some of the Irish Railways without objection—I would particularly mention the Waterford and Kilkenny Railway, which had never a sufficient Traffic in either Passengers or Goods to justify the Company in separating them.

4. With a view to running the Trains during the day, and to avoid night work, which in the first instance, I think, is desirable, and also with a view to carrying the mails, I would suggest that the Trains run at the following times.

EAST.
From Arcot..... 6.0 A. M.
Arriving at Madras..... 9.15 „

WEST.
From Madras..... 3.30 P. M.
Arriving at Arcot..... 6.45 „

I have, &c.,
(Signed) H. A. FLETCHER.
Traffic Manager.

(True Copy.)
T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 162.

To MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,
With reference to your letter, No. 157, of the 19th instant, I have the honor to request you will inform me, whether it is your intention that the train, referred to, stop at all stations or not. I would also suggest to you that, at least during the summer months, or from 15th of March to 15th September, the train might with advantage leave Arcot earlier—say $\frac{1}{2}$ past 5 A. M.

I have, &c.,
(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 29th March 1856.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 166.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer.

SIR,
1. With reference to your letter, No. 162, dated the 29th ultimo, I have the honor to state that it is proposed, on the first opening of the line, that the trains should stop at the following Stations:

Perambore.
Avady.
Tinnanore.
Trivellore.
Chinnamapett.
Companypett.
Sholingur.
Arcot.
And subsequently at
Red Hill Road
and Cuddumbathoor,
when found advisable.

2. There is no objection, that I can learn, to the Train leaving Arcot at 5.30 A. M. instead of at 6 A. M., except that it does not afford any daylight for persons coming from Wallajanuggur and Arcot, and it may not be so convenient to people coming into Madras on business to arrive by train at 8.45, in place of 9.15; but I do not perceive that it is a matter of any consequence.

I have, &c.,
T. A. JENKINS,

Madras, 2nd April 1856. *Agent and Manager.*

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Madras, 28th May 1856. *Consulting Engineer for Railways.*

No. 85.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 157 and 186, dated 19th March and 2nd April 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent, in anticipation of an early opening of the line of Railway to public traffic, submits for sanction of Government a proposal to run certain trains, when such opening shall have been authorized.

2. The Agent suggests, in his first letter, one train per diem each way, to start

From Arcot..... at 6.0 A. M.
From Madras..... at 3.30 P. M.

He has, however, no objection to offer to a suggestion made by me, that the train should leave Arcot $\frac{1}{2}$ an hour earlier, that is at $\frac{1}{2}$ past 5 A. M. I consider both, as far as the convenience of daily visitors to Madras is concerned, and that of persons wishing to reply to letters by the return mails, the earlier in the day the train arrives the better.

3. To Major Jenkins' suggestion to run mixed trains I object. We do not know, and have, I conceive, little reason to fear, that there will be not sufficient traffic for a passenger train and a goods train each way; at all events, it appears to me desirable to commence our operations here in such a manner as shall secure, to the uttermost, the comfort and safety of passengers. There are many objections to travelling in the same train with goods, and among them may be considered here the necessity of running (certainly in one direction) frequently empty vehicles which are liable to jump off the line:—moreover, with such trains, either the passengers must be carried slower than they have a right to expect, or the heavy goods must be carried at a higher speed than is consistent with economy, or, it may be presumed, was contemplated in framing the Tariff.

4. I would suggest, therefore, at least until the ascertained state of our traffic renders it imperatively necessary, that the passenger trains run as proposed, viz.

Leaving Madras daily..... at 3.30 P. M.
„ Arcot „ at 5.30 A. M.

and that the Agent be requested to consider and name the hour at which he would propose to run "Goods" trains, being reminded that, if there should not appear enough of daily business, a very simple arrangement would be to run a goods train either way on alternate days, having none on Sundays.

5. I would suggest, also, that the speed be limited to 20 miles the hour for passengers, including stoppages, and 10 miles an hour for goods—the maximum speed in the one case being 25 miles, in the other 15 miles the hour.

T. T. PEARS,
Madras, 28th May 1856. *Consulting Engineer for Railways.*

FINANCIAL (RAILWAY) DEPARTMENT.

No. 161.

Extract from the Minutes of Consultation, dated 2nd June 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Railway Company.

(Here enter 28th May 1856.)

The Government see no grounds for supposing that the traffic by the Railway will be insufficient for a passenger train and a goods train either way daily, and, as remarked by Colonel Pears, a remedy may be easily applied should such prove to be the case. It is, however, of much importance to make a good impression on Travellers at first.

The Right Honorable the Governor in Council, therefore, sanctions the proposal of the Consulting Engineer, that a passenger train leave Arcot for Madras daily at 5.30 A. M., and Madras for Arcot at 3.30 P. M., and that the Agent be requested to consider and name the hour at which the goods trains are to run.

The speed will, also, as recommended by Colonel Pears, be limited to 20 miles an hour for passengers, including stoppages, and 10 miles an hour for goods—the maximum speed being in the former case 25, and in the latter 15 miles an hour.

(True Extract.)

(Signed) T. PYCROFT, *Chief Secretary.*

MADRAS RAILWAY, 15TH SEPTEMBER 1856.

No. 602.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,

Consulting Engineer for Railways.

I have the honor to annex a copy of a letter,* from the Chairman of the Chamber of Commerce, bringing to notice the inconvenience experienced by the Public, under the present arrangement, of running the Trains between Madras and Arcot, which does not allow of Passengers proceeding thither and returning to Madras the same day.

2. A copy of a letter from the Locomotive Superintendent, No. 339, dated the 11th ultimo, in which he brings to notice the desirability of making some alteration, to lessen the labor and exposure, which the present mode of working the Goods Trains entails upon the Drivers and Firemen, and suggesting an alteration in the time of running the Trains, and that the speed be accelerated.

3. Extracts from a letter from Messrs. Parry and Co., pointing out that, in consequence of the Goods Trains leaving Arcot only 3 times per week, their Sugar has been subject to considerable detention after its arrival at that Terminus.

4. A copy of a letter from the Traffic Manager, No. 329, dated 12th September, and its annexment* from the Station Master at Arcot. The Traffic Manager in his letter points out in what way, in his opinion, the various matters of complaint may be rectified, and in the observations expressed by him, I beg to state that I fully

concur, and request that you will have the goodness to move the Government to sanction the running of mixed Trains, Goods and Passengers at the hours specified below.

TRAINS FROM MADRAS (WEST.)

Leave Madras at 6 A. M. and 3.30 P. M. daily, Sundays at 3.30 P. M. only without Goods.

TRAINS FROM ARCOT (EAST.)

Leave Arcot at 6.30 A. M. and 3.30 P. M. except Sundays, when the 6.30 A. M. only will run without Goods.

I have, &c.,

T. A. JENKINS, *Agent and Manager.*

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 21st October 1856.

CHAMBER OF COMMERCE,
MADRAS, 27TH AUGUST 1856.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

SIR,

1. I have the honor, by desire of the Chamber of Commerce, to bring to your notice the inconvenience experienced by the Public, under the present arrangement of running the Train between Madras and Arcot, which does not allow of a Passenger proceeding thither and returning to Madras on the same day, or within the twenty-four hours, and to suggest for your consideration the advantage of starting a Train from Madras every morning, at such an hour as will permit of its returning from Arcot in the evening of the same day.

I have, &c.,

(Signed) J. B. KEY,

Chairman.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT,
ENGINEER'S OFFICE, 11TH AUGUST 1856.

No. 339.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to call your attention to the present system of running the Goods Trains, with a view to making some alterations to lessen the labor and exposure which the present mode of working entails upon our men.

2. The Goods Trains are now running, as you will know, during the whole of the hottest part of the day, and the hours are so long in consequence of the slow rate at which the Trains are timed, that the men cannot endure the amount of fatigue of running these Trains daily for a single week, I am consequently obliged to employ two sets of men to do work, which by a modification of the system should be performed by one set; thus in effect doubling the necessary expense of driving wages per Goods Train mile.

3. The time at present occupied in running these Trains, between Madras and Arcot, (65 miles) is 6½ hours; the men come on duty an hour and a half before the appointed time for starting the Train, and rarely get away from their Engines till 1½ hour after arriving at the end of the journey, having to shunt their Train, drop their fire and examine their Engine before leaving. This gives the men daily 9½ hours' exposure and in addition to this, they must come into shed for about 2 hours 3 times a week to wash out their boilers, trim syphons, pack glands, &c., which gives an average of 10½ hours actual work per diem.

4. To obviate as much as possible this exposure, which must soon tell upon our men, I would beg to recommend that the speed of these Trains be accelerated, so as to accomplish the journey between Madras and Arcot in 4 hours and 20 minutes, being an average speed inclusive of stoppages of 15 miles per hour. This would reduce the running hours to about $7\frac{1}{2}$ hours and the total working hours to $8\frac{1}{2}$ hours per diem, and I believe that if the Trains are thus timed, and run during a cooler portion of the day, that one set of men can, without over fatigue, do this work daily.

5. I trust, therefore, that you will take this matter into your favorable consideration, and at the same time arrange, if practicable, to run the Trains at another time of the day, either in the morning or in the afternoon, as it is essential both for the sake of the men and for the economical working of the line, that their labor should be lightened, and exposure avoided as far it lays in our power to do it.

I have, &c.

(Signed) WM. BARTON WRIGHT,

Locomotive Superintendent.

Extract from a letter from Messrs. Parry & Co., dated 2nd September 1856.

Owing to the Goods Train leaving Arcot, only on 3 days in the week, our Sugar has been subjected to considerable detention after its arrival at that Terminus.

Much of the delay and risk above alluded to, we trust will be obviated, when your arrangements are such as to permit a Goods Train to leave Arcot on each day of the week.

(True Copies and Extract.)

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY, TRAFFIC MANAGER'S OFFICE,
12TH SEPTEMBER 1856.

No. 329.

To MAJOR T. A. JENKINS,

SIR,

Agent and Manager.

1. I have the honor to receive your letter, No. 105, of the 15th ultimo, with its enclosure from the Locomotive Superintendent, No. 339 of the 11th ultimo.

2. I quite concur with the Locomotive Superintendent that the Goods Trains could run with ease, and without any perceptible additional cost, at a speed of 15 miles an hour inclusive of stoppages.

3. The times of starting the Goods Trains as they at present run, were proposed with a view to avoiding meeting or passing places upon the line for the Passenger and Goods Trains; but as it would obviously be of advantage to the Locomotive Department if these Trains were dispatched at an earlier hour in the morning, I would propose that the Goods Train should leave Arcot at 6 A. M. and Madras at 5.0 A. M.; this arrangement, if approved, would necessitate the 5.0 A. M. Goods Train West to Arcot, and the 5.30 A. M. Passengers Train East to Madras, passing each other at one of the Road Stations, but I should apprehend no difficulty in such an arrangement, as it is commonly done upon all single lines of Railway.

4. In connection with this subject, I beg to bring to your notice some circumstances in connection with the present mode of working the Trains, which I think are worthy of attention.

5. First.—As regards the Passenger Trains, it is considered by many that the present early hour of departure from Arcot is very inconvenient, as it does not permit of sufficient time from daylight for any person to reach the Station from Wallajahnugger and the neighbouring villages.

I enclose copy of a letter from the Station Master at Arcot, dated 22nd ultimo, (but received on the 3rd instant), upon this subject, and I think it right to inform you that the inconveniences mentioned are not exaggerated. If possible I would suggest that this Train should leave Arcot at 6 A. M. or 6.30 A. M. instead of 5.30 A. M. as at present. I have very little doubt that the early hour at which this Train leaves Arcot, acts prejudicially to the Passengers Traffic, and I may say that it is generally complained of by the public.

6. Second.—You are aware that I have always considered that it would be advisable to run two Passenger Trains each way daily, so that the same accommodation might be afforded to those who wish to travel East as well as to those travelling West. I may now inform you that the want of a Train from Madras early in the morning, say 6 A. M., returning from Arcot in the afternoon, say 3.30 P. M., appears to be generally felt in Madras, as all classes, European and Natives, have at different times complained of it to me. I beg, as an instance of this feeling, to refer you to the letter of the Chamber of Commerce, addressed to you dated 27th ultimo, and I have no hesitation in saying that the Chamber of Commerce have only stated the wishes of the commercial community generally.

7. It would be impossible to say, with anything like certainty, what number of Passengers such additional trains would accommodate, but it appears to me reasonable to expect that they would prove a great accommodation to the Public, and considering that Madras has a population of upwards of 750,000, it is equally reasonable to suppose that they would prove remunerative to the Company.

8. Third. The Goods Trains now leave Madras and Arcot upon alternate days, a mode of working which I thought would be most economical at the opening of the line, and until the goods Traffic had, to some extent, become developed. The increase in the goods Traffic would, I think, justify the running of these Trains daily each way on and after the 1st proximo, or as soon as sanction can be obtained for the change. Upon reference to the weekly abstracts of Traffic you will perceive that there has been a gradual increase in the goods, and I am happy to observe that the increase continues; as an example of this I quote the goods Traffic for the months of July and August respectively. In the month of July we carried both ways 47,485 maunds, receiving Rupees 3,955. In August we carried 69,914 maunds, receiving Rupees 6,858, showing an increase, on the month, of 22,429 maunds, and Rupees 2,903. The Goods Trains at present are run by one of the large Engines, as it was found that the Tank Engines were unable to take the Trains—probably by running the Goods Trains each way daily, a Tank Engine could be again brought into use, until the Goods Traffic increases to the extent which will justify the large Engines being again used for this Traffic. There is no doubt that the Goods Traffic will greatly increase, and that the running of the Goods daily will become a matter of necessity. I am of opinion that it would materially assist us in developing this branch of our business, if the increased facility of a daily Goods Train were offered at once. It frequently happens that Goods arrive at the Arcot Station too late to be forwarded by the Train of that day, consequently they are detained there nearly 48 hours, causing frequent complaints. As an instance of this I beg to quote the following from Messrs. Parry and Co.'s letter to you, dated 2nd instant—"owing to the Goods Train leaving Arcot, only on three days in the week, our Sugar has been subjected to considerable delay after its arrival at that Terminus." "Much of the delay and risk above alluded to, we trust will be obviated, when your arrangements are such as to permit a Goods Train to leave Arcot on each day of the week." The advantages attendant upon a daily Goods Train each way are so obvious, that I trust you will urge its being sanctioned as early as possible.

9. Fourth.—If sanction could be obtained for running Goods and Passengers, by mixed Trains, two very important changes, affording great convenience to the public and attended with every prospect of advantage to the Company, without any great additional cost, could be effected, by allowing the Goods to be dispatched daily each way, and attaching Passenger Carriages, a course which, as formerly stated, is pursued in Bengal, and upon many Railways at home. The trains, under such an arrangement, could be run by any of the 4 classes of Engines, to ensure its having a full load, or working to the extent of its power.

10. The times of Trains I would propose would be as follows, consisting of Goods and Passenger.

TRAINS WEST FROM MADRAS.

	A. M. daily	P. M.	Sunday.
Leave Madras.....	6.0	3.30	3.30 P. M.

TRAINS EAST FROM ARCOT.

	A. M.	P. M.	
Leave Arcot.....	6.30	3.30	6.30 A. M.

11. I am of opinion that it would be of greater advantage to the Company, if the opportunity were afforded for Passengers to leave Madras at 6 A. M. on Sunday, returning from Arcot at 3.30 P. M., but I do not propose it, as it is not likely, after recent correspondence, to be sanctioned.

12. I think, after carefully considering the subject, that the above times of Trains, and the arrangement of running mixed Trains, would quite meet all that is desired by the public on the one hand, and would prove the most economical method the Company could pursue, with a view to the attainment of the desired objects on the other.

13. A Passenger Train daily each way would be provided at no greater cost than that of running the Goods Train daily, a measure which sooner or later will be forced upon us.

14. Goods will be forwarded twice a day, which will be of great advantage, and will materially assist in developing that Traffic.

15. A regular staff at Arcot and Madras can be systematically and constantly employed, which will prove a saving in coolie hire, as we are compelled to employ a large number of men to meet the large quantity of work to be done, every alternate day, at each end of the line.

16. We shall be able to run that class of Locomotive Engines of which we have the largest number, viz., the Tank Engines, and, generally, I feel confident the arrangement would be the best we could adopt.

17. If, however, sanction cannot be obtained for running mixed Trains, I beg to ask, for sanction to run the Goods Train daily, Sunday excepted, each way, leaving Arcot at 6 A. M. and Madras at 5.0 A. M.

I have, &c.,

H. A. FLETCHER,

Traffic Manager.

T. A. JENKINS,

Agent and Manager.

ARCOT STATION, AUGUST 22ND 1856.
No. 17.

To H. A. FLETCHER, Esq.,

Traffic Manager, Madras Railway.

SIR,
I beg to call your attention to the very great inconvenience and annoyance, caused to parties proceeding to Madras, and other stations on the line, arising from the very early hour, at which the Train leaves this Station. This inconvenience is severely felt and constantly complained of by all the Europeans whom business or pleasure cause to travel by Rail. But, although bad as it is for them, it is still more severely felt by the great bulk of Passengers, viz., the native population. These parties are afraid to travel in the dark, arising from their natural timidity as well as the fear of being robbed and ill treated, that they generally manage to arrive at this station on the previous evening, and as you are fully aware, when here, they are compelled to lay where they can. During the last fortnight we have experienced much rain and cold nights, and it is truly distressing to see

the miserable condition that these people are in. As I am firmly convinced that the interests of the Company will be promoted by strict attention to any just cause of complaint, I have deemed it my duty to bring this to your notice officially, as I believe that a remedy could easily be applied by altering the departure of the Train to a more seasonable hour.

I would suggest that the Train should start at 6. 30 A. M. instead of 5.30, as at present.

I am, &c.,

(Signed) WM. BREALEY.

(True Copy.)

H. A. FLETCHER,

Traffic Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 459.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

With reference to your letter, No. 602, of the 15th September 1856, I have the honor to request you will inform me what has been the nett and what the gross weight of your goods train on the average for the month of August, and what the average number of passengers per train each way? I beg to remind you also, with reference to the same subject, that a return called for in a letter from this office, showing in a prescribed form the composition of your train, the total ton mileage, gross and nett, has never yet been furnished.

2. I request also to be informed what is the maximum nett load, considering the weight of your stock and the character of the line, that in the opinion of your Locomotive Superintendent the several descriptions of Engines now in use are capable of drawing, at 15 miles the hour, in running west from Madras, what the load in running East from Arcot?

3. I also beg to be informed of the 69,914 maunds carried, according to Mr. Fletcher's letter of the 12th instant, No. 329, what portion was booked at Madras—what at Arcot.

4. There is one other point to be noticed in the correspondence forwarded with your letter, upon which it is desirable that I should be favored with further information. Mr. Wright states as an argument against running the goods train at the present moderate rate of speed, that the Engine drivers "cannot endure the amount of fatigue" involved in the driving an Engine for 6½ consecutive hours.

5. The time during which, in the heat of the day, an European Engine driver in this country can be with safety and propriety employed in driving an Engine, is a question, doubtless, of great interest and importance.

6. Perhaps, you will be good enough to state distinctly, what opinion you have formed on this subject; or if you should consider it premature to do so at present, it might be well, before finally determining so important a point, to ascertain what resolution they have come to on the East Indian and Great Indian Peninsular lines, and what may be the opinion of Medical Officers of local experience on the subject.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Ootacamund, 20th September 1856.

MADRAS RAILWAY COMPANY,
MADRAS, 7TH OCT. 1856.

No. 682.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,

Consulting Engineer for Railways.

1. With reference to your letter, No. 459, dated the 20th September, I have the honor to acquaint you that the gross weight of our Goods Trains on the average for the month of August was maunds 8,714, the average nett weight of ditto, maunds 2,689. The proportion of Goods Traffic from Madras to Arcot was maunds 25,520, and from Arcot to Madras was maunds 44,394. The average number of Passengers per train East to Madras was 187; and West to Arcot 209.

2. I annex a copy of a letter, No. 378, dated the 30th September, from the Locomotive Superintendent, giving the number of loaded vehicles which the several classes of Engines are capable of drawing.

3. I annex a copy of a letter, from the Consulting Physician, No. 155, dated the 3rd of October, giving opinion in regard to the number of hours that an Engine driver should in this climate work in the heat of the day on his Engine.

4. I also annex a copy of a letter from the Locomotive Superintendent, No. 385, of this date, giving further particulars in respect to the time Engine drivers have been employed with the Goods Trains.

5. As requested by you, I beg to state my opinion, based upon the experience, and the reports furnished to me during the last three months, that Engine drivers, if employed in the earlier part of the day, or in the afternoon or during the night, can work seven hours consecutively on their Engines for a days work, but if employed during the heat of the day, four or five hours is often more than the constitution of the generality of the men can stand, without experiencing that fatigue and lassitude, as to disable them from similar employment on the succeeding day. Europeans employed in the shed work only 7 hours daily, whereas an Engine driver, working the present Goods Trains, has often to be on his Engine upwards of nine hours.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 21st October 1856.

T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT,
ENGINEER'S OFFICE, 30TH SEPT. 1856.

No. 378.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

In reply to your letter, No. 104, of the 25th September 1856. I have the honor to append

the following Statement of the loads which our several classes of Engines are, in my opinion, capable of drawing, under ordinary circumstances.

	West to Arcot.	East to Madras.
	Loaded Vehicles.	Loaded Vehicles.
Tender coupled Engines.....	30	36
„ Passenger „.....	18	22
Tank coupled „.....	18	22
Tank Passenger „.....	11	13

I have, &c.,

(Signed) WM. BARTON WRIGHT,
Locomotive Superintendent.

MADRAS, 3RD OCTOBER 1856.

No. 155.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

With reference to your letter of the 29th ultimo, requesting my opinion as to the number of hours, between 8 o'clock A. M. and 4 P. M., that an Engine driver should be out on his Engine. I have the honor to inform you that the constitution, temperament, and habits of life of the class of Engine drivers vary, and hence so must, in individual cases, their power of endurance of exposure to a Tropical sun (with the conjoint heat evolved from the Engine), protected from its direct influence by only canvass awning. It therefore becomes a matter of serious moment, and almost impossibility to lay down any precise rule as to time, by which all are to be guided.

I am inclined to the opinion that 7 consecutive hours in the heat of the day, in the Carnatic, is more than Europeans can stand with impunity.

I have, &c.,

(Signed) H. W. PORTEOUS,
Acting Consulting Physician, Madras Railway Company.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT,
ENGINEER'S OFFICE, 7TH OCT. 1856.

No. 385.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

* Herewith returned, together with Letter No. 155, from the Acting Consulting Physician.

1. With reference to your letter, No. 459, of 2nd August, in which I believe you will find all regards my opinion on the present system of repeating that I consider the daily running of the Goods Trains during that portion of the day, and for the period of time necessitated by the present arrangements, to be taxing the strength of our men beyond their endurance.

2. I base my opinion on what we have found in practice, that our men, when they have been running the Goods Trains for a few consecutive days, have always been much exhausted, and in many cases have been laid up for several days after having gone through this exposure. This I attribute, however, as much to the extreme heat of the hours at which they run these Trains, as to the length of hours, which do not merely consist of the 6½ hours on the road actually running, but also of about an hour and half before the Train goes out, whilst the Engine-man prepares his Engine, takes coke and water, and shunts his Train, and in addition, nearly the same time shunting his Train at the end of his journey, putting away and examining his Engine, making, in all, fully nine hours work, to say nothing of the time the Enginemcn must devote to washing out their boilers, packing glands, trimming, syphons, &c.

I have, &c.,

(Signed) WM. BARTON WRIGHT,

Locomotive Superintendent.

(True Copies.)

T. A. JENKINS,

Agent and Manager.

CAMP OOTACAMUND, 25TH SEPTEMBER 1856.

No. 127.

To R. H. WILLIAMSON, Esq.,

Post Master General, Madras.

SIR,

The Agent recommends, believing that it would be more convenient to the travelling portion of the public, that the daily passengers train should leave Arcot at 6 A. M. instead of ½ past 5 A. M., as at present, may I request to be favored with your opinion as to the degree in which such a change might affect the Madras public, in regard to the receipt and despatch of letters.

2. The earlier hour was originally proposed by me, in the expectation that by such an arrangement only would it be possible, to give the whole of the society at Madras, the opportunity of replying to letters by the same day's mail train.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

MADRAS,

POST MASTER GENERAL'S OFFICE,
10TH OCTOBER 1856.

No. 2035.

To THE CONSULTING ENGINEER FOR RAILWAYS.

SIR,

I have the honor to forward for your information, copy of a letter to my address, from the Post Master of Madras, containing his opinion regarding the degree in which the change in the time of the passengers, train leaving Arcot, alluded to in your communication of the 25th ultimo, No. 127, is likely to affect the Madras public in the receipt and despatch of letters, and to state that I am not aware of any objection to the contemplated change.

I have, &c.,

R. H. WILLIAMSON,

Post Master General.

Submitted (with observations) for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 21st October 1856.

MADRAS POST OFFICE,
9TH OCTOBER 1856.

No. 742.

To THE POST MASTER GENERAL, MADRAS.

SIR,

In reference to your document, No. 1977, of the 7th instant, forwarding for report copy of a letter, No. 127, from the Consulting Engineer for Railways, regarding the degree in which a change in the passengers train leaving Arcot at 6 A. M. instead of ½ past 5 o'clock, might affect the Madras Public in the receipt and despatch of letters, I have the honor to observe that, with the present early hour at which the train leaves Arcot, the mails brought by it, reach the Madras Post Office about 9 A. M. and that the alteration recommended by the Agent of the Railway would merely delay their receipt half an hour, but will have very little influence in regard to their disposal by the 2nd delivery.

I am, &c.,

(Signed) E. C. SMITH,
Post Master.

(True Copy.)

R. H. WILLIAMSON,

Post Master General.

No. 211.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 692 and 682, dated 15th September and 7th October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards copies of letters from the Traffic Manager and others, with a view of supporting the following propositions.

- 1st. That the passenger trains should leave Arcot at 6 A. M. instead of 5.30.
- 2ndly. That there should be a goods train each way daily, except Sundays.
- 3rdly. That there should be mixed trains, passengers and goods, each way daily, with a view to affording the inhabitants of Madras an opportunity of going Westward, and back again the same day.

4th. That the goods train should travel faster.

2. To the 1st proposal, that the train should leave Arcot at 6, instead of 5.30, I have no objection to offer. The early hour was named originally with a view to giving to men coming into Madras on business, as long a day as possible, and with a view also to the facility offered to all in Madras to reply to letters by return mail. The Post Master General however, in a letter* appended, states that the change in the hour will make no difference in the delivery of letters, and the Railway officials wish to have the hours changed. I would therefore recommend that the change be sanctioned.

Extract Minutes of Consultation, No. 321, dated 30th September 1856.

3. The running of a goods train daily each way has been sanctioned by Government, on an application made direct by the Agent, pending further communication from this office, and I would recommend that the sanction be continued—the Goods business on the line being steadily on the increase.

4. To the running of mixed trains I object decidedly, unless they are composed of Goods and a lower class of Passengers, running at goods pace and at much reduced fares.

5. I see no sufficient reason, at present, for increasing the speed of the "Goods." Our object should be to reduce the cost of hauling cheap and bulky commodities, as much as possible, by carrying them at a very moderate pace—thus reducing the wear and tear of stock and of permanent way to a minimum, and enabling the same Engine to draw, with a given expenditure of fuel, a maximum load.

* No. 339, 11th August 1856.

6. The Agent might be informed, with reference to the letter* from the Locomotive Superintendent, that while the Government fully recognize that Gentleman's care in economizing the labour of his subordinates, his arrangements regarding them should be adapted to the speed laid down for the several description of Trains; and that however judicious, when practicable, may be the proposed system of associating a driver, in all cases, with the same Engine, it seems hardly possible in a country where the amount of work to be performed in a day is limited by the climate in the one case, but not affected in the other.

7. If a driver can work no more than 6 hours on his Engine at a time, an Engine may well run over 120 miles, and must therefore, in the case of goods trains, pass in the course of the day through more hands than one.

To Agent, No. 155, 3rd October 1856.

8. Dr. Porteous has, in the accompanying letter, given his opinion, that 7 "consecutive" hours is too long for an Engine driver in the heat of the day, but he has informed me that he does not consider it too long, if the man has rest in the meantime. It seems from this, and indeed, would appear reasonable, to employ this class of men, whenever practicable, on another system than that now adopted, viz., giving them their days work in two portions, with an hour or two rest between.

9. I propose to suggest this to the Agent, pointing out to him that it might be worth while to regulate the hours of starting the goods train, partly with a view to the convenience of the Engine drivers and to the economizing of their labour.

10. With regard to the supposed want of another passenger train out of Madras in the morning and back in the evening, in addition to those now running, I need only observe, that the present trains do not fill. The accommodation now offered to that portion of the public who can afford present rates must be considered sufficient, a Railway Company cannot afford to run extra trains to meet the convenience of a few individuals.

Madras, 21st October 1856.

T. T. PEARS,

Consulting Engineer for Railways.

No. 395.

FINANCIAL (RAILWAY) DEPARTMENT.

Extract from the Minutes of Consultation, dated 7th November 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Railway Company.

(Here enter 21st October 1856, No. 211.)

1. With the foregoing observations the Consulting Engineer has laid before Government a correspondence between the Railway Agent and the Traffic Manager and others, on the subject of the following propositions.

- 1st. That the Passenger trains should leave Arcot at 6 A. M. instead of half past 5.
- 2nd. That there should be a Goods train each way daily, except Sundays.
- 3rd. That there should be mixed trains, Passengers and Goods, each way daily.
- 4th. That the Goods train should travel faster.

2. On the recommendation contained in paras 2 and 3 of Colonel Pears' remarks, the Government authorize the change proposed in the hour of departure of the Passenger trains from Arcot from $\frac{1}{2}$ past 5 to 6 A. M., and also the continuance of a goods train each way daily, except Sundays, the running of which was sanctioned on the 30th September last.

3. The Government concur in Colonel Pears' objections to the running of mixed trains unless they are composed of Goods and a lower class of Passengers, running at Goods pace, and at much reduced fares: nor do they consider it advisable, for the reasons assigned by Colonel Pears, to increase the speed of the Goods train. The wear and tear caused by speed must augment the expense, and it is clearly for the advantage of the Railway Company that Goods should be carried at the lowest possible rates. At present, it is doubtful whether the rail can compete with the ordinary road carriage.

4. The Government cannot perceive that another Passenger train is required at present. The one train each way does not now fill, nor is it likely it ever will, so long as a very large proportion of the people are debarred the use of the Rail by the rate for 3rd class Passengers.

5. Colonel Pears will make to the Railway Agent the communication proposed in para 6 of his remarks—as well as the suggestions in paras 8 and 9 in respect to the convenience of the Engine drivers and the economizing of their labor.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY,
MADRAS, 18TH OCTOBER 1856.

No. 705.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor to annex a copy of a letter from the Locomotive Superintendent, bringing to notice that the Goods Traffic has increased to an extent beyond the power of our Goods Tank Engines to work, that is, one Train only with Goods, each way, daily. That it will be necessary to meet the demands of the Traffic, running such Trains, to use our two largest Goods Engines continually; this, he considers, will prove very detrimental to the Engines. He consequently recommends an alteration in the mode of running the Trains, and the Traffic Manager coincides with him in opinion, that the most economical mode will be to run mixed Trains.

2. I request that you will have the goodness to move the Government to sanction the running of mixed Trains, as applied for in my letter, No. 602, dated 15th ultimo.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT,
ENGINEER'S OFFICE, 18TH OCT. 1856.

No. 391.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to inform you that it now appears to me necessary, that an increase in our number of Enginemen, should be applied for.

2. You are aware that it has been found necessary already to promote our two firemen to the grade of Enginemen; these men are now employed ballasting for the Engineering department, leaving the four senior Enginemen to work the ordinary Trains.

3. The whole of our men are, therefore, now out every day, and I am also obliged to employ the greater portion of them on Sundays, two of them to run Passenger Trains, the others to wash out their boilers, and otherwise to attend to their Engines, as few of them have time or opportunity for so doing during the week, in consequence of being all out every day.

4. At present we are, therefore, without any spare Enginemen or firemen, and in case of any of our men being sick I should be under the necessity of stopping the ballasting, in order to work the regular Traffic, thereby retarding the construction, or interfering with the necessary maintenance of way.

5. Two men are expected by the next Steamer, one an Engineman, the other a fireman, qualified to drive. These will relieve us at present, and enable us to do the present amount of work comfortably, and with less risk of being inconvenienced by the sickness of one or two of our men.

6. In connection with this subject, I must bring to your notice the steady increase in our Goods Traffic, which has gone on regularly expanding and still appears to be progressing to such an extent as to lead one to believe that it will be necessary, in the course of a short time, to increase the number of Trains, unless, indeed, the Government will permit us to run mixed Trains, as applied for, which system, with our present light Passenger Traffic, would greatly relieve our Goods Engines, and economize our working expenses generally.

7. I furnish for your information, brief sketch of the development of the Goods Traffic, as it has affected our working of Locomotives. For the first few days in July, I ran the large Goods Engines, but finding the Goods Traffic very light, I replaced them with the small Tank Engines on the 4th of the month, and continued to work the Trains (which at that time ran only one way daily,) with them up to the 23rd, when the Trains had become so heavy as to render the running of the large Engines a matter of absolute necessity. During the months of August and September, the Goods Trains became so heavy as to be beyond the power of our large Engines, and towards the latter end of the month (September), we were obliged to run special Trains to assist, and since the 2nd October, we have been running a Goods Train daily each way. I expected to be able to work these Trains, for some time, with the Tank coupled Engines, and have done so up till the 15th instant, when I found it absolutely necessary to recommence running one of the large Engines, thinking that a large Engine running alternately with a small Engine, would do the work. Yesterday morning, however, there were 40 wagons, and as I had only prepared a small Engine, 12 of them had to be left, the Engine taking 28 wagons, a number beyond the power of this class of Engine.

8. From what I can learn, it appears that we shall be compelled now to run the large Goods Engines, and as we have only two of that class, these Engines will be constantly at work, and must soon suffer from want of repairs; should one be obliged to bring them into shed, and should the Goods Traffic continue to increase in the manner in which it has hitherto done, we shall no doubt soon be compelled to run other Trains. It would take two Goods Trains each way daily to work the Traffic with the Tank coupled Engines, or at least one and a half Train daily, by running one Train each way daily and another Train one way daily.

9. Under the above circumstances, you will see that we are now working up to our full strength as regards men, and that the men expected are merely sufficient to provide against contingencies. In fact, the men on the Goods Trains are worked beyond their strength at present, and I am compelled to relieve them by changing alternately to the Passenger Trains, a system both troublesome and expensive, and which would be much improved by an alteration of the time of the Trains to a cooler time of the day, and by accelerating the speed, so as to reduce the number of hours spent on the journey.

10. As it will be fully three months before we receive a relay of men from England, I consider it expedient to make this application for two more Enginemmen, who should be sent out as soon as suitable men can be procured.

11. Had we more of the large class of Goods Engines, we might do with a less number of drivers, but the Tank coupled Engines are much too light to run our Goods Trains to advantage, seeing that wages bear so large a proportion on our running expenses in this country. They are very good of their kind, and very well adapted for ballasting, as they are economical in their consumption of fuel. They would answer very well for working mixed, or other Trains, which it may be desirable to run with a moderate number of vehicles.

12. It therefore becomes a question of serious consideration, as to whether it is thought advisable, to order out a few more of the heavy Engines, or whether the Trains should be worked so as to suit our present stock of Engines.

13. The large class of Passenger Engines, do not appear to me to be likely to be brought in general use, but I shall shortly call your attention as to our requirements, with regard to a powerful class of Goods Engines.

I have, &c.,

(Signed) WM. BARTON WRIGHT,
Locomotive Superintendent.
(True Copy.) T. A. JENKINS, Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 582.

TO MAJOR T. A. JENKINS,
Agent and Manager of the Madras Railway Company.

SIR,

I have the honor, by order of Government to acknowledge the receipt of your letters, Nos. 602 and 682, of the 15th September and 7th October 1856, and to convey to you the following orders thereon.

2. The Government authorize the change proposed by you in the hour of departure of the Passenger train from Arcot, viz. from $\frac{1}{2}$ past 5 to 6 A. M., and also the continuance of a Goods Train each way daily, except Sundays, the running of which was sanctioned on the 30th September last.

3. The Government do not approve of the running of mixed trains, unless they are composed of Goods, and a lower class of Passengers running at Goods pace and at much reduced fares; nor do they consider it advisable to increase the speed of the Goods train. The wear and tear caused by increase of speed must augment the expense, and it is clearly for the advantage of the Railway Company that Goods should be carried at the lowest possible rates. At present it is doubtful whether the Rail can compete with the ordinary road carriage.

4. The Government cannot perceive that another Passengers train is required at present. The one train each way does not now fill, nor is it likely it ever will, so long as a very large proportion of the people are debarred the use of the Rail by the rate for 3rd class Passengers.

5. With reference to Mr. Wright's letter to your address, No. 339, of the 11th August 1856, I am directed to observe, that while the Government fully recognize the care and prudence with which that Gentleman seeks to economize the labor of his subordinates, they consider that his arrangements regarding them, must necessarily be adapted to the speed authorized for the several descriptions of Trains; and that however judicious, when practicable, may be the proposed system of associating a driver in all cases with the same Engine, it seems hardly possible in a country, where the amount of work that can be performed in a day, is materially affected by the climate in the one case, but not in the other.

6. With reference to this point, it is observed that Dr. Porteous has given an opinion that 7 "consecutive" hours is too much for an Engine driver; but it does not appear that he considers it too much for a day's work, if broken up by a period of repose and refreshment. The Locomotive Superintendent will probably not lose sight of these considerations, in regulating the labor of this class. With the same object in view, the time of starting the Goods train may be determined, in some degree with reference to the arrangement in the Locomotive Department.

7. You are requested to give due notice to the public, of the change now proposed in the hour of starting the several trains, to cause revised time tables to be prepared, and to report, without delay, to this office, the hours at which you propose to start the Goods Trains in future, and the day from which the change of time will be introduced.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 11th November 1856.

MADRAS RAILWAY,
MADRAS, 24th November 1856.

No. 826.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 582, dated the 11th November, I have the honor to annex proposed Time Tables; and to recommend that they come into force on Monday, the 1st of December next.

2. The Passenger Train will leave Arcot daily at 6 A.M., and will pass the Goods Train, which will be in the siding at Tinnanore, at 8.21 A.M., and arrive at Madras at 9.15 A.M.
3. The Passenger Train from Madras will leave daily as heretofore. It will pass the Goods Train at Trivellore, at 4.46 P.M.
4. The Goods Train from Madras will leave at 6.15 A.M., will arrive at Tinnanore at 8.15 A.M., and remain there until the Passenger Train has passed; it will arrive at Arcot at 12.45 P.M.
5. After the arrival of the Goods Train from Madras, the Goods Train will leave Arcot, it will arrive at Trivellore at 4.27 P.M., and there wait the arrival of the Passenger Train, and will arrive at Madras at 7.15 P.M.
6. I request that you will have the goodness to obtain the sanction of the Government for the same.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

MADRAS RAILWAY.

OPEN BETWEEN MADRAS AND ARCOT.

Report Time Table on and after Monday, the 1st day of December 1856.

TRAINS WEST FROM MADRAS.

TRAINS WEST FROM MADRAS.				
Distance from Madras. Miles.	Stations.	Daily Trains including Sundays.		Goods Train.
		First, Second, and Third class.		
		P. M.	A. M.	
3 ¹ / ₂	Madras.....			
13	Perambore.....			
13	Avady.....	Departure.	3.30	6.15
26	Tinnanore.....	"	3.40	6.40
36 ¹ / ₂	Trivellore.....	"	4.7	7.45
45 ³ / ₄	Chinnamapet.....	"	4.22	8.15
45 ³ / ₄	Companypet.....	"	4.46	9.3
56	Sholinghur.....	"	4.46	10.8
65 ¹ / ₂	Arcot.....	"	5.16	10.58
		"	5.44	11.50
		"	6.15	12.45
		Arrival.	6.45	

TRAINS EAST TO MADRAS.

TRAINS EAST TO MADRAS.				
Distance from Arcot.	Stations.	Daily Trains including Sundays.		Goods Train.
		First, Second, and Third class.		
Miles.				
91	Arcot.....		A. M.	P. M.
19	Sholinghur.....			12.45
29	Companypet.....	Departure.	6.0	1.40
39	Chinnamapet.....	"	6.27	2.32
47	Trivellore.....	"	6.58	3.22
52	Tinnanore.....	"	7.27	4.27
61	Avady.....	"	7.58	5.15
65	Perambore.....	"	8.21	5.45
	Madras.....	"	8.36	6.50
		Arrival.	9.5	7.15
			9.15	

T. A. JENKINS,
Agent and Manager.

CONSULTING ENGINEER'S OFFICE.

No. 652.

To MAJOR T. A. JENKINS,

Agent and Manager Madras Railway Company.

SIR,

With reference to your letter, No. 826, of yesterday's date, forwarding a proposed Time Table, I have the honor to request that a revised Time Table, in accordance with the orders of the Supreme Government, viz., showing local mean time at the several stations, may be prepared and submitted at an early date for the sanction of Government.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 25th November 1856.

MADRAS RAILWAY,

MADRAS, 24th NOVEMBER 1855.

No. 827.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 582, dated the 11th November, I beg to point out to you that in my letter, No. 602, dated the 15th September, the hour at which it was recommended that the Passenger Train should leave Arcot daily was 6.30 A.M., and not 6 A.M., as appears to have been your impression, as recorded in the the records of the Government published by the Press.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted with (observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 25th November 1856.

No. 250.

On a letter from the Agent and Manager of the Madras Railway Company, No. 827, dated the 24th November 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

It appears that in my report, No. 211, of the 20th October, the Agent's proposal, regarding the change of time in the departure of Trains from Arcot, was not rightly stated. It seems that he proposed to start from thence at 6.30, instead of 6 A.M., I could not have recommended this.

2. In supporting what I erroneously thought to be the proposal, viz. that the train should start at 6 A.M., I was influenced by a consideration of the season of the year, and of the fact that on the opening up to Vellore, the Time Table must be again revised.

3. I think, as a general rule, we should take, in this country, as much as we possibly can of the cool hours of the day. I have been a good deal in, and about Arcot, and I attach little importance to the supposed fear of the natives, who habitually, when in parties, travel at all hours of the night; moreover it is remarkable, a few days after I received the application from the Agent to start the train later from Arcot, Mr. Sullivan, the Sub-Collector of North Arcot, represented to me that the inhabitants of that neighbourhood were very anxious that arrangements should be made, if possible, to give them a longer day in Madras, by starting the train, from thence Westward later. I suppose we shall find here, as elsewhere, that in matters of this nature every man clamors for his own convenience, and thinks, or asserts, that he represents the public.

4. I think 6 A.M., is quite as late as the Train should leave Arcot, travellers would then reach the Station, at Madras, at about 9.20 A.M.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 25th November 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 443

Extract from the Minutes of Consultation, dated 4th December 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 25th November 1856.)

The Government authorize the passengers trains starting from Arcot at 6.30 A.M., during the cool season.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

CONSULTING ENGINEER'S OFFICE.

No. 696.

To MAJOR T. A. JENKINS,
Agent and Manager, Madras Railway Company.

SIR,

With reference to your letter, No. 827, of the 24th ultimo, I have the honor to inform you that Government authorize the passenger train starting from Arcot at 6.30 A.M., during the cool season.

2. You are requested to cause a time table to be altered accordingly, and submitted for sanction prior to publication.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 5th December 1856.

MADRAS RAILWAY,
MADRAS, 8TH DECEMBER 1856.

No. 894.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 696, dated the 5th instant, I have the honor to transmit herewith Time Tables, showing local mean time at stations, for trains to start from Madras, Passengers at 3.30 P.M. and goods at 5.40 A.M., and from Arcot, Passengers at 6.30 A.M. and Goods at 12.45 P.M.

2. The time of starting the goods Train from Madras has been made thus early to enable it to arrive at Trivellore, there to await the arrival of the 6.30. A.M. Train from Arcot.

3. I request that Government may be pleased to sanction this arrangement.

I have, &c.,

T. A. JENKINS, Agent and Manager.

MADRAS RAILWAY.

OPEN BETWEEN MADRAS AND ARCOT.

Proposed Time and Fare Table on and after

TRAINS WEST FROM MADRAS.

TRAINS WEST FROM MADRAS.				
Distance from Madras.	Stations.	Daily Trains including Sundays.		Goods Train.
		First, Second, and Third Class.		
Miles.		P. M.	A. M.	
	Madras.....Departure.	3.30	5.40	
3½	Perambore....."	3.40	6.5	
13	Avady....."	4.6	7.9	
18	Tinnanore....."	4.21	8.26	
26	Trivellore....."	4.45	9.30	
36½	Chinamapet....."	5.13	10.20	
45½	Companypet....."	5.41	11.12	
56	Sholinghur....."	6.12	12.6	
65½	Arcot.....Arrival.	6.41		

TRAINS EAST TO MADRAS.

TRAINS EAST TO MADRAS.				
Distance from Madras.	Stations.	Daily Trains including Sundays.		Goods Train.
		First, Second, and Third Class.		
Miles.		A. M.	P. M.	
	Departure.	6.30	12.45	
9½	Arcot.....	6.37	1.39	
19½	Sholinghur.....	7.30	2.32	
29	Companypet.....	8.0	3.25	
39½	Chinamapet.....	8.30	4.30	
47½	Trivellore.....	8.52	5.19	
52	Tinnanore.....	9.0	5.48	
63½	Avady.....	9.59	6.54	
65½	Perambore.....	9.49	7.19	
	Arrival.			

The arrivals and departures of Trains are regulated by local mean time.

(Signed) H. A. FLETCHER, Traffic Manager.

(True Copy.)

T. A. JENKINS, Agent and Manager.

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To MAJOR T. A. JENKINS,

No. 711.

CONSULTING ENGINEER'S OFFICE.

SIR,

Agent and Manager, Madras Railway Company.

I have the honor to acknowledge the receipt of your letter, No. 894, of the 8th instant, and to convey to you the sanction of Government to the Time Tables for running the Passengers and Goods Trains between Madras and Arcot. I have also to request you will give due notice to the public of the arrangements proposed.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 9th December 1856.

MADRAS RAILWAY, 22ND DECEMBER 1856.

No. 939.

To LIEUTENANT COLONEL T. T. PEARS, C. E.,

Consulting Engineer.

SIR,

I have the honor to annex a copy of a letter from the Assistant to the Traffic Manager, the latter having proceeded up the line as far as Salem, on duty, bringing to my notice the advisability of our affording accommodation to the Public during the Christmas holidays, to enable parties to proceed from Madras and return the same day. The arrangement proposed to effect this is, that Passenger carriages be attached to Goods Trains from the 24th to the 2nd of January, inclusive. That the Goods Trains depart from and arrive at Madras and Arcot at the following hours.

Departure.....	From Madras.	6.30 A. M.	Departure.....	From Arcot.	1.45 P. M.
Arriving at Arcot.....		11.30 A. M.	Arriving at Madras.....		6.45 P. M.

That the speed of the Goods Trains be increased during that period to 13 miles an hour; and as during the holidays but little Traffic can be expected in goods, I beg strongly to recommend the subject for the favorable consideration of the Government.

3. I beg to add that this arrangement does not involve any change in the present meeting place of Trains, viz. Trivellore.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
22ND DECEMBER 1856.

To MAJOR T. A. JENKINS,

No. 362.

Agent and Manager of the Madras Railway Company.

SIR,

This being a season of the year when people generally, more particularly those engaged in public offices, whose avocations deny them relaxation at other times, look for a holiday, I think it would be attended with advantage to the Company, and be appreciated by the public, if we were to offer additional facilities, during the Christmas holidays, to parties desirous of availing themselves of a trip into the country.

I would, therefore, beg to suggest that this might be easily accomplished without any material additional expense to the Company.

First.—By increasing the speed of our present Goods Train to 13 miles per hour, including stoppages; and

Secondly.—By attaching 1st, 2nd and 3rd class carriages.

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The following hours would be most suitable for these Trains.

	From Madras.		From Arcot.
Departure.....	6.30 A. M.	Departure.....	1.45 P. M.
Arriving at Arcot.....	11.30 A. M.	Arriving at Madras.....	6.45 P. M.

This arrangement does not involve any change in the present meeting place of Trains, viz., Trivellore.

I have, &c.,

(Signed) HERBERT E. CHURCH,

Assistant Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 768.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor, under the orders of Government, to acknowledge the receipt of your letter, No. 939, of the 22nd instant, recommending that, with a view to affording accommodation to the public, during the Christmas holidays, passenger carriages be attached to Goods Trains from the 24th instant to the 2nd proximo; that the time of starting the Goods Trains be altered, and that their speed be increased to 13 miles an hour.

2. I am directed to refer you in reply, to my letter, No. 582, of the 11th November, in which you were informed that the Government do not approve of running mixed Trains unless they are composed of Goods, and a lower class of passengers running at "Goods" pace, and at much reduced fares, nor do they consider it desirable to increase the speed of "Goods Trains."

3. At the same time, I have to convey to you the authority of Government for running such extra passenger Trains, during the holidays, as you may consider the additional passenger Traffic may justify, reporting, without delay, what Trains you thus propose running, and notifying the same immediately to the public.

4. In conclusion, I am instructed to point out to you, that the approach of the Christmas holidays has been generally known for some time—that, as far as Government Offices were concerned, it was notified in the Fort Saint George Gazette of the 9th instant—that in studying either the convenience of the public, or the interests of the Railway, it would have been well if this application had been made sooner, and your intentions made known to the public at an earlier date.

5. As it is, your application, marked "immediate," is dated the 22nd instant, and was delivered at this office at, or about, 9 P.M. of that day.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 23rd December 1856.

(True Copy.)

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

MADRAS RAILWAY,
MADRAS, 23RD DECEMBER 1856.

No. 941.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,

Consulting Engineer for Railways.

I have the honor to acknowledge the receipt of your letter, No. 768, dated this day, in which you convey the orders of the Government that they do not consider it desirable to increase the speed of the Goods Trains, nor to permit the running of mixed Trains except for a lower class of Passengers; at the same time conveying the authority of the Government for running such Extra Passenger Trains during the holidays, as the additional Passenger Traffic may justify, and requiring that I report, without delay, what Trains I propose to run.

2. In reply, I beg to state that in my letter, No. 939, dated 22nd instant, proposing to run mixed Trains during the holidays, I stated in support of my recommendation, that we anticipated but light Trains in Goods during that period, and, consequently, that passenger carriages should be attached thereto; thus the public would have been accommodated at but little additional cost to the Company, but the running of Extra Trains will entail a considerable additional expense, and the Traffic Department are not prepared to take the responsibility of recommending such an additional expenditure.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with report) for the orders of Government.

Madrás, 20th March 1857.

T. T. PEARS,

Consulting Engineer for Railways.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 775.

TO MAJOR T. A. JENKINS,

SIR,

Agent and Manager of the Madras Railway Company.

I have the honor, under the orders of Government, to acknowledge the receipt of your letter, No. 941, of the 23rd instant, again-urging the running of mixed trains during the Christmas holidays, and stating that you are not prepared to take the responsibility of running extra passenger trains with the same view, viz., that of accommodating the public; and I am to remind you that you have been already informed that the Government object to mixed trains, excepting under certain circumstances and conditions, which have been made known to you. There do not appear to be any sufficient grounds for supposing, that the business of the country in the conveyance of Goods will be affected by the Christmas holidays.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madrás, 24th December 1856.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

SPECIAL TRAINS.

MADRAS RAILWAY, 2ND AUGUST 1856.

No. 517.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor to annex a copy of a letter, No. 126, dated 31st ultimo, from the Traffic Manager, reporting his having run a special Train on the evening of the 24th ultimo to Arcot, and another on the evening of the 30th to Trivellore and back, in addition to the Special Trains sanctioned by the Government, and pointing out that the full benefit anticipated was not derived from the running of the latter from the want of sufficient notice, the reply to the application to Government being only received the day previous to the running.

2. I beg to suggest that I be permitted to run special Trains when the exigencies of the Public may require it, and that you will have the goodness to obtain the sanction of the Government for the same.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 13th August 1856.

MADRAS RAILWAY, TRAFFIC MANAGER'S OFFICE,
31ST JULY 1856.

No. 126.

TO MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

SIR,

Referring to my letter, No. 123, of the 22nd instant, proposing that Special Trains should be run between Madras and Arcot on the 26th and 27th instant, for the accommodation of persons desirous of attending a feast at Thirthannu near to the Company Station, I have the honor to inform you, that although the special Trains accommodated a few passengers, and were useful in bringing back those who had travelled by the ordinary Trains, they by no means carried the number of passengers I was led to suppose would avail themselves of the accommodation.

2. I ascribe this in a great measure to the shortness of the notice given to the public. I was not aware, until the 22nd instant, that a number of persons would be likely to travel to Company Station, but on that date I applied to you for permission to run special Trains, but as the sanction of Government was necessary, and it was not until the afternoon of the 24th instant that it was obtained, the opportunity was lost of making it known to the Public.

3. It may frequently occur that Special Trains may be required, almost at an hour's notice, and I would beg to suggest that some general permission should be obtained from Government for running Special Trains, more particularly in such cases as will not admit of delay.

4. I take this opportunity of reporting, that on the 25th instant, we had more passengers for Company Station by the 3.30 P.M. East Train from Madras than the Engine could take, I was, therefore, compelled to run a Special Train upon that occasion; also that by the 3.30 P.M. Train yesterday to Trivellore we had more passengers than could be taken by one Engine, I was therefore compelled to run a Special Train to Trivellore and back, and I think it likely that a special Train will be required this afternoon.

w1

5. I beg to observe that notice is given to the Public, in the "Time and Fare table," that "Special Trains may be had on application to the Traffic Manager," and that no provision has been made as to the principle upon which Special Trains are to be run, or as to the rates to be charged. From this notice I infer that when Special Trains are required they may be run, otherwise the notice regarding them would appear to be useless.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 161.

On a letter from the Agent and Manager of the Madras Railway Company, No. 517, dated the 2nd August 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards copy of a letter from the Traffic Manager, reporting the Special Trains, beyond those sanctioned by Government, had been run on the 25th and 30th ultimo, and suggests, with reference to Mr. Fletcher's observations, that he be permitted to run Special Trains when the exigencies of the public may require it.

2. One of the grounds upon which this request is made is, that the permission applied for to run special trains, on the 26th and 27th ultimo, was not received in sufficient time to admit of their being made generally known to the public.

3. The Agent's application for these trains was dated the 22nd, and received in my office on the 23rd.

4. Special trains are of two kinds.

1st. Those offered to the public on special occasions, as of festivals, &c.

2nd. Those required by individuals.

5. The trains now referred to are of the former class. The Agent must be aware that there can be no difficulty, in the exercise of ordinary care and foresight, in ascertaining when such trains are likely to be required, in sufficient time to obtain the sanction of Government. Such being the case, the fact that the Agent, on a late occasion, deferred his application until it was barely possible, in the ordinary course of business, to obtain sanction, in sufficient time, to give warning to the public, is no argument in favor of setting aside the control of Government in this important matter.

6. It cannot but create some surprise, that the Agent should not have perceived that the submission to Government of Time tables, in the first instance, becomes an empty form, if he is thenceforward to run whatever additional trains he may think proper.

7. The question is associated with economy of working, and with the safety of the public. Whatever may be the practice in England, however great the powers which Railway Directors there may think proper to delegate to their servants, the Government has here a large share of responsibility in connection with these matters.

8. I have already shown that the authority asked for by the Agent is quite unnecessary; while the only argument brought forward to establish its necessity is, that when the Agent makes application, at an unnecessarily late hour, he cannot get sanction in time to notify the train to the public.

9. With regard to the 2nd class of special trains, being those required by individuals, I have to observe that there is little likelihood of such being called for at present by any but the Government.

10. I consider it of great importance, both to the economical working of the line, and to the safety of the public, that the running of special trains should be controlled by Government; and I would recommend, therefore, that the Agent be informed that no special train of any kind be run without its authority.

11. I would further suggest that the opportunity be taken of calling upon the Agent to report whenever, in connection with the traffic operations, it may be found on emergency necessary to employ a special Engine on the line.

12. With reference to the reason given by the Traffic Manager, for having run a special train on the 25th ultimo, viz., that there were more passengers than one Engine could take, I regret that I can give the Government no information. It was understood, before the opening of the line, that certain weekly returns should be furnished, and these should have been before Government at the present moment; but since the opening of the line, not one traffic return has been received. I have repeatedly communicated with the Agent on the subject, and have now called for explanation of this very unlooked for, and, as it appears, unjustifiable delay, in the transmission of these important documents.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 13th August 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 282.

Extract from the Minutes of Consultation, dated 9th September 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 13th August 1856.)

The Government agree, generally, with the views of the Consulting Engineer, in respect to the running of special trains on the Madras Railway, and are not prepared to allow the Agent and Manager authority to run them on his own discretion. With ordinary foresight, little difficulty need be anticipated in determining the occasions for special trains, in sufficient time to enable sanction to be applied for beforehand. It seems, however, unnecessary that such references should be made to Government. The application should be disposed of by the Consulting Engineer, or, in his absence, by his Deputy, who would refer to Government only when they objected to the Train. When both the Consulting Engineer and his Deputy are away from the Presidency the Agent will apply to Government.

2. The Agent should, as suggested by Colonel Pears, report to him whenever it may be necessary, in connection with the traffic operations, to employ a special Engine on the line, but he will of course not wait for sanction for the employment of it.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

MADRAS RAILWAY, 24TH SEPTEMBER 1856.

No. 630.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,
In advertence to Extract from Minutes of Consultation, No. 282, dated 9th September 1856, in which the Government direct that special Trains are not to be run without previous sanction having been applied for, I have the honor to state, that the Traffic Manager of this Company has reported to me that such practice will be attended with many objections and difficulties, in a commercial point of view.

2. I annex a copy of his letter, No. 331, dated 23rd September, and beg leave to observe that I concur in the opinions expressed by him.

3. "In the 8th para of the contract it is directed that the Railway Company shall run so many Trains, at such times, and at such rates of speed, and between such places, &c., as the East India Company shall from time to time require;" but I apprehend that this has reference solely to Trains intended for the daily use of the public, and cannot have reference to such accommodation of a special character as the public may from time to time require.

4. Experience has shown that special Trains may have to be furnished within an hour or two of the demand being made; I may instance the case of a person's receiving a Telegraphic message requesting his personal and immediate attendance at Bangalore, or elsewhere; or by some mischance a person with important business in hand may be too late for the ordinary Train, when he will at once order a special—the demand for seats in a Train may be more than the Engine can take, when accommodation must be immediately provided for the excess number. Troops may have to be sent on an emergency—say from Palghat, in the direction of Beypoor or elsewhere; and if the power be not in the hands of the executive to meet such demands, the main advantages to be derived from a Railway are stultified, and the commercial success of the undertaking is jeopardized.

5. I am credibly informed that upon all lines of Railway in Europe, Special Trains are provided on the demand being made by the public, on the authority of the local officer, reference not even being made to the Directors or superior officers of the Company; and that such must be the case upon the other lines of Railway in India, I am led to suppose from the fact, that it is published in the Time Table that special Trains can be provided on application to the Traffic Manager.

6. I request that the Government may be pleased to ascertain the practice prevailing, in respect to this subject, upon the other Indian Railways.

I have, &c.

T. A. JENKINS,

Agent and Manager.

Submitted for the orders of Government, with observations.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 14th October 1856.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
23RD SEPTEMBER 1856.

No. 331.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. I have the honor to acknowledge the receipt of your communication, enclosing copy of Extract of Minutes of Consultation, No. 282, dated 9th September 1856.

2. With reference to the subject of special Trains, I beg to observe that it appears to me that it is impossible that the requirements of the Traffic Department, at all times, can be provided for, if the power of ordering a special Train to run is taken out of the hands of the executive of the Railway Company, and placed in the hands of the officers of Government.

3. Circumstances have arisen, and will frequently arise, wherein the running of a special Train or Trains may be requisite at a moment's notice. I may instance the occasion when (the Consulting Engineer being present) such numbers of passengers presented themselves for Travellers at the Madras Terminus, that either special Trains must be run, or passengers could not be conveyed, and this has not been a solitary instance.

4. There was no time afforded to apply to the Government, and the choice, in similar cases, would rest upon the executive officers of the Company, either to decline to convey the Passengers, or transgress an order of Government.

5. I refer you to one of our printed Time Tables, issued with the sanction of Government, wherein it is stated that special Trains may be had upon application to the Traffic Manager (a practice in force in Bengal); I supposed that this gave power to the executive to run special Trains: I have now, however, to draw your attention to the Time Table, and await your instructions thereon.

6. In cases of accident upon the line by the failure of an Engine, or other circumstance, it would be necessary, (under proper arrangements) to despatch assistance by special Train, and the delay that must take place in sending in an official letter asking permission, might be attended with serious results to persons in cases of accident, or be attended with great risk of disarranging for some time the Traffic of the Railway.

7. Under some circumstances, the Engine might not be able to take the whole Train through, to its destination, and it would be necessary to divide the Train, leaving a portion of the carriages or wagons in a siding at one of the road stations. In such a case it would be necessary to send back the Engine for such carriages or wagons with all convenient speed, and with as little delay as possible; but under the recent order of Government the Passengers or Goods must wait until the succeeding day's Train could convey them.

8. In cases for ballasting the line, special Trains are run constantly; the Engines for these Trains are applied for by me, and the Trains are run with my knowledge to insure that the locality in which they may be at work may be known, so that arrangements may be made to insure their being out of the way of the regular Trains.

9. The practice upon other Railways is to leave the running of special Trains in the hands of the executive, and such arrangements are generally in the hands of the Traffic Department. Upon a double line of Railway the Superintendents of the Termini would have power to run a special Train if required; when time and occasion will allow, special Trains are invariably arranged in the Traffic Manager's office; but it was found impossible that in all cases this could be done, even with the aid of the Electric Telegraph.

10. Upon a single line of Railway, it is usual—and almost absolutely necessary—that one person should arrange the special trains to be run; but in all cases (I know no exception) the Directors leave these arrangements in the hands of their Officers; and I am of opinion that such is the best course to pursue, with a view to the Company's interest and the public convenience.

11. I observe that whilst the Government will not allow special Trains to be run without reference to them, that they have authorized a special Engine to be employed when necessary without special reference. I beg to observe that an Engine constitutes a Train, and that therefore the order is ambiguous; and as the running of special Trains upon a single line of Railway has always hitherto been considered as requiring great care, I must beg leave respectfully to say that I should not consider it safe for an Engine to be despatched with the slightest doubt as to the authority for running it.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True copy.)

T. A. JENKINS,

Agent and Manager.

On a letter from the Agent and Manager of the Madras Railway Company, No. 630, dated the 24th September 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

*No. 252, Financial (Railway) Department, dated 9th September 1856.

The Agent and Manager of the Madras Railway forwards, with reference to a late order* of Government, copy of a communication from the Traffic Manager upon the subject of special Trains, and requests that Government will be pleased to ascertain the practice prevailing in respect to this subject upon the other Indian Railways.

2. The Agent supports the views of the Traffic Manager, and argues, that the very clear provisions expressed in the 8th Clause of the contract have reference solely to trains intended for the daily use of the public, and cannot have reference to such accommodation of a special character, as the public may from time to time require.

3. I cannot conceive upon what grounds the Agent has formed this conclusion. It seems difficult to read through the deed of contract without perceiving, that the object of its framer was to place in the hands of the Government full and complete authority, and control, over all the proceedings of the Railway Company—an authority which necessarily brings with it proportionate responsibilities.

4. There can hardly be a more important duty in connection with the operations of the Railway, whether we consider the interests of the shareholders, or the safety of the public, than the Controlling of the number, time, and speed of trains.

5. It is therefore clearly stated in Clause 8, that the Railway Company shall cause to be run so many trains at such times, and at such rates of speed, and between such places, &c., &c., as the East India Company shall from time to time require.

6. Nothing, in my opinion, can be clearer than this; but the Agent would destroy the control of Government by interpreting the above, as giving permissive, not prohibitory power—as giving the Government authority to sanction a certain number of trains, but not to prevent the Agent from running as many more as he likes. Neither the letter nor the spirit of the contract will justify such an interpretation.

7. It may be necessary to make a few observations however on Mr. Fletcher's letter.

8. The question has been complicated in some measure by an indefinite application of the term "special Trains."

9. The trains to which that Gentleman refers are of two kinds. Trains ordered on emergency by individuals, and additional Trains required occasionally for the accommodation of the Public. The former of these should properly be called "special Trains," the second "extra Trains."

10. The Agent and Traffic Manager consider, that both descriptions of Trains should be made available to the public, at the discretion of the Railway executive, and without the sanction of Government. I shall show that it is neither necessary nor expedient, that Government should delegate any such power to those Gentlemen, at least for the present.

11. There is no more fertile source of danger and disaster on Railways, than special, or extraordinary trains.

12. The line between Madras and Arcot is at present unprovided with Telegraph. The daily train having started, it would be impossible to give notice to the several stations on the line of the intended despatch of a special or extra train under 24 hours; and not only would the "special" be then unnecessary, as the next ordinary train would start, but there would be ample time to notify to the Government Officer that a special train had been called for.

13. I cannot conceive anything more calculated justly to alarm the travelling portion of the public at Madras at the present time, than the understanding, that on a single line, without a Telegraph, with regular trains moving, the executive officers of the Railway had power, "within an hour or two of the demand made," to despatch a special train.

14. With such imperfect means of proceeding beyond the Termini, such emergent demands for special trains here are not likely to arise; and if they do, until a Telegraph is provided, private convenience must give way to public safety.

15. With regard to extra trains, I need only observe, that the necessity for these arises generally out of the occurrence of festivals, &c. The days and hours at which they are likely to be required are known long before; and indeed to make them useful to the public, their intended despatch must be publicly notified before. There can be no reason, therefore, whatever, why these should not be subject to the approval of Government.

16. The Agent mentions as another cause for delegating this power to the Railway officials, that the demand for seats in a train may be more than the Engine can take. This occurs very rarely indeed—I think I might say, never—unless the Railway Managers have overlooked some public festival, or other gathering, which should have been anticipated, and made an occasion for an extra train. The average number of passengers travelling between any two points is remarkably uniform; and if the maximum of ordinary passenger traffic should exceed the power of a single Engine, the time would have arrived for increasing the number of regular trains.

17. The Agent has been authorized to run a special Engine, when necessary, in connection with the working of the line, reporting the same—and in reference to this permission, Mr. Fletcher argues, that an Engine is a train, and that therefore if he could do the one, he might do the other.

18. I differ entirely from that Gentleman—I consider that a single Engine sent out to relieve and assist one broken down, or disabled, is a very different thing, from a special train carrying a number of people at passenger speed. The former moves cautiously along the line, and whatever risk is incurred in its transit, is incurred by the Railway servants in the discharge of their duty, not by any portion of the public.

19. Mr. Fletcher makes, therefore, a very important mistake in stating, that an Engine constitutes a Train. It is not uncommon to see two Engines to one train, which according to this Gentleman would become thereby two trains. Its safety consists in its being one train, run at the usual hour, when all on the line are on the look out for it.

20. There seems to me in this letter a singular misunderstanding of the relative position of the Railway authorities and the Government. The Traffic Manager speaks (para. 2) of the power of ordering a special train being taken out of his hands and placed in the hands of the officer of Government. He does not see the difference between ordering and sanctioning. In the same manner this Gentleman interprets the notification in the Time Table, that applications for special trains are to be made to the Traffic Manager, to mean, that the Traffic Manager necessarily has authority to grant them, which does not follow.

21. The concluding passage in Mr. Fletcher's letter I do not understand. The exercise, on the part of Government, of the control placed in its hands over the trains to be run, does in no degree interfere with the position of the Traffic Manager, as the Manager of such trains, when their running has been sanctioned.

22. When the Government resolve that no special or extra trains shall be run without its sanction—such sanction being given on applications from the Agent—there is the least possible likelihood of any doubt being entertained "as to the authority for running" them.

23. It may be necessary to explain, in conclusion, that the occasion mentioned in the 3rd para. of Mr. Fletcher's letter, was one on which the Railway officers had been unaware of, or had made no provision in the way of extra trains for, a large annual festival at Trivellore.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 14th October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 361.

Extract from the Minutes of Consultation, dated 25th October 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 14th October 1856.)

The Governor in Council fully concurs with the Consulting Engineer in the views expressed in his observations of the 14th instant, and requests that he will inform the Railway Agent and Manager that the Government, having duly weighed all that has been urged by him and by the Traffic Manager, see no reason for deviating from the orders which they have already given in respect to the running of special Trains.

2. With respect to the suggestion contained in the concluding para. of Major Jenkins' letter of the 24th September, it is remarked that the Government have recently received from the Supreme and Bombay Governments, reports on the practice in regard to the running of special Trains on the Bengal and Bombay Railways. The Consulting Engineer, to whom these have been communicated, will furnish copies to the Railway Agent for his information.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

No. 4547.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

To T. PYCROFT, ESQUIRE,

Chief Secretary to Government, Fort Saint George, dated the 26th September 1856.

Public Works Department, } SIR,
Railway.

I am directed to acknowledge the receipt of your letter, No. 287, dated the 13th instant, and in reply to state for the information of the Right Honorable the Governor in Council, that the running of special Trains under this Presidency, is left to the discretion of the Railway Officers, subject, of course to the General Regulations.

2. I am desired to take this opportunity to forward copy of a letter addressed to the Managing Director and Agent of the East India Railway Company, under date the 9th February 1855, No. 6, sanctioning rates of charge for special trains.

I have, &c.,

(Signed) W. E. BAKER, LIEUTENANT COLONEL,

Secretary to the Government of India.

Fort William, the 26th September 1856.

No. 6.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

To R. M. STEPHENSON, Esq.,

Managing Director and Agent East India Railway Company, dated the 9th February 1855.

Public Works Department } SIR,
Railway.

I am directed to acknowledge the receipt of your letter, No. 2108, dated the 18th ultimo, with enclosure, respecting the rates of charge for special trains, and in reply to state that the Governor General in Council has been pleased to sanction Mr. Hodgson's proposition with some modification, and to decide that special trains shall be charged for the distance to which they are taken, provided it be not less than 20 miles, but that the minimum charge be for 20 miles, and for two carriages, of which one shall be 1st class, and that the person ordering the train shall pay for all the seats in the two carriages, and for those in as many more carriages as he may require, at the full mileage fare if the train is to travel in one direction only—and at the reduced fare of 3rd for the whole distance, if he should return by the same train on the same day. That a Break Van shall always accompany a special train, and that luggage conveyed in it shall be charged at the usual luggage rates.

I have, &c.

(Signed) W. E. BAKER, LIEUTENANT COLONEL,

Secretary to the Government of India.

Council Chamber, the 9th February 1855.

(True Copy.)

(Signed) W. E. BAKER, LIEUTENANT COLONEL,

Secretary to the Government of India.

(True Copies.)

(Signed) T. PYCROFT,

Chief Secretary.

PUBLIC WORKS DEPARTMENT,
RAILWAY BRANCH.

No. 638 of 1856.

To T. PYCROFT, Esq.,

Chief Secretary to the Government, Fort Saint George.

SIR,

I am directed to acknowledge the receipt of your letter, No. 287, dated the 13th instant, and to state for the information of the Right Honorable the Governor of Fort Saint George in Council, that when special trains are engaged by private individuals, Government do not exercise any control over them; but that in the case of special excursion trains for the use of the Public generally, the Company have always been required, under clause 8 of their deed of Contract, to submit for the approval and sanction of Government, proposals as to time and rates of fare for running them.

I have, &c.,

(Signed) W. HART,

Secretary to Government.

(True Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

Bombay Castle, 30th September 1856.

FINANCIAL (RAILWAY) DEPARTMENT.
No. 347.

Extract from the Minutes of Consultation, dated 16th October 1856.

Read the following letters.

From the Secretary to the Government of India.

(Here enter 26th September 1856.)

Read the following letters.

From the Secretary to the Government of Bombay.

(Here enter 30th September 1856.)

Ordered that copies of the foregoing letters be furnished to the Consulting Engineer for Railways, with reference to Extract from the Minutes of Consultation, of the 9th ultimo, No. 282.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 334.

Extract from the Minutes of Consultation, dated 7th October 1856.

Read the following letter.

MADRAS RAILWAY, 20TH SEPTEMBER 1856.

No. 622.

FROM MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

1. I have the honor to acknowledge the receipt by me yesterday, of a copy of Extract from the Minutes of Consultation, Financial Railway Department, No. 282, dated the 9th September, in which Government have been pleased to state that they are not prepared to allow the Agent and Manager of this Company, authority to run Special Trains on his own discretion; that application to the Government by the Consulting Engineer may be dispensed with, and that the matter may be disposed of by him, or, in his absence, by his Deputy.

2. I have the honor to solicit the Government to be pleased to reconsider this order, as it involves a question of vital importance to this Company.

3. The Consulting Engineer, in his communications with me, has always retained a semblance of his instructions having emanated from higher authority, and it being my wish, as it is my duty, to conduct the affairs of this Company with the Government Officer, in as amicable a spirit as possible. I did not think it necessary to question the point. But the Government have now directed that the management of this Company in communication with the internal arrangements necessary for the conduct of the Traffic, should be subservient to the opinions of their Officers; and this being an innovation of the terms of the contract, I beg most respectfully, but firmly, to protest against it, and as the Agent and Manager of the Madras Railway Company, representing the interests of the shareholders and a

capital of £5,000,000 sterling, must beg to decline to acknowledge any authority, but that as constituted by law, and provided for in the contract, viz., the Governor and Council of Fort Saint George.

I have &c.,

(Signed) T. A. JENKINS,
Agent and Manager.

ORDER.—It is remarked that the above letter should have been forwarded to Government, through the usual channel of the Consulting Engineer: resolved that it be referred to that officer for his observations.

(True Extract and Copy.)

(Signed) T. PYCROFT,
Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 199.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

No. 622, dated 20th September 1856.

I have the honor to acknowledge the receipt of a copy of a letter, from the Agent and Manager of the Madras Railway Company, to the Chief Secretary, referred by Government for my observations, with the remark that the same should have been forwarded through the usual channel.

2. The Agent in this letter, refers to a late order of Government, wherein it was resolved that application for sanction to run special, or extra trains, should be made in the usual manner to Government; but (with a view obviously to expediting business) the Government Officer was authorized to dispose of such applications.

3. Against such orders the Agent and Manager protests, and declines to acknowledge "any authority but that as constituted by law, and provided for in the contract, viz., the Governor and Council of Fort Saint George."

4. It appears to me that the Agent has written this letter to Government, under a grave misapprehension of the subject to which he refers.

5. It is in accordance with the terms of the contract, clause 27, with the orders of the Honorable Court, with the ordinary and necessary forms of business, that the Government have appointed an officer to conduct the duties connected with the supervision and control of the proceedings of the Railway Company in India.

6. No one in the least degree acquainted with official routine can be ignorant of the fact, that a Government necessarily leaves to officers selected by them for situations of trust and importance, authority to act in case of emergency on matters of routine in anticipation of their approval; but it should have been quite sufficient for the Agent to have observed in the present case, that by the Contract to which he refers, clause 27, any notice, direction, approval and sanction shall be sufficient and binding, if signed by any officer, or servant, of the East India Company, duly authorized to act on behalf of the East India Company.

7. I cannot suppose that the Agent, if his attention had been directed to this clause, could have protested against the Government authorizing an officer thus to act on its behalf.

8. The Agent in this letter speaks of instructions from this office, retaining a semblance of having emanated from higher authority, and attributes the attention hitherto paid by him to such instructions, to his desire to conduct the affairs of the Company in an amicable manner.

9. To leave the Agent under so serious a misapprehension regarding the relative position of himself and the Government officer, would probably give rise to some embarrassment hereafter, and I would suggest that he be invited to reconsider this letter, with reference to the clause above quoted (27), and that in the event of his adhering to these views his letter be forwarded to the Honorable Court for their consideration and orders.

10. In the meantime it may tend to remove any disposition on the part of the Agent to question orders emanating from this office, if the Government will sanction the adoption of a course slightly different from that hitherto pursued, viz., the conveying all instructions in one and the same form, viz., by letter; the Minutes of Consultation, being recorded in this office, when received, as the authority for such instructions as may be framed upon them.

11. It may be as well, for me, to add that I have looked in vain through the contract, for the special privilege claimed by the Agent of communicating immediately with the "Governor and Council of Fort Saint George." The controlling authority referred to seems, in all cases, to be the East India Company.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 15th October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 394.

Extract from the Minutes of Consultation, dated 7th November 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 15th October 1856, No. 199.)

In his letter of the 20th September last, the Agent and Manager of the Madras Railway protests against the order of Government of the 9th idem, and "declines to acknowledge any authority, but that as constituted by law, and provided for in the contract, viz., the Governor and Council of Fort Saint George."

2. The Governor in Council must observe that the order in question was passed with intent to prevent delay and inconvenience in the dispatch of business. It did not, as apparently supposed by the Agent, prescribe that application by the Consulting Engineer to the Government, in the matter of Special Trains, was to be dispensed with absolutely—or that the matter was in all cases to be disposed of by him, or, in his absence, by his Deputy. It simply provided that when the Agent and Consulting Engineer or his Deputy, were agreed as to the expediency of running any Special Train, it was to run at once. When the Consulting Engineer objected to the train, he was to refer the question to Government.

3. The Governor in Council, however, quite agrees with Colonel Pears, that the Railway Agent and Manager, in protesting, as he has seemingly done in his letter, against the delegation of any authority by the Government to their Consulting Engineer, and in declining to recognize any authority but that of the Governor and Council, has altogether misapprehended the relative position of himself and of the former officer, and has wholly overlooked the provisions of clause 27 of the contract. By that clause it is prescribed that any notice, direction, &c., shall be sufficient, if signed, not by the Secretary of the Government at Madras only, but by any other duly authorized officer, or servant of the East India Company. The Consulting Engineer is such officer, appointed, as Colonel Pears has remarked, in accordance with the terms of the contract, with the orders of the Honorable Court, and with the ordinary and necessary forms of business, to conduct the duties connected with the supervision and control of the proceedings of the Railway Company in India. All notices, directions, approvals, and sanctions, bearing his signature, are therefore binding on the Railway Company, he being responsible to his own Government, if he exceed the authority given him.

4. That this is the view taken in Bengal, appears from the Minute of His Lordship the late Governor General, 20th April 1853, para 78, wherein he says "the Consulting Engineer is placed in direct communication with the Railway Company, and has authority to settle all matters of detail or professional questions, unless they should be of great magnitude, without previous reference to Government."

5. The Consulting Engineer will, as he has proposed, invite the Agent and Manager to reconsider his letter in reference to the above remarks. Should he adhere to his former views, the question must be submitted to the Honorable Court for their consideration and orders, and the subject of Special Trains, out of which it arose, will be laid before them at the same time.

6. Meanwhile, the Government sanction the change of practice suggested by the Consulting Engineer in para 10 of his observations, viz., that, in place of copy of the Extract from the Minutes of Consultation being furnished to the Agent, the instructions that it contains be conveyed to him by letter—the extract itself being recorded in the office of the Consulting Engineer as his authority for the orders given.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 583.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor, by order of Government, to acknowledge the receipt of your letter, No. 622, dated 20th September 1856, addressed to the Chief Secretary, in which you protest against the order of Government of the 9th September, No. 282, and "decline to acknowledge any authority, but that as constituted by Law, and provided for in the contract, viz., the Governor and Council of Fort Saint George," and I have to convey to you the following orders thereon.

2. The Governor in Council must observe, that the order in question was passed with intent to prevent delay and inconvenience in the despatch of business. It did not, as apparently supposed by you, prescribe that application by the Consulting Engineer to the Government, in the matter of special Trains, was to be dispensed with absolutely, or that the matter was in all cases to be disposed of by him, or, in his absence, by his Deputy. It simply provided that, when you and the Consulting Engineer, or his Deputy, were agreed as to the expediency of running any special Train, it was to run at once. When the Consulting Engineer objected to the Train, he was to refer the question to Government.

3. The Governor in Council, however considers that in protesting, as you have seemingly done, against the delegation of any authority by the Government to their Consulting Engineer, and in declining to recognize any authority but that of the Governor in Council, you have altogether misapprehended the relative position of yourself and of the former officer, and have wholly overlooked the provisions of Clause 27 of the contract. By that Clause it is prescribed that any notice, direction, &c., shall be sufficient, if signed, not by the Secretary of the Government at Madras only, but by any other duly authorized officer or servant of the East India Company. The Consulting Engineer is such officer, appointed in accordance with the terms of the contract, with the orders of the Honorable Court, and with the ordinary and necessary forms of business, to conduct the duties connected with the supervision and control of the proceedings of the Railway Company in India. All notices, directions, approvals, and sanctions bearing his signature are, therefore, binding on the Railway Company, he being responsible to his own Government if he exceed the authority given him.

4. That this is the view taken in Bengal, appears from the Minute of His Lordship the late Governor General, 20th April 1853, para. 78, wherein he says, "the Consulting Engineer is placed in direct communication, and has authority to settle all matters of detail or professional questions, unless they should be of great magnitude, without previous reference to Government."

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5. The Governor in Council, therefore, invites you to reconsider your letter in reference to the above remarks. Should you adhere to your former views, the question must be submitted to the Honorable Court for their consideration and orders, and the subject of Special Trains, out of which it arose, will be laid before them at the same time.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 12th November 1856.

MADRAS RAILWAY,
MADRAS, 17TH NOVEMBER 1856.

No. 805.

To LIEUTENANT COLONEL T. T. PEARS, C. B.

Consulting Engineer for Railways.

SIR,

With reference to the 5th paragraph of your letter, No. 583, dated the 12th November, I have the honor to state that the subject matter therein adverted to, has been reported by me to the Board of Directors of this Company, and, consequently, I beg to submit that it is no longer in my hands, but in those of my principals.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted for the orders of Government, with reference to para 5 of the Extract Minutes of Consultation, No. 394, dated 7th November 1856.

Madras, 18th November 1856.

T. T. PEARS,

Consulting Engineer for Railways.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 429.

Extract from the Minutes of Consultation, dated 26th November 1856.

Read the following letter from the Agent and Manager, through the Consulting Engineer for Railways.

(Here enter 17th November 1856.)

Ordered that the question considered in Extract Minutes of Consultation, of the 7th instant, No. 394, and the subject of Special Trains, out of which it arose, be submitted for the orders of the Honorable the Court of Directors by the next mail.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

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RAILWAY DEPARTMENT
CONSULTING ENGINEER'S OFFICE.

No. 656.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

Adverting to your letter, No. 805, of the 17th instant, I have the honor, under the orders of Government, to inform you, that the question considered in my letter, No. 583, dated 11th idem, and the subject of Special Trains, out of which it arose, will be submitted for the orders of the Honorable the Court of Directors by this mail.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 27th November 1856.

TREASURE BY RAIL.

FINANCIAL DEPARTMENT.

No. 336.

Extract from the Minutes of Consultation, dated 15th July 1856.

Read the following letter.

QUARTER MASTER GENERAL'S OFFICE.

No. 213.

FROM THE QUARTER MASTER GENERAL OF THE ARMY,
TO THE CHIEF SECRETARY TO GOVERNMENT, MILITARY DEPARTMENT.

SIR,

As Treasure Escorts to the Presidency are numerous, I have the honor, by desire of the Commander-in-Chief, to request you will be so good as to submit to Government His Excellency's recommendation, that all Treasure for the Presidency arriving at Arcot, should be conveyed from thence to Madras by rail, the Military Guard escorting the Treasure returning at once from Arcot to rejoin, or in the event of its being required to escort small coins back to the provinces, receiving charge of it there.

I have, &c.,

(Signed) F. A. REID,

Quarter Master General.

Fort St. George, 10th July 1856.

ORDER.—Ordered that the foregoing letter be referred to the Acting Accountant General, Sub-Treasurer, and the Consulting Engineer for their remarks.

(True Extract and Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

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No. 375.

To Major T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

In forwarding for your information copy of an Extract* from Minutes of Consultation, with letter from the Quarter Master General of the Army, on the subject of the conveyance of treasure by rail, I have the honor to request you will be good enough to inform me, whether any, and what arrangements, can be made for relieving the Government of all responsibility, regarding the custody of the treasure during its transit by rail, and thus enabling the Military authorities to carry out the arrangements proposed with reference to the escort.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Arcot, 18th July 1856.

MADRAS RAILWAY, 21ST JULY 1856.

No. 486.

To Lieutenant Colonel T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I have the honor, with reference to your letter, No. 375, dated 18th instant, and its enclosure, being an Extract Minutes of Consultation No. 365, dated 15th idem, on a letter from the Quarter Master General of the Army, No. 213, dated 10th idem, to state that this Company is not prepared to convey Treasure of any description at their responsibility, other than as provided for in the 10th Article of the Act No. 18, of 1854.

2. I would beg to suggest that the Government send with their Treasure a small escort. The Officer and any one or two of the parties could, if desired, proceed on the vans with the Treasure, and the Treasure will, in all cases, be conveyed at the rates laid down in Extract Minutes of Consultation No. 29, dated 14th February 1855, by Passenger Trains.

3. The charge for the Escort will be in accordance with the 20th Para of the Contract.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Coimbatore, 23rd August 1856.

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No. 166.

On a letter from the Agent and Manager of the Madras Railway Company, No. 486, dated 21st July 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

With reference to an Extract from Minutes of Consultation, No. 336, dated the 15th July, the Agent states the Railway Company is not prepared to carry Treasure of any description on their responsibility, other than as provided for in the 10th Art. of the Act No. 18 of 1854.

2. The Agent further suggests that an escort should always be sent in charge of Treasure.

3. The clause (10) of Act 18, referred to by the Agent, provides that the Company shall not in any case be answerable for loss of, or injury to, any gold or silver, coined or uncoined, &c. &c., unless the value and nature of such articles shall have been declared by the person or persons sending or delivering the same, and an increased charge, for the safe conveyance of the same, shall have been accepted by some person specially authorized to enter into such engagements, on behalf of the said Railway Company.

4. With Extract from Minutes of Consultation, No. 29, of the 14th February 1855, an order of Government of India was received, sanctioning a special charge for conveyance of public Treasure, considerably above that charged for ordinary goods of any class. It appears probable, therefore, that this "increased charge" thus laid down was intended to meet the requirements of the clause in question, and to empower the Government to send their Treasure upon the responsibility of the Railway Company.

5. Government may, perhaps, think proper to refer for information to Bengal, as to the practice on the East Indian Railway, and, in the meantime, it would be as well, since, under any circumstances, risk laid on to the Railway Company is at present borne by the Government, to send a small escort in charge of Treasure conveyed by Railway.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Coimbatore, 23rd August 1856.

FINANCIAL DEPARTMENT.

No. 436.

Extract from the Minutes of Consultation, dated 9th September 1856.

Read the following papers.

From the Acting Accountant General. States that this office sees no objection to the recommendation of H. E. the Commander-in Chief that all Treasure for the Presidency, arriving at Arcot, be conveyed thence to Madras by Rail, but it is not prepared to assent that the Military guard, escorting the Treasure, should at once return from Arcot to rejoin, or to wait there to take charge of any small coins to be sent into the Provinces.

Dated 6th August 1856.

From the Sub-Treasurer. Submits remarks on a letter from the Quarter Master General of the Army, relative to the suggestion of H. E. the Commander-in Chief, with regard to Treasure being transmitted via Arcot by Rail.

Dated 6th August 1856.

Dated 23rd August 1856.

From the Consulting Engineer for Railways.

Before finally determining on the course to be pursued with respect to the conveyance of public treasure by the Railway, the Right Honorable the Governor in Council resolves, as suggested by the Consulting Engineer, to apply to the Government of India for information as to the practice observed on the East Indian Railway, forwarding to them copies of the letter from the Quarter Master General of the Army, and of the communications from the Railway Agent and Consulting Engineer.

Dated 10th July 1856. No. 213.

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2. In the meantime, the Government resolve to communicate to His Excellency the Commander in Chief the letter from the Accountant General and Sub-Treasurer, and also that from the Railway Agent with Colonel Pears' observations thereon—and to intimate that it will be necessary, for the present, that the officer in charge and a small portion of the escort should accompany the treasure conveyed by the Railways.

3. The Governor in Council desires that the Accountant General will, in communication with the Railway Agent and the Sub-Treasurer, make such arrangement, and issue such instructions as may be necessary, to ensure the proper custody and safe conveyance of public treasure and supplies of small coins by Rail to and from Arcot.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

FINANCIAL DEPARTMENT.

No. 533.

Extract from the Minutes of Consultation, dated 3rd November 1856.

Read the following letter.

No. 4799.

FROM LIEUTENANT COLONEL W. E. BAKER,

Secretary to the Government of India.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George, dated 8th October 1856.

Public Works Department, }
Railway. } Sir,

I am directed to acknowledge the receipt of your letter, No. 437, dated the 9th ultimo, with enclosure, and in reply to state, for the information of the Right Honorable the Governor in Council, that the scale of charges, authorized in the letter from the Secretary to the Government of India, in the Home Department, to your address, No. 91, dated 25th January 1855, to be adopted for the conveyance of public treasure by Railway, was calculated on the assumption that the Railway Companies are to be held responsible only for the strict observance of all the regulations in force for the safe conduct of Trains. The Railway Companies are not to be held liable for loss of public treasure during transit, provided the treasure be invariably placed either in tumbrils constructed for the purpose, and affording accommodation for the escort, or in covered waggons of approved pattern, to be locked by the Officer, or Non-commissioned Officer, Commanding the Escort who will retain the key. The escort to be carried at the rates laid down for Troops.

I have, &c.,

(Signed) W. E. BAKER, LIEUTENANT COLONEL,
Secretary to the Government of India.

Fort William,
the 8th October 1856. }

ORDER.—Ordered that a copy of the foregoing letter be furnished to the Consulting Engineer for communication to the Railway Agent, with reference to Extract Minutes of Consultation, 9th September 1856, No. 436, and that it be also communicated to the Quarter Master General of the Army, the Accountant General, and Sub-Treasurer, for information and guidance.

(True Extract and Copy.)

(Signed) T. PYCROFT,
Chief Secretary.

FINANCIAL DEPARTMENT,
FORT SAINT GEORGE,
ACCOUNTANT GENERAL'S OFFICE,
6TH DECEMBER 1856.

No. 811.

FROM G. L. PRENDERGAST, Esq.,

Accountant General.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways, Madras.

SIR,

1. With reference to the third para of Extract from Minutes of Consultation, dated the 9th September last, No. 436, I have the honor to transmit, herewith, a Memorandum of the arrangements, which I propose should be made, in order to insure the proper custody and safe conveyance of public Treasure, and supplies of small coins from Arcot to Madras, and vice versa, by Railway.

2. I shall be glad to receive any suggestions you may have to offer on the subject. I have sent a similar Memorandum to the Collector of North Arcot, to be acted on by him, if necessary, in the meantime.

3. I suppose it will devolve upon you to see to the provision of suitable Tumbrils, or covered waggons, for the reception of public Treasure, in transit by Railway, alluded to in Extract from Minutes of Consultation, dated the 3rd ultimo, No. 533.

I have, &c.,

G. L. PRENDERGAST,
Accountant General.

MEMORANDUM.

Under the orders of Government, contained in Extracts from Minutes of Consultation, dated 9th September 1856, No. 436, and 3rd November 1856, No. 533, the following arrangements will be observed by the parties concerned, with a view to ensure the proper custody and safe conveyance of public Treasure, and supplies of small coins, by Rail from Arcot to Madras and vice versa.

FROM ARCOT TO MADRAS.

1. Whenever a remittance in specie is ordered down to the Presidency from the provinces, and passes by Arcot, the Collector, making the remittance, will be instructed by the Accountant General, to arrange with the Cart owners for bringing it as far as Arcot only.

2. Intimation of the remittance will be given, by the Accountant General, to the Collector of North Arcot, who will thereupon ascertain from the Collector, forwarding the remittance, in what number of boxes it is contained, and on what probable day it will reach Arcot.

3. Upon obtaining the above information, the Collector of North Arcot will intimate the same without delay to the Consulting Engineer for Railways, who will issue the necessary instructions respecting it in his Department. Copies of his letter, to the Consulting Engineer, should at the same time be forwarded to the Accountant General, and to the Sub-Treasurer respectively.

4. On the arrival of the remittance at Arcot, the Collector, or one of his Assistants, will cause the Revenue and Police Officers of the station to afford every assistance and facility for transferring the boxes of treasure from the carts to the Railway conveyances. He will also give immediate intimation, by telegraph, to the Sub-Treasurer, and inform him of the number of boxes composing the remittance, and of the number of carts, that will be required to convey them, as well as of the probable time of their despatch from Arcot by Rail.

5. The Officer commanding the Treasure party, together with a small portion of his party, will accompany the remittance by Rail from Arcot to the Railway terminus at Royapooram.

6. On receiving the telegraph Message from Arcot, the Sub-Treasurer will take measures, in communication with the Commissary General, and the Quarter Master General of the Army, to have the proper number of Carts and Escort in readiness, at the Royapooram terminus, to receive the remittance on its arrival there, as well as a suitable number of coolies to convey the boxes of treasure from the Railway Carriages, and to place them on the Carts provided for them.

7. After satisfying himself as to the number and condition of the Treasure boxes, and seeing them properly secured on the Carts, the Officer, Commanding the Escort, will conduct the same to the General Treasury in Fort Saint George, and there deliver them over to the Sub-Treasurer, who will pass his receipt in the usual manner.

To ARCOT FROM MADRAS.

1. Whenever supplies of small Silver and Copper Coins are to be sent from the Presidency into the provinces *via* Arcot, the Accountant General will instruct the Sub-Treasurer as to the quantity to be packed up, and in what Treasury in the provinces they are to be lodged. He will usually avail himself of the opportunity of return* Escorts for this purpose; consequently, such remittances will usually be taken charge of by Officers bringing down remittances from the provinces to the Presidency.

2. On receiving the necessary instructions from the Accountant General, to send a supply of small coins into the Provinces, the Sub-Treasurer will cause the same to be packed up, and will make arrangements, in communication with the Commissary General, and the Quarter Master General of the Army, for having the same safely guarded and conveyed to the Royapooram Railway terminus, and there securely placed on the Railway waggons, in charge of the Officer Commanding the Escort returning by Rail.

3. In the meantime, the Sub-Treasurer will give the earliest intimation to the Collector of North Arcot of the number of Treasure boxes, and of the probable number of carts that will be required to convey them from Arcot to their destination, and also of the probable time of despatch of the remittance from Madras. He will also forward to the Consulting Engineer for Railways a copy of his letter to the Collector of North Arcot, as well as a copy to the Accountant General.

4. On hearing from the Sub-Treasurer, the Collector of North Arcot will take immediate steps for having the required number of carts provided for conveying the remittance from Arcot, on its arrival there. The Head Assistant Collector, at Rawnypett, will cause the Revenue and Police Officers of the station to afford every facility and assistance in transferring the boxes of Treasure from the Railway Waggons and securely placed on the carts provided for them. He will also see the same despatched in charge of the Officer Commanding the Military Escort, and report the circumstance without delay to this Office, as well as to the Collector for whose Treasury the remittance may be intended.

G. J. PRENDERGAST,

Accountant General.

Fort Saint George,
Accountant General's Office,
6th December 1856.

No. 730.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

I have the honor to forward, for your observations, a letter* from the Accountant General, with Memorandum regarding the arrangement proposed by that officer for the conveyance of treasure by Rail.

2. You will observe that the Accountant General proposes to communicate with this Office. The intimation referred to should, I presume, be conveyed either to the Traffic Manager or Station Master, and on the occasion of treasure going Westward, as well as of that coming into Madras.

3. I request that these papers may be returned at your earliest convenience.

I have, &c.,

(Signed) T. T. PEARSON,

Consulting Engineer for Railways.

Madras, 15th December 1856.

MEDALS BY RAIL.

PUBLIC DEPARTMENT.

No. 836.

Extract from the Minutes of Consultation, dated 17th July 1856.

Read the following letter.

No. 543.

FROM THE ADJUTANT GENERAL OF THE ARMY,

TO THE SECRETARY TO GOVERNMENT, MILITARY DEPARTMENT.

SIR,

I have the honor, by order of the Commander-in-Chief, to request you will be good enough to solicit the sanction of the Right Honorable the Governor in Council, for Medals being forwarded on all feasible occasions by the Railway, through the Agency of the Ordnance Commissariat Department.

I have, &c.,

(Signed) W. G. WOODS, LIEUTENANT COLONEL,
Adjutant General of the Army.

Adjutant General's Office,
Fort Saint George,
11th July 1856.

ORDER.—Referred for the remarks of the Consulting Engineer for Railways.
(True Extract and Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 154.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

In acknowledging the receipt of Extract from Minutes of Consultation, in the Public Department, No. 836, of the 17th July 1856, forwarding for my remarks copy of a letter from the Adjutant General of the Army, respecting the conveyance by rail of Medals, I have the honor to observe that Medals will, it appears to me, properly fall under the head of "General stores belonging to the East India Company," and may be forwarded on the terms and conditions specified in para 19 of the Contract between the Honorable East India Company and the Madras Railway Company, dated the 17th December 1855.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Keelmooringhy, 22nd July 1856.

PUBLIC DEPARTMENT.

No. 1949.

Extract from the Minutes of Consultation, dated 2nd September 1856.

Read the following letter.

No. 685.

FROM THE ADJUTANT GENERAL OF THE ARMY.

TO THE CHIEF SECRETARY TO GOVERNMENT,

Fort Saint George.

SIR,

Forwarding a printed copy of the Contract between the Government and the Railway Company, in reference to the letter from the Adjutant General of the Army, dated 11th July 1856, No. 543, respecting the conveyance of Medals by Rail.

With reference to Minutes of Consultation Public Department dated 7th August 1856, No. 912, I have the honor, by order of the Commander-in-Chief, to forward, for the orders of the Right Honorable the Governor in Council, the accompanying letter from the Principal Commissary of Ordnance, together with one from the Traffic Manager of the Madras Railway, from which it appears that the latter Official takes a different view of the terms on which the Medals are to be carried by the Railway Company from that of the Consulting Engineer.

I have, &c.,

(Signed) W. G. WOODS, LIEUTENANT COLONEL,

Adjutant General of the Army.

Adjutant General's Office,
Fort Saint George,
23rd August 1856.

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ORDNANCE DEPARTMENT.

No. 1857.

FROM COLONEL P. HAMOND,

Principal Commissary of Ordnance,

TO THE ADJUTANT GENERAL OF THE ARMY,

Fort Saint George.

SIR,

In reply to your letter, No. 782, of the 12th instant, I have herewith the honor to forward one from the Traffic Manager Madras Railway, by which you will observe, that he takes a different view of the terms on which the medals are to be carried by the Railway Company from the Consulting Engineer. I therefore request you will be good enough to furnish me with instructions for guidance.

I have, &c.,

(Signed) P. HAMOND, COLONEL,

Principal Commissary of Ordnance.

Arsenal, Fort St. George, 18th August 1856.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
16th August 1856.

MY DEAR SIR,

I am in receipt of your favor of yesterday with its enclosures (herewith returned). I am of opinion that if you forward the case of medals by Passenger Train, that it can be charged either as an ordinary parcel, at the rates advertised in the Railway Company's Time and Fare Table, as enclosed, or it may be forwarded as treasure by Passenger or Goods Train at the rates authorized for treasure, viz. 2½ pies per maund per mile, when not exceeding 35 maunds weight.

If the case of medals be forwarded by the Goods Train, it would be charged at the Third Class rate of ¾ of a pie per Indian maund per mile, as silver in a manufactured state.

Under these rates, however, by Passenger and Goods Trains, the Railway Company do not incur any risk or responsibility, as it is provided in the 10th Clause of Act 18 for Railways of 1854, that "no such Railway Company shall, in any case, be answerable for loss of or injury to any gold or silver, coined or uncoined, manufactured or unmanufactured, &c., &c.," "or any of them contained in any parcel, or package, which shall have been delivered to such Railway Company either to be carried for hire, or to accompany the person of any passenger, unless the value and nature of such articles shall have been declared by the person or persons sending or delivering the same, and an increased charge for the safe conveyance of the same shall have been accepted by some person specially authorized to enter into such engagement on behalf of the said Railway Company."

If it be forwarded by Passenger or goods Train, it will be charged at the lowest rate chargeable for such articles, and the Railway Company take no responsibility, unless paid for upon a rate for insurance yet to be determined; with this view before me, I suggested yesterday that you could forward the case of medals in charge of some one in your Department, and that the case could be charged as Passenger's Luggage or Treasure, and I am of opinion that such would be under all circumstances the best course to pursue.

Yours faithfully,

(Signed) H. A. FLETCHER,

Traffic Manager.

ORDER.—The foregoing letter and its enclosures will be communicated to the Consulting Engineer for Railways, with reference to his letter of the 22nd ultimo, for any further remarks that he may have to offer.

(True Extract and Copies.)

(Signed) T. PYCROFT,

Chief Secretary.

No. 458.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

* To be returned, Financial
(Railway) Department, No.
1044, dated 2nd September
1856.

* No. 154 and 22nd July
1856.

I have the honor to forward for your information an Extract* from Minutes of Consultation, together with a letter from the Adjutant General of the Army and enclosures, on the subject of the conveyance of medals by Railway, and also a copy of my former report† to Government on the subject, and I have to request that I may be favored with your opinion upon the subject at your earliest convenience.

2. The question seems to be simply whether medals are treasure, since, if they are not, they fall certainly under "Military Stores," and of necessity under clause 19 of the Contract. Under any circumstances, as Government property, they seem to me to fall under special Contract with Government, not to be referred to the Table of Fares.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Ootacamund, 20th September 1856.

MADRAS RAILWAY,
MADRAS, 25TH SEPTEMBER 1856.

No. 635.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 458, dated the 20th instant, I have the honor to state that I concur in the opinion expressed by the Traffic Manager, contained in his letter dated 16th ultimo, to the address of the Principal Commissary of Ordnance, to the effect that, if a case containing medals of wrought silver be forwarded by Railway, it may be sent either by Passenger Trains as a parcel, or by Goods Trains as Silver in a manufactured state, or it may be sent by Passenger or Goods Train as Treasure, but in no case is this Company to be responsible for loss or injury : unless the same be specially insured, in accordance with clause 10 of Act 18 of 1854.

2. In advertence to the 3rd para. of your letter, you state "under any circumstances, as Government property, they seem to me to fall under special contract with Government, not to be referred to the Table of Fares." I have carefully examined the contract, but do not see the grounds upon which you have formed your conclusions, as in the 19th Para. of the Contract, the only privilege that the Government have over the Public, with the exception of the conveyance of the Mails Free, and Military as specially prescribed, is in a priority for conveyance and carriage; all general stores belonging to the East India Company, and all Guns, Ammunition, Horses, and other animals, used for Military purpose, and all Military Stores, Baggage, Camp Equipage, and Equipments whatsoever, are to be conveyed at the lowest Rate chargeable for the carriage of such Animals, Goods and Merchandise, meaning of course each according to its respective class.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 18th October 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 483.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 635, dated the 25th September, on the subject of the transport of Medals by rail.

2. In this letter you observe (para 1) that in no case is this Company to be responsible for loss or injury, unless the same be specially insured, in accordance with clause 10 of Act XVIII of 1854.

3. It will greatly tend to promote an early and right understanding upon the subject, if you will favor me with your opinion, as to the extent to which the Railway Company are responsible for loss or injury to any description of property, parcels, Goods, merchandise, &c., conveyed by their ordinary Trains; and if you will be good enough, at the same time, to point out, that which I cannot at present discover, any clear or definite information upon the subject in the Contract, in the Act quoted by you, or other official document.

4. As an example of the information which I am desirous of laying before Government, I should wish to be informed to what extent you consider the Company responsible for loss, or injury, to the articles referred to in clause 19 of the Contract, viz. Military Stores, Wagons, Camp Equipage, and equipments.

I shall feel obliged by an early reply.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Jackatalla, }
2nd October 1856. }

MADRAS RAILWAY,
MADRAS, 8TH OCTOBER 1856.

No. 686.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 483, dated 2nd instant, I have the honor to acquaint you that in clause 10 of the Act No. 18, of 1854, certain description of articles are therein specified, any loss attending which the Railway Company are not liable for, unless the value and nature of such article shall have been declared, and an increased charge for the conveyance of the same shall have been accepted.

2. In the following clause it is enacted that the Railway Company shall be answerable for loss, or injury, to any article or Goods carried by them, other than those specially provided for by

the Act, when such loss or injury shall have been caused by gross negligence, or mis-conduct, on the part of the Agent or servants of the Company.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted with (observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 18th October 1856.

No. 203.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 685 and 686, dated severally the 25th September and 8th October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

Public Department, No. 1049,
dated 2nd September 1856.

With reference to a late order of Government, the Agent submits his opinion regarding the conveyance of medals by Railway.

2. In my report, No. 154, dated the 22nd July 1856, I gave it as my opinion, that Medals would fall under the head of General stores belonging to the East India Company, and might be forwarded on the terms and conditions specified in para 19 of the Contract,

No. 835, dated 25th September 1856.

3. The Agent and Manager, in the first of these letters, gives his opinion, that Clause 19 of the Contract gives to the Government no privilege, but that of priority of conveyance and Carriage.

4. In this interpretation of the Contract, I think, the Agent is clearly mistaken.

5. The first question to be decided is, Do medals come under any of the several descriptions of property named in that Clause, as Military stores and equipments? I should say they do certainly.

6. The next question, At what rate are these articles of Military stores and equipments to be charged?

7. The introduction of the word "such" in the expression, "at the lowest rate, for the time" being, chargeable for the carriage of such" &c., might lead to some difficulty, were it possible to interpret it in any way but one; but since to speak of charging for each article at the lowest rate chargeable for such article—meaning by "such" article, one of similar kind—would be to imply that there were more rates than one for the same description of article, which is never the case; we must see that the word "such" is applied in its formal and legal meaning, which is something tantamount to aforesaid.

8. The meaning of the Clause, I believe to be, simply, that all Government property, General stores, &c., shall be conveyed on the Railway, at the lowest rate chargeable, for the time being, for any description of goods.

16th August.

9. But the Agent and the Traffic Manager, in his letter to the Principal Commissary, treat the matter as if the medals were the property of a private individual, or as if the Government had no claim upon them for carriage of its property at a cheaper rate.

10. It will perhaps be as well to refer this correspondence for the decision of the Honorable Court, and, in the meantime, to inform the Agent that the medals will be transmitted in the usual manner by Railway, as Military equipments, and charged for at the lowest rate chargeable for goods. The Government will, I presume, not consider it necessary to insure this or any other property going by Rail.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 18th October 1856.

No. 1298.

Extract from the Minutes of Consultation, dated 29th October 1856.

Read again the following letters.

From the Adjutant General of the Army.

(Dated 11th July 1856, No. 543.)

From the Consulting Engineer for Railways.

(Dated 22nd July 1856, No. 154.)

From the Adjutant General of the Army.

(Dated 23rd August 1856, No. 685.)

Read the following letters from the Agent and Manager of the Railway Company, with the Consulting Engineer's observations thereon.

(Here enter 18th October 1856, No. 203.)

The Governor in Council resolves to refer the correspondence, on the subject of the conveyance of Medals by Railway, for the decision of the Honorable the Court of Directors—and in the meantime to inform the Agent and Manager of the Railway Company, as recommended by the Consulting Engineer, that the Medals will be transmitted, in the usual manner, by Rail as Military equipments, and charged for at the lowest rate chargeable for goods. It is not considered necessary to insure this or any other Government property conveyed by Rail.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

TROOPS, &c., BY RAIL.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 272.

Extract from the Minutes of Consultation, dated 28th August 1856.

* Dated 6th and 20th August 1856, Nos. 248 and 259.

Read letters, * from the Quarter Master General of the Army, with Military Auditor General's Report thereon, referred to this Department from the Military Department under date the 15th and 21st August 1856.

2. Ordered that the foregoing papers be forwarded to the Consulting Engineer for Railways, for any remarks that he may have to make—which he will be so good as to submit as early as possible.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

No. 450.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

* To be returned, Extract Minutes of Consultation, No. 272, 28th August 1856. From the Quarter Master General to Secretary to Government, Military Department, No. 248, 6th August 1856, with enclosures.
From do. to do. No. 259, dated 20th August 1856, with enclosure.

I have the honor to forward, for your information, original* papers, noted in the margin, and to request you will, at your earliest convenience, favor me with your sentiments upon the draft rules prepared by the Quarter Master General of the Army.

2. You will observe that His Excellency the Commander-in-Chief is anxious that the rules should be published as soon as possible. I trust therefore I may be favored with a reply with the least possible delay.

I have, &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 18th September 1856.

MADRAS RAILWAY,
MADRAS, 25TH SEPTEMBER 1856.

No. 636.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

* Extract Minutes of Consultation, No. 272, 28th August 1856. From the Quarter Master General to the Secretary to Government, Military Department, No. 248, 6th August 1856, with enclosures. From do. to do. No. 259, dated 20th August 1856, with enclosure.

1. I have the honor to acknowledge the receipt of your letter*, No. 450, dated 18th instant, with the original papers noted in the margin herewith returned.

2. The draft Rules for the conveyance of Troops forwarded by you seem to meet all the requirements of the Traffic Department with the following exceptions, which do not appear to me to be in accordance with the spirit of the Contract, entered into between this Company and the East India Company.

3. Under the head "baggage," Para 18 of the draft rules, it is prescribed that the Railway Company are bound to convey free of charge to Government, or to Troops and followers, 2 tons, or 54½ Indian maunds, of baggage for every 100 men. I would beg to observe that in Para 19 of the Contract, it does not appear that anything is to be conveyed by the Railway free, with the exception of the Mails and of the Post Office servants when on duty.

4. In Para 23 of the Rules, it is directed that the rate of payment for the conveyance of baggage be fixed at 1 Pie per Indian maund per mile, if conveyed with Troops. In reference to this, I would observe that if the baggage be sent by the Goods Train, then the rates for the conveyance of stores, &c., would be those specified in the classification of Goods; but if the baggage be taken by the Passenger Trains, then the charge will be that authorized for Passengers' luggage, being the lowest rates, for the time being, chargeable to the Public for similar goods and merchandize.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

Madras, 7th November 1856.

T. T. PEARS,

Consulting Engineer for Railways.

No. 495.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

With reference to the proposed rules and regulations regarding the conveyance of Troops by railway, may I request to be favored with your opinion, as to the number of persons for whose conveyance it would be advisable that the authorities should look to the regular trains, beyond which sufficient notice would have to be given for special or extra trains.

2. You will observe that the regulations are framed for the guidance of officers in moving troops and detachments of whatever strength. Small parties would go by ordinary, large by special trains—and it is very desirable that the Military authorities should be distinctly informed as to the strength of a detachment, for which they may with tolerable confidence look for passage by regular trains.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 14th October 1856.

MADRAS RAILWAY,
MADRAS, 4TH NOV. 1856.

No. 568.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 495, dated 14th October, I have the honor to annex a copy of a letter from the Traffic Manager, affording the information therein called for, respecting the number of Troops that can be conveyed by ordinary Trains.

2. In all cases other than those therein adverted to, I beg to state that it will probably be necessary to run Special Trains.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 7th November 1856.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE.
3RD NOVEMBER 1856.

No. 342.

To MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

SIR,

With reference to your letter, No. 116, of the 15th ultimo, enclosing a letter from the Consulting Engineer for Railways, No. 495, I have the honor to observe that the second clause of the "draft rules, For the conveyance of Troops by Railway" provides as follows.

"Requisition (Form A) for the conveyance by Rail of troops, if above 100 in number, including authorized followers, must, excepting in cases of emergency, be made fully 2 days before their conveyance is required; when the number does not exceed 100 men, two hours notice will suffice."

2. For the conveyance of 100 men from Madras to any Station upon the line by an ordinary Passenger Train, two hours notice would, as a general rule, afford sufficient time, for the necessary preparation of carriages, &c.; but should it be necessary to convey a like number from any intermediate station, two hours notice before the departure of the Train from Madras would be necessary, in order that a sufficient number of carriages should be attached to the Train, as carriages are not kept at the road stations.

3. By the ordinary Passenger Trains, as a general rule, 4 carriages, for the conveyance of Troops, could be attached, capable of conveying 176 Soldiers, or 240 followers; but if 6 hours notice were given, 10 carriages could be attached to an ordinary Passenger Train.

4. The 6 hours notice, in the latter case, would be required in order that a larger engine could be provided for the Train.

5. It should, however, be understood, that this arrangement could, at present, only apply to Troops from the Presidency, or from intermediate Stations travelling Westward, and that in the event of Troops requiring conveyance from the Western Terminus (as Arcot at present) or from intermediate Stations travelling Eastward, it would be requisite for the Military authorities to give notice of the same two hours before the departure of the Trains from Madras of the preceding day, or 16 hours notice, in order that carriages could be sent to the Station where they might be required.

6. Upon consulting with our Locomotive Superintendent, I may observe that he concurs with me, that it would not be desirable that the ordinary Passenger Trains should consist of a larger number of carriages than the numbers respectively of 4 in the one case, (for which 2 hours notice would suffice) and 10 in the other (for which 16 hours notice would be required) would entail.

7. I beg also to observe that the carrying out of these arrangements would necessitate the ordinary Third class carriages, in use upon this Railway, being used for the conveyance of Troops and followers.

I have &c.,

H. A. FLETCHER,
Traffic Manager.

(True Copy.)

T. A. JENKINS,
Agent and Manager.

No. 230.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 636 and 768, dated 25th September and 4th November 1856, respectively.

OBSERVATIONS BY THE CONSULTING ENGINEER.

These letters have reference to the draft rules for the conveyance of Troops by Railway, forwarded for remarks with Extract from Minutes of Consultation, No. 272, dated the 28th August 1856.

2. The Agent considers that the rules meet all the requirements of the Traffic Department with some exceptions, of which the first has reference to "baggage."

3. The Agent and Manager considers that the Company are not bound to convey any baggage free of charge.

4. The order from the Government of India, No. 180, dated the 18th August 1854, fixed, on the other hand, the amount of baggage that should be conveyed free, as well as that which the Government would pay for on behalf of the Troops; and the rules now under consideration embody that order.

5. The Agent and Manager also in his letter, No. 137, of the 2nd May 1855, adopted this rule, and embodied the table of free baggage in his proposed Traffic rules.

6. The Government of India, in directing that a certain amount of baggage should be conveyed free, merely claimed, it may be presumed, on the part of the Troops, the same privilege which is accorded to all passengers, and to which they are undoubtedly entitled—that of carrying a certain amount of baggage free for ordinary passengers; the amount to be thus carried free is described as "such small carpet bags, or packages, as can be placed under the seat of the carriage and carried by the owner". For Troops it has been defined by the Government as 2 Tons for 100 men, being about 44 lbs. to a man. I do not think, therefore, the Agent is justified in disputing the right of the Government to lay down this rule.

7. The next objection is to the rate, proposed in the draft rules, for payment of baggage. This is set down as 1 pie per maund per mile. The Agent states that if the baggage be sent by Goods Train, then the rates for the conveyance of Stores, &c., would be those specified in the classification of Goods—there appears some confounding of baggage and stores here; and again, if the baggage were taken by passenger Train the charge will be that authorized for Passengers' luggage.

8. Clause 19 of the Contract (extension) makes no mention of baggage. The order of Government of India, above referred to, provides that a certain quantity should be carried free—justly enough as I have shown—and that another certain quantity shall be paid by Government.

9. It appears to me that, under present conditions, the payment to be made by Government, for this latter portion, must be that laid down for Passengers' luggage.

10. If any portion of the baggage of troops be conveyed by Goods Trains, it might, I conceive, be sent as stores, if forming a portion which the Government has undertaken to pay the carriage for; if in excess of that, and paid for by the Troops themselves, it must be paid for as "Goods," according to the classification.

11. I have very few remarks to offer myself on these draft rules. With reference to para 2, Mr. Fletcher, in the accompanying letter,* shows, that under present circumstances, the extent of notice required depends on the direction in which the Troops are moving; for the conveyance of 100 men from Madras to any Station on the line, by ordinary passenger trains, two hours notice would be sufficient: but if a like number are to be conveyed, in the same direction, from any intermediate station two hours notice at Madras, before the train started from thence, would be requisite.

12. On the other hand, in the event of troops requiring conveyance from Arcot, or from intermediate Stations, to travel East, it would be necessary to give notice of the same two hours before the despatch of the regular train at Madras of the preceding day.

13. The above observations apply solely to arrangements for the conveyance of troops not in sufficient number to require special trains. On the other hand, for very small detachments it cannot be considered necessary to give on all occasions even the notice here required.

14. With reference to para 3 of the draft rules, I would suggest that officers in command of regiments, or detachments, travelling by rail, be enjoined to be careful not to interfere with the ordinary traffic, by bringing their men into the Station before the time appointed for placing them in the carriages, or by occupying the road or premises connected with the Stations, until it should have been ascertained from the Station Master that the proper time had arrived for the troops to march.

* To the Agent, No. 342, dated 3rd November 1856.

15. While the preliminary process of weighing and loading baggage, placing horses in the boxes, delivering the necessary papers to the Station Master, all of which might be conducted by one or two officers; the whole of the Corps, or detachment, should be kept perfectly clear of the Station and of the approaches thereto.

16. I would suggest, at the same time, that the Agent be informed that special trains employed for the conveyance of troops should, when possible, be not started for one hour, at least, after the despatch of any other passenger train.

17. I am not aware upon what authority the charge, named in para. 23 of the draft rules, for excess baggage has been fixed.

18. It seems to me that, if conveyed by the same train, it must be paid for as ordinary passenger luggage. It would be well, at all events, that troops were warned against bringing more than the allowance of baggage with them, and instructed to send by Goods Train whatever they have in excess.

19. Para. 27 of the draft rules appears to me to be written under a misconception of the meaning of para. 19 of the Contract. I conceive, as stated in my report No. 202, dated 13th October 1856, on the conveyance of medals, that the Government property, &c., alluded to in that clause, is to be conveyed at the lowest rate for the time being chargeable for any description of Goods.

20. Para. 32 contains a notification, with the origin of which I am not acquainted. Clause 19 of the Contract does not allude to any particular description of Trains. The Government, as a general rule, would send all heavy stores by Goods Trains; but there is nothing that I can see in the Contract empowering the Railway Company to claim a higher charge for stores accompanying the Troops.

21. The bill submitted to Government by the Quarter Master General should be corrected in the item of baggage, each man being allowed at the rate of 2 Tons per 100 men, and the difference charged to Government.

Madras, 7th November 1856.

T. T. PEARS,
Consulting Engineer for Railways.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 413.

Extract from the Minutes of Consultation, dated 19th November 1856.

Read again letters from the Quarter Master General of the Army, with Military Auditor General's report, dated 6th and 20th August 1856.

Read the following observations of the Consulting Engineer, on letters from the Agent and Manager of the Railway Company.

(Here enter 7th November 1856.)

The Government concur in the remarks and suggestions of the Consulting Engineer, in his report upon the draft rules for the conveyance of Troops, baggage and stores, by Railway, and on the bill, for the conveyance of certain European details by Rail to Arcot, submitted by the Quarter Master General, with his letters of the 6th and 20th August, and direct that the papers on the subject be communicated to the Military Department.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 627.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

Nos. 636 and 768, 25th September and 4th November 1856.

With reference to your letters, on the subject of the draft rules, for the conveyance of Troops, baggage, and stores, by Railway, I have the honor to convey to you the orders of Government, in regard to the exceptions taken by you to certain portions thereof.

2. As regards your opinion, that the Railway Company are not bound to convey any baggage free of charge, the Government observe that such is in direct opposition to the orders of the Supreme Government, in the framing of which the privilege acceded to all passengers to convey a certain amount of baggage free was doubtless held in view.

It has been ruled that two tons per 100 men is the weight of baggage to be carried by the Railway Company, free of charge; and the Government are clearly of opinion that such rule should be strictly acted up to, while the Company are entitled to charge for all baggage in excess of that amount, carried by the same train.

4. As regards the rate at which extra baggage should be carried, the Government consider the same as that already in force for passengers extra baggage, carried by Passenger Train.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 20th November 1856.

COST AND EXPENDITURE OF FUEL, &c.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 502.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

From an abstract of expenditure in the Locomotive Department, during the month of August, received from your office on the 26th September, it would seem that the fuel used on your line, hitherto, has been chiefly coke, that this is charged to the Locomotive Department, at the rate of upwards of 29 Rupees the ton, coal being charged at about 14 Rupees, may I request to be informed, whether you have considered the practicability and expediency of using coal in lieu of coke—a measure that has, I believe, been adopted on some lines in England, and on the East

Indian line, with considerable advantage. I observe that the cost of fuel expended in working Goods Trains, with an average of 26 vehicles to each Train, was as high as 8½ Annas, or more than one shilling, the mile; the average of all Trains is given at 5 Annas.

I have, &c.,

(Signed) T. T. PEARLS,

Consulting Engineer for Railways.

Madras, 16th October 1856.

MADRAS RAILWAY,
MADRAS, 21ST NOVEMBER 1856.

No. 819.

TO LIEUTENANT COLONEL T. T. PEARLS, C. B.,

Consulting Engineer for Railways.

SIR,

1. I regret to state that, by an oversight, a reply to your letter, No. 502, dated the 16th October, had not been sent to you.

No. 392, 24th October.

2. I now do myself the honor to annex a copy of a letter, from the Locomotive Superintendent, giving a report upon the relative prices and advantages of using coke and coal upon this R.

3. The question has ~~formerly~~ been one of considerable interest, and ~~early means~~ has been adopted by us of obtaining information upon the matter.

4. ~~It is~~ that the Burdwan coal is not equal to the English coal, by 50 per cent, but the cost of importing it would be considerably higher than English coal; consequently, at least for the present, its use by this Company is out of the question.

5. I may observe that Steamers leaving Calcutta, even, do not take on board Burdwan coal. Some few experiments have been made by the vessels in the Indian Navy, in the Bay of Bengal, and the opinion come to, in regard to the Burdwan coal, is that, as was formed in regard to it on the trial in the General Screw Steam Navigation ships, that it is not desirable to use it.

6. In respect to the Mergui coal, opinions differ, but the mines have not been worked for the last fourteen years.

7. The Labuan coal is pronounced to be of an exceedingly good quality; but from the want of communication with that port, the cost of freight would be much greater than that of coal from England. The question resolves itself, therefore, into which is the most economical, the using of English coal or English coke, and I quite concur with Mr. Wright in opinion that the advantages are in favor of our using coke. Coal can only be brought out as a dead weight. Steam coal, which would be that required to be used without being coked, there is a demand for, and its average price in the market is about from 20 to 22 Rupees the ton. Coke is brought out as light freight, and often in vessels laden with Rails and heavy stores. It is a desirable cargo, not subject to self combustion, nor deterioration, to any great extent, from exposure; the only additional cost is the expense of coking, which, when distributed over the whole amount in connection with the freight, is comparatively small, and the advantages derived from using coke in Engines, instead of coal, is more than equivalent to the additional sum-it costs.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
LOCOMOTIVE AND CARRIAGE DEPARTMENT
ENGINEER'S OFFICE, 24TH OCT. 1856.

No. 399.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 113, of 17th October, annexing copy of a letter from the Consulting Engineer, No. 502, dated 16th October 1856.

2. The rate at which fuel is charged in our August account, referred to, is Rupees 28 for coke, and Rupees 22 for coal.

3. You are aware that the question as to the advisability of burning coal, in preference to coke, has long ago formed a subject of consideration, and that all the information we could obtain, as to the relative prices and advantages of coke and coal, both English and Indian, has been obtained and transmitted with our views to our Board of Directors, my opinion being that, under present circumstances, both in point of economy and in every other respect, coke exported from England has the advantage over coal.

4. By the data we have been able to gather, supported by the testimony of Captain Batt of the Indian Navy, and his Chief Engineer, and of the Engineers of the P. and O. Company, it is quite clear that Indian coal, even if it could be landed at Madras at the same cost as English coal, would by no means equal it in economical results; but by the reply you received from Messrs Parry and Co., it would appear that Calcutta coal, landed here, would cost us Rs. 30 per ton.

5. The rates at which we have been able to procure coke and coal are something less than Rs. 25 for coke, and Rs. 20 for Steam coal; and at these rates, judging by the results of experiments made in England with coke and coal, as fuel for ordinary Locomotives, coke has a decided advantage in point of economy, and is moreover much better adapted to our class of Engines, and in addition to these considerations, I have always found much more trouble in keeping up the Fire boxes and tubes with Engines burning coal than when burning coke.

6. With Engines specially constructed for burning coal, such as those by Mr. Beattie, Locomotive Superintendent of the South Western Railway, the case is different, but I do not think that, with Engines such as we have, that it would answer our purpose to burn coal, unless we could procure it at a much lower rate, in proportion with the cost of coke, than is at present the case.

7. I think it worthy of remark here, seeing that whatever may be used as fuel for our Engines, a large stock must always be kept on hand, that, in this country especially, coal deteriorates to a much greater extent than coke, and is much more unsafe, from its greater liability to take fire from spontaneous combustion, or other causes, of which we have had an example in our own coal yard, and lost thereby several tons of valuable coking coal.

I have, &c.,

(Signed) W. BARTON WRIGHT,

Locomotive Superintendent.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

OBSTRUCTIONS ON THE LINE OF RAIL.

MADRAS RAILWAY, 18TH APRIL 1856.

No. 224.

To MAJOR J. H. BELL,

In charge of the Office of Consulting Engineer for Railways.

SIR,

I have the honor to report that, as a Train was returning from Cotpak, on Saturday the 5th instant, when a short distance West of Avadum bridge, the Engine driver observed that a Railway chair was placed inverted on the Rail. The Engine and Train, ere it could be stopped, passed over the chair; fortunately, the driver was running slowly at the time, or the consequences might have been very serious. I have also learnt that an obstruction, a piece of fencing, was placed upon the Rail some days subsequently to the above.

2. With a view to discover the perpetrators of the act, the Superintendent of Police was so obliging as to place at my disposal a detective Talliar, whom I sent to Avadum.

16th April. 3. I beg to annex a copy of his statement, by which it appears that there are strong suspicions that the outrage was committed by one or more of four Pariahs, who had erected a pickotah within the boundary fence, and which was removed. They held out a threat that, for this act, they would be revenged by the carriages not being able to pass; but it is difficult, in all cases of this description, to obtain evidence upon which the perpetrators can be convicted.

4. I have, therefore, to request that you will have the goodness to move the Government to take such steps as may seem fit to deter parties from committing similar acts.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Wednesday the 16th April 1856.

VEERASAWMY, POLICE TALLIAR, No. 21, STATES.

By direction of the Chief Magistrate, I went to Major Jenkins, the Agent of the Railway Department, on the 10th instant, to learn the particulars of an accident which was said to have taken place on the 5th of this month near Avadum. Major Jenkins referred me to one Mr. Paton, at Mr. Bruce's office, who told me to go to Mr. Mahony at Cotpak, and he desired me to see Mr. Forshaw at Avadum, whither I arrived on Saturday the 12th current. A Railroad workman under Mr. Forshaw pointed out the rail whereat the Train was stopt, by a chair having been placed over it; this place is about 100 yards distant from a thatch bungalow occupied by the said Mr. Forshaw; on the spot I learnt from Moonean, a Maistry of the Railroad under Mr. Forshaw, that a Train had run, about 11 A. M., on Saturday the 5th instant, as far as Banaveram, about 6 miles off Avadum, and whilst returning, about 1/2 past 2 P. M. the same day, it was obstructed by a chair near Avadum, as stated above; he the said Moonean and some workmen under him stated that, before the occurrence of the impediment, one Vencatasem, who was formerly a cooly employed on the Railroad at Avadum Station, and who has been dismissed some months ago, had laid hold of the last carriage and swang for a few seconds, when Moonean checked and drove him away.

A woman named Amoordum, the mother of one Rutnam, also a workman on the Railroad employed at Banaveram, who lives in Avadum, witnessed the stoppage of the Train while she was standing close to the road, and a man named Condiah, a resident of Makaveram village, which is a mile distant from Avadum, was also standing near the road when the occurrence took place; when the Train was impeded he took to his heels; at this time two boys and a man, who were standing on the opposite side of the road, also ran away. Amoordum was interrogated by Moonean and Mr. Forshaw respecting the accident, and she denied knowing anything about it.

On the 3rd instant, one Paria Naiken fixed a pickotah on or about a large pit, which is filled with water, about 3 feet from the road, within the mark hedge, for the purpose of irrigating his lands, and the same pickotah was used by 3 Pariahs of Avadum, named Cundun Veeran and Avilator Annoo, and whilst drawing water Moonean Maistry objected to their drawing, pulled down the pickotah, and other materials thereunto belonging, by direction of Mr. Forshaw. On this an altercation took place between the Maistry Moonean and the above said 3 Pariahs, who threatened Moonean by the following words. "You and Abraham Maistry bore tales against us to your gentleman, pulled down the pickotah, and thereby prevented us from drawing water, let us see how the carriages will pass by this road; the huts which you have put up on our ground and which you have been occupying, we will pull down and deprive you of your situations," and also abused him. 2 days after this threat, namely on the 5th instant, the accident happened.

Under these circumstances, it is my opinion that either Vencatasem, the discharged cooly, who swang to the carriage, or the said Pariahs, or any one of them, must out of grudge have put the chair on the Rail.

I made every possible enquiry in the neighbouring villages regarding the above affair, but no one seems to know anything about it.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 66.

To THE MAGISTRATE OF NORTH ARCOT,

Chittoor.

SIR,

No. 224, 18th April 1856. I have the honor to forward copy of a communication, from the Agent and Manager of the Madras Railway Company, reporting that a Railway chair was, on the 5th instant, placed on the rail near Avadum Bridge, and was actually run over by the train—though, on account of the slow speed, happily without injury.

2. Annexed to Major Jenkins' letter is copy of the statement of a Police Talliar, sent from hence to enquire into the matter. I regret that so much time has elapsed without so very serious an offence having been brought to the notice of the local authorities, who alone are competent to deal with it Magisterially. In now forwarding the papers, for your information, I request that you will be so good as to take the requisite steps for bringing the offending parties to justice.

I have, &c.,

(Signed) J. H. BELL,

In charge of the office of the Consulting Engineer for Railways.

(True Copy.)

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 19th April 1856.

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MADRAS RAILWAY, 12TH JUNE, 1856.

No. 370.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

* 6th June 1856.

I have the honor to annex a copy of a letter* from the Chief Railway Engineer, communicating that large stones were found placed on the line near to the village of Muddalum, shortly previous to the passing of the Train, which conveyed the Right Honorable the Governor to Arcot, on Friday the 6th instant.

2. On the 18th of April, I did myself the honor to address to your office letter No. 224, in which I intimated that obstructions have been placed on the line in a near proximity to that now stated, and I mentioned the steps I had taken to discover the perpetrators. I also requested that the support of the civil authorities might be given towards deterring persons from committing similar acts.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th June 1856.

MADRAS RAILWAY, ENGINEER'S OFFICE,
KURRADY COOPUN, JUNE 6TH 1856.

DEAR SIR,

Shortly before the train conveying the Governor to Amoor passed the village of Muddalum, three large stones were discovered on the rails.

This is not the first time that the same attempt has been made near this village, in Cauvery-pauk Talook, but a previous representation to local authorities having been treated with indifference, I beg that the matter may be laid before Government, with a view to such steps being taken, as may, in future, secure the safety of the public. I am convinced that there is no cure save the severe punishment of the head of the village, he having it quite in his power to prevent such practice if he pleases.

Yours &c.,

(Signed) GEORGE B. BRUCE.

TO MAJOR JENKINS.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 303.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 370, of the 12th instant, reporting that large stones had been placed on the line of rail on a late occasion, shortly previous to the passing of a train, and I have to request you will state, for the information of Government, whether you offered rewards, or what were the immediate steps taken by you on the occasion for the discovery of the offenders.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th June 1856.

MADRAS RAILWAY, 18TH JULY 1856.

No. 478.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 303, dated 13th June, I have the honor to state that no fixed sum was offered, as a reward for the detection of the parties who placed obstructions on the line of Rail, near to the village of Muddalum, but it was made public that any person who could give information would be remunerated.

2. I beg to add that I have issued instructions, with reference to this subject, to heads of departments.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

No. 117.

On a letter from the Agent and Manager of the Madras Railway Company, No. 370, dated the 12th June 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent reports that large stones had been found placed on the line of rail, on a late occasion, shortly previous to the passing of a train.

From Agent, No. 224, dated 18th April 1856. 2. Major Jenkins reported a similar occurrence not long since, and Major Bell gave information at once to the Magistrate of North Arcot. The correspondence on that occasion is submitted herewith.

3. This is a serious matter; but it seems to me that the Agent and Chief Engineer are disposed to look too much to the Government to assist them in the difficulty. They have Europeans of various grades and denominations along the line, they have a force of platelayers permanently employed, and will I presume have their own police; and there are the local Magistrates and district police to whom, instead of to Government, information of such occurrences should be conveyed without a moments delay.

4. It will be well perhaps to call the attention of the Magistrate of North Arcot to this subject, and to desire him to use every effort to make the Act No. XVIII, of 1854, and, especially clause 25, generally known, and thoroughly understood among the people. At the same time, I think the Agent should be reminded, that while the local police should in all such cases be called in to assist in the discovery and apprehension of offenders, it is to the Railway authorities, and to the servants under them, that the Government and the public must necessarily look for the adoption of the most effectual preventive measures; not only do such measures fall within

the peculiar province of the Railway Company itself, but even, as regards detection and apprehension of offenders, a few policemen of their own, well selected, and under efficient management, would relieve the Railway officials in a great degree from their dependence on the village police, and be in a better position to act on such occasions as these with promptitude and success.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 13th June 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 188.

Extract from the Minutes of Consultation, dated 19th June 1856.

Read the following observations of the Consulting Engineer for Railways, on a letter from the Agent and Manager.

(Here enter 13th June 1856.)

The Right Honorable the Governor in Council resolves to call upon the Magistrate of North Arcot, to report immediately what measures were taken by him, on receipt of Major Bell's letter of 19th April last, for the detection of the parties who, on the 5th idem, placed a Railway chair on the line near Avadum Bridge, and what has been the result.

2. The Magistrates of Chingleput and North Arcot will also state whether they have adopted any steps, by means of the District Police, and the Police Officers of the villages, on either side of the line, to prevent such nefarious proceedings as those now represented.

3. The Magistrates will also cause the provisions of Section XXV. Act XVIII 1854, to be fully explained to the people of the villages, through or near which the line passes, and will have translations of it affixed to the principal places of resort in each village. They will also hold the village authorities strictly accountable for the detection of parties who may have attempted to obstruct the passage of a train, within their limits.

4. The Right Honorable the Governor in Council, however, agrees with the Consulting Engineer, that the Railway Agent and Chief Engineer must look to their own establishments for the prevention of such outrages, or detection of those concerned in them. On all such occasions it will be their duty to communicate at once with the local officers, from whom they will receive every assistance. But it is not possible for the Police of the country, though more numerous and better organized than they are, by their efforts alone to repress such attempts. As Colonel Pears has truly remarked, it is to the Railway authorities and to the servants under them, that the public must necessarily look for the adoption of the most effectual preventive measures; measures which it falls within the peculiar province of the Railway Company to carry out.

(True Copy.)

(Signed) T. PYCROFT,
Chief Secretary.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 214.

Extract from the Minutes of Consultation, dated 5th July 1856.

Read the following letter.

FROM C. WHITTINGHAM, Esq.,

Magistrate of North Arcot.

TO T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

I have the honor to acknowledge receipt of Extract Minutes of Consultation, dated 19th June 1856, No. 188, calling upon me to report immediately what measures were taken by me on

receipt of Major Bell's letter of the 19th April last, for the detection of the parties who, on the 5th idem, placed a Railway chair on the line near Avadum Bridge, and what has been the result.

2. Immediately on the receipt of Major Bell's letter, which gave the first intimation of the offence having been committed, orders were issued to the head of Police to institute a full enquiry into the matter, and to report the result of his investigation. The head of Police reported, on the 5th of May, that the enquiry had failed to bring home the offence to any one. The depositions which accompanied this report were examined by my assistant, Mr. Elliot, who concurred in the opinion of the head of Police.

3. Major Bell forwarded with his letter copy of the deposition given by the Talliar, who had been sent by the Chief Magistrate, Mr. E. F. Elliot, to endeavour to trace out the offenders—copy of this document is submitted. In this account it is stated that, before the occurrence, a discharged cooly had laid hold of the last carriage, and swung himself till driven away by the railroad Maistry. This circumstance does not appear to have any connection with the fact under investigation, viz. the placing the chair on the rail. It is there stated that, at the time the train came in contact with the chair, two men one woman, and two boys were standing near the road, but no attempt is made to connect them in any way with placing the obstruction on the rail. The suspicious circumstance of the two men and the boys running away, when the train came in contact with the obstacle, might easily be referred to astonishment or terror, at seeing the train overcome with such facility an obstacle which they would have supposed calculated to impede its further progress.

The deposition proceeds to state circumstances that certainly threw some suspicion on the parties using the pickottah. They do not appear, however, to have been the parties standing in the neighbourhood of the road as above mentioned. One of these parties is named *Candiah*; the persons using the pickottah are named *Periya Naken*, *Cundun Veeran* and *Anneo*. There is no attempt made to identify either of these four persons with the other man, not named, who stood at the time near the road.

The expressions, however, attributed to the three last named persons, in their dispute with the railroad Maistry, certainly threw great suspicion on them, and the attention of the head of Police was called to this circumstance. No proof could, however, be produced against these persons, and they were accordingly discharged.

4. I regret that I feel called upon, in connection with this subject, to bring to the notice of Government the additional difficulty thrown in the way of the Magistrate officers of this district, by the neglect and delay evinced by the Railway officers in instituting and conducting prosecutions for offences connected with the Railway.

In the present instance, information of the occurrence did not reach me till nearly three weeks after the occurrence; and then not through the usual channel of the local police, but through the Consulting Engineer, who, in making the communication, expressed a regret that so much time had elapsed, without so very serious an offence having been brought to the notice of the local authorities.

5. On the 16th of June 1855 (more than a year ago), in reply to a communication from Mr. G. B. Bruce, Chief Engineer of the Railway Company, I suggested to him the advisability of his instructing his subordinates that they should by vakcel, if personal attendance were not convenient, at once complain to the Tahsildars, who are the heads of Police in their respective talooks, when any offence connected with the railroad was committed. This suggestion does not appear to have been attended to, it was certainly not acted upon in the instance now under consideration.

6. The occasion of Mr. Bruce's addressing me, as just noticed, was the fact that stones had been placed on the rail, in the neighbourhood of Massoor. The offence was committed on the 28th May 1855, but I received no intimation of it till the 7th June, and then through Mr. Bruce. I directed the Tahsildar to use the utmost exertions to detect the offenders, and I took the opportunity of its being the time of Revenue settlement to send for the principal inhabitants of Massoor, and to explain to them, before the assembled people, the penal consequences, as laid down by Act XVIII of 1854, of such acts as had been done in their neighbourhood. In this

instance the Railroad had obstructed one of the frequented roads from the village, and it therefore seemed probable that most of the villagers were aiders and abettors of the offence. I caused also translations of the penal clause of the Act to be forwarded to the Tahsildars, through whose Talooks the Railway runs, directing them to proclaim them through the villages by beat of tom-tom, and instructing them to use the utmost vigilance in preventing similar offences, and, when committed, in securing the offenders.

As these measures were taken twelve months ago, the penal consequences of placing obstructions on the rail must be well known to the people.

In obedience, however, to the orders of Government, I have carried out the instructions contained in para. 3 of the Extract Minutes of Consultation.

7. The head Assistant, Mr. Pochin, resides at Arcot, and has Magisterial charge of the Cauverypank, Trivellum and Sautghur Talooks, through which the Railroad passes, and I have considered it advisable to place also under his charge that part of the Sholingur Talook, through which the Railroad passes on leaving the Chingleput district. The Sub-Collector, Mr. Sullivan, resides at Vellore and has charge of the Vellore Talook, through which the road passes before it enters the Salem district. All Police matters connected with the Railroad are thus under the Superintendence of these two officers, whose vicinity to the Railway must be attended with the greatest advantage, in the disposal of offences connected therewith.

7. No arrangements, however, in the power of the Magistrate, can be of any benefit in preventing and detecting these offences, if the same want of vigilance and the same neglect and delay in instituting prosecutions exist on the part of the Railway officials that have hitherto marked their proceedings in these matters. As a further illustration of this apparently habitual practice of neglecting to inform the local authorities of the occurrence of these offences, I beg to observe that neither the Acting additional joint Magistrate, Mr. Banbury, who has charge of the Sholingur Talook, nor myself received any intimation of the fact of large stones having been found placed on the line in the Sholingur Talook, shortly previous to the passing of the train which conveyed the Right Honorable the Governor to Arcot, until the circumstance was communicated to me in the Extract Minutes of Consultation, under reply, that is more than a fortnight after its occurrence.

Mr. Bruce, indeed, in his letter to Major Jenkins of the 18th April 1856, adverts to a previous representation having been treated with indifference, apparently to justify the course adopted of neglecting to inform the local authorities: but he does not state any particulars of the case referred to, and does not appear to be aware that the two occurrences took place in different Talooks; perhaps the condemnation of the local authorities is intended to be general.

I have, &c.

(Signed) C. WHITTINGHAM,

Magistrate.

North Arcot, Magistrate's office, }
Chittoor, 26th June 1856. }

ORDER.—Ordered to be communicated to the Consulting Engineer for Railways, in reference to Extract Minutes Consultation, 19th June 1856.

Adverting to the remarks of the Magistrate in para. 4, and the following paras., Colonel Pears will impress upon the Railway authorities the necessity of making immediate representation to the local Native Police, and to the European officer in charge of the Talook, of any attempts such as those now in question.

(True Extract and Copy.)

(Signed) T. PYCROFT,

Chief Secretary.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

It having come to my notice that an attempt, fortunately discovered in time to be frustrated, was made some 15 days since, to cause an accident on the Railway, to the Passenger train, by the removal of a pair of fishing plates and the displacement of a rail, I have the honor, by order of Government, to request information as to what steps were taken to discover the perpetrator of this act, and with what success these have been attended.

2. I need scarcely point out that, in all cases of so serious a nature, Government expect to be kept informed of all the circumstances attending them, and I am desired therefore to solicit your particular attention to this course in future, should the necessity for the same unhappily recur.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 22nd November 1856.

MADRAS RAILWAY,
MADRAS, 12TH DECEMBER 1856.

No. 907.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

1. With reference to your letter, No. 637, dated the 22nd ultimo, I have the honor to state, that the circumstance of Fishing Plates and Bolts having been taken off the Rail and stolen was communicated to me by the Chief Engineer, but it was not mentioned by him that the Rail had been displaced so as to endanger the train.

From Acting Chief Engineer, No. 305, 10th December 1856.
" Resident Engineer, Mr. McMaster, to Acting Chief Engineer, No. 470, 15th November 1856.
" Do. to Collector of North Arcot, No. 471. do.
" Do. to Acting Chief Engineer, No. 520, 8th Dec. 1856.
" Do. to Do. " 522, 9th do.

2. I beg to annex copies of correspondence as noted in the margin.

3. I learn therefrom that stones, of about the size of a man's hand, are placed

upon the Rail by persons, but whether induced to do so from an evil disposition, or thoughtlessness, is not clear; under any circumstances, it is evident that the practice must be put a stop to. The Resident Engineer has made every enquiry, and offered rewards of Rupees 20 in each case, but without discovering the perpetrators. He has also been in communication with the Civil authorities upon the matter, but there seem to be difficulties in bringing the case home to any particular individual; and the Native Village Police, from not comprehending the enormity of the Act, do not render that assistance which might be expected from them.

4. I have therefore to request, that you will have the goodness to move the Government to be pleased to cause the danger, likely to be incurred by the evil practice, to be made known by the civil authorities along the line of Railway, and that the village Police may be required to aid the Railway Servants in the prevention of such crimes, and in the detection of culprits.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 16th December 1856.

MADRAS RAILWAY, ENGINEER'S OFFICE,
MADRAS, 10TH DECEMBER 1856.

No. 305.

To MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

With reference to your letter, No. 901, dated 25th ultimo, I enclose an original letter I have received from the Resident Engineer, No. 520, which I think, will give you all the information you require.

2. I also enclose another letter, from the Resident Engineer, No. 470, with copy of his letter to the Magistrate, No. 471, in regard to another attempt to throw the train off the rails; you will observe that the Resident Engineer has not only called on the Magistrate to detect the culprits in the present instance, but ask him to use his influence to deter others from making like attempts.

3. You will observe from another letter from the Resident Engineer, No. 522, that the Magistrate had handed over the case to his Assistant, Mr. Pochin, who states that he can do nothing in the matter, unless some one in particular is suspected and apprehended.

4. If Mr. Pochin's views of this matter are correct, private detective Officers will have to be provided.

I have, &c.,

(Signed) ALEX. BEATTIE,

Acting Chief Engineer.

MADRAS RAILWAY, MADRAS DIVISION,
RESIDENT ENGINEER'S OFFICE,
ARCOT, DEC. 8TH 1856.

No. 520.

MY DEAR SIR,

In returning the Agent's letter, No. 901, to you, enclosing copy of letter from Colonel Pears, asking for further information on the subject of the fishing plates taken off the line near Tinnanore, I beg to state that platelayer Charles reports that one pair of fishing plates and their bolts were taken away altogether; the pair on the opposite joint were taken off, but left on the ground; and the rails moved so as to break the line by about an inch.

I beg further to state that, immediately on hearing of it, I sent down a clever native from Madras to make all the secret enquires he could, and I offered a reward of Rupees (20) twenty for such information as would lead to the detection of the offender, and gave notice of the same by tom-tom throughout all the villages in the vicinity of the place where it occurred. I regret to say, all these steps were unsuccessful. The native, who was making enquiry about the fishing plates and bolts, succeeded in discovering a quantity of wood belonging to the Railway Company, which had been sent up for the roofs of platelayers' huts. Several persons have been sentenced to imprisonment by Mr. Shrubrick for stealing this wood.

(Signed) BRYCE MacMASTER.

To ALEXANDER BEATTIE, Esq.,

Acting Chief Engineer.

ARCOT, NOVEMBER 15TH 1856.

No. 470.

MY DEAR SIR,

On the 11th instant, being on the Engine of the 3.30 P.M. Passenger train from Madras, I saw five stones on the rails. One on the 37th mile in the Chinnamapett cutting, and four near the 42nd mile, past at intervals of about ten feet. The enclosed copy of a letter I have written on the subject, to the Collector of North Arcot, will make you acquainted with the details of the case and the steps I have taken in reference to it.

(Signed) BRYCE MacMASTER.

To ALEXANDER BEATTIE, Esq.,

Acting Chief Engineer, Madras Railway.

MADRAS RAILWAY, MADRAS DIVISION,
RESIDENT ENGINEER'S OFFICE,
ARCOT, 15TH NOV. 1856.

No. 471.

To C. WHITTINGHAM, Esq.,

Collector of North Arcot.

Sir,

I have the honor to bring to your notice a circumstance which, although fortunately it did not affect the safety of a passenger Train upon this Railway, yet is now of such frequent occurrence, and shows such a determined spirit of malice, or mischief, which may one day result in the most alarming consequences, that, after having done all I can myself to discover the culprit without success, I am obliged to report the matter to you, and to beg that you will aid me in the enquiry for the double reason of discovering the culprit, if possible, and by the notice taken of the affair, shewing the natives how really serious we consider it. I allude to the trick of putting stones on the rails. I was on the Engine of the Passenger Train which left Madras at 3.30 P.M. on the 11th instant. Shortly after we left Chinnamapet Station, there was a stone on the rail about the size of a man's fist and over this the Engine passed. Again, close to the 42nd mile post on the Railway, and about one mile East of Arconum, there were four stones placed upon the right hand rail, at intervals of about 10 feet, and each of the size mentioned above. These were all, I believe, knocked off by the Life Guard, in front of the leading wheel, or, possibly, passed over although not felt on the Engine where we stood. The attempt however remains the same. On the following day, Wednesday the 12th instant, I went to the spot and made all the enquiries I could, taking the names of all the people who were near the place on the previous evening, which I learnt from two men, who admitted they had been there and had seen the others. The two men, I allude to, are Mootah and Cunden, both of Arconum, who were working in a field close by on the South side of the line. There were two men of the Dhole caste, named Cavah and Cunden, working a pecottah on the South side of the line, about 10 chains West of the spot. There was also a boy named Narrainsawmy, son of one Vencatahroyaloo, of Arconum, in charge of a herd of bullocks which were feeding near the place. The bullocks belong to Nursuppa Naick of Arconum. There was a man working at a Bridge, in a tank bund North of the line and opposite the place, and on the North side is a watchman but belonging to Yencoopah Naick of Arconum. Besides these, and perhaps more than all likely to be witnesses, were six men who were cutting grass on the slopes not far from the spot Westward. These men are not employed by the Railway Company, but are allowed to cut the long coarse grass, in order that the Sleepers may be kept clear. Their names are Poolcamangalum Vencatareddy, Arconum Yatharangoor, Arconum Annanda Naick, Arconum Mootahloopandarum, Coopum Vencutupa and Coopum Pariah Chengum. From enquiries that have been made by my people, they are led to suspect that

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FINANCIAL (RAILWAY) DEPARTMENT.

No. 479.

Extract from the Minutes of Consultation, dated 30th December 1856.

Read the following letter from the Consulting Engineer.

(Here enter 16th December 1856.)

Resolved that copy of the observations of the Consulting Engineer be furnished to the Magistrate of North Arcot, and that he be requested to state what steps he took, in consequence of the representation made to him, under date the 15th ultimo, by the Resident Engineer. Mr. Whittingham will also call upon his Head Assistant, Mr. Pochin, to explain the expression said to have been used by him and referred to in para. 5.

2. The Government agree with the Consulting Engineer, that it is objectionable to allow men, not in the employment of the Railway Company, to cut grass on the slopes of the line.

3. Colonel Pears will again pointedly call the attention of the Agent and Manager to the orders of Government, 19th June and 5th July last, and particularly to the great importance of intelligence, of any attempt to injure or obstruct the line, being at once given by the Railway authorities on the spot, both to the local Native Police and to the nearest European Magistrate.

4. The Agent may be requested to give his opinion on the suggestion of the Consulting Engineer, for constructing a fence-wall along the line of rails in the vicinity of Native villages; and Colonel Pears will call upon him for a detailed report of the arrangements now made by the Company, and number of men employed for watching the line, and for the prevention and detection of such attempts as those now under report.

(True Extract.)

(Signed) T. PYCROFT.

Chief Secretary.

ACCIDENTS.

MADRAS RAILWAY, 29TH JULY 1856.

No. 502.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to the 42nd article of Act 18, 1854, I have the honor to state that a fatal accident occurred yesterday at the Terminal Station, Madras, to a cooly engaged with others in shunting the waggons, he having been unfortunately caught and crushed between the buffers of a waggon; the particulars of this accident are explained in a letter from the Traffic Manager, copy of which I beg to annex.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Salem, 4th August 1856.

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MADRAS RAILWAY COMPANY,
TRAFFIC MANAGER'S OFFICE,
29TH JULY 1856.

No. 125.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I regret to inform you that Venarapettah Sassien, a cooly employed at the Madras Terminus Station, whilst engaged with others in shunting two waggons, on the morning of the 28th instant, was unfortunately caught between the buffers of the waggons and crushed. It appears that he fell, and his legs were hurt by the wheels of one of the waggons, and that he received a fracture of the skull in falling. He was taken to the Monegar Choultry, where he died last night from the injuries received. The cause of death was either the fracture of the skull, or the pressure of his back and chest between the buffers of the waggons.

2. The Coroner's inquest was attended by the station master Mr. Morse, and the witnesses. It was shown that the men had been cautioned against passing between the buffers of waggons when in motion, and that every precaution had been used to prevent such accidents. A verdict of accidental death was returned. A fine was imposed, upon the buffers of the waggons, of Rupees 2, which has been paid.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
MADRAS, 10TH OCT. 1856.

No. 692.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

1. With reference to Section 42 of Act 18 of 1854, I have the honor to acquaint you, for the information of the Government, that an accident occurred on the line of Railway, at the station of Sholinghur, to the 3.30 P.M. Train, proceeding to Arcot on the evening of the 4th instant. I annex a copy of a report of the Traffic Manager (No. 336 of this date) who proceeded immediately to the station to investigate into the cause of the accident.

2. It appears that some empty goods waggons had been left on the siding at that station; that they became moved and came so close to the main line, that, when the Train proceeded, the Engine came in contact with the waggons, and threw them off the line, doing at the same time some damage to the 1st and 2nd class carriages and the Guards "Van," but no injury to any of the Passengers. I am informed that it was so dusk at the time, that the Engine driver could not perceive that the waggons were in too close a proximity to the line. It is the opinion of the Traffic Manager that sufficient and due precautions were not taken by the Station Master and pointsmen. Mr. Fletcher has explained, personally, to every servant on the line, how the accident occurred, and how it might have been prevented.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 16th October 1856.

the stones were put on the rail by the son of one of these six men, but as yet there is no positive proof. I have offered a reward of twenty Rupees for information on the subject, but without your assistance I fear we can do but little. I have not brought the matter to the notice of the Tahsildar, for from experience I believe, and I speak advisedly when I say so, that nothing would come of it. He would see no more harm in putting a stone before an Engine going 30 miles an hour than before a bandy going 2, and provided there was no positive proof against some particular individual, the case would be dismissed, without anything being done to deter others from a similar offence. By appealing directly to you, Sir, I hope that, whether or not the culprit be detected, such notice will be taken of the matter as will prove to all, who will hear of it, the serious light in which we view it. I know not whether it was done from malice or mischief. Similar cases have occurred upon this Railway, under circumstances from which sometimes one and sometimes the other might be inferred, but from all I have seen, I am inclined to attribute it to mischief, and I think that in the majority of cases it is done by boys. The Engine drivers say that at the Village of Moosoor, on the 39th mile of the Railway, there are very often stones on the rails and unless decided steps are taken at once for its prevention, no one can tell where it will end, or to what steps they will next proceed, when it is found that stones of the size now generally put on the rail are of little or no effect. My watchman cannot be everywhere at once, and advantage is taken the moments their backs are turned.

Having brought the matter thus earnestly to your attention, I beg to leave it in your hands, confident all will be done which its serious nature calls for.

I have, &c.,

(Signed) BRYCE MACMASTER,

Resident Engineer, Madras Railway.

(A True Copy.)

(Signed) BRYCE MACMASTER.

MADRAS, 9TH DECEMBER 1856.

No. 522.

MY DEAR SIR,

In reference to the subject of my letter of the 15th ultimo, reporting four stones having been placed on the Rails, and the steps I have taken in the matter, I beg to inform you that I have a day or two ago seen Mr. Pochin, the head Assistant Collector of North Arcot, to whom my letter had been sent for investigation by Mr. Whittingham. Mr. Pochin told me that, in cases like the present, they could do nothing unless we brought charges against some one in particular, that it was the duty of the Railway Company to keep watchmen to detect persons in such acts, you will see in my letter to the Collector that I forwarded the names for number of persons who were near the spot when the case occurred.

(Signed) BRYCE MACMASTER.

To ALEXANDER BEATTIE, Esq.,

Acting Chief Engineer.

(True Copies.)

T. A. JENKINS,

Agent and Manager.

No. 265.

On a letter from the Agent and Manager of the Madras Railway Company, No. 907, dated 12th December 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The information given in the accompanying correspondence was called for, in consequence of its having come to my notice, that the fishing plates had been removed in one place from the rails, and one of the rails displaced—a proceeding that might have been the cause of a very serious accident.

2. The measures, which should be adopted on such occasions, do not seem to be quite understood by the Railway Officers.

3. The Resident Engineer states, in his letter to the Collector of North Arcot, "after having done all I can myself to discover the culprit without success, I am obliged to report the matter to you." It is not to be expected that the Engineer, with his time fully occupied in his own business, could do much in such a matter; and the report, in my opinion, should be made at once both to the nearest native Police Officer and to the Magistrate.

4. At the same time the Railway authorities should do their best to discover the offenders.

5. I should think the Assistant Magistrate must have been misunderstood when it is stated, that on hearing of the occurrence he stated that he could do nothing, until some one in particular "is suspected and apprehended."

6. The order of Government, No. 188 of the 19th June 1856, was duly communicated to the Agent and Manager, but that gentleman does not yet appear to be fully alive to the responsibility that rests upon himself in this matter.

7. It has often occurred to me, that it might be expedient to construct a fence wall for a certain distance along the line of rails, wherever native villages stand within a certain distance of the line.

8. These things are generally done near villages, in situations where the perpetrator easily escapes among the huts. A high wall, or other substantial fence not easily jumped over, would render these mischievous experiments somewhat hazardous.

9. In directing the attention of the Agent to the order above quoted, he might be requested to give his opinion upon the matter.

10. I very much doubt the propriety of giving men, not in the employment of the Railway Company, permission to come on to the line to cut grass. They are trespassers though sent by permission.

11. My own impression is, that the line is not sufficiently watched. I have frequently observed, on leaving Arcot early in the morning by Train, not a single servant of the Company, gatesmen, police, or platelayers, was on the first 10 miles.

12. I have considered it sufficient to mention it, in conversation with the Traffic Manager, but I doubt still if this point is sufficiently attended to.

13. Whatever may be the practice in England, the very circumstance now, not for the first time reported, tends to show that the line, at least for the present, requires more than ordinary watching; and the Agent should keep an eye upon these particular localities, as the village of Moshoor, at which these attempts at mischief are most frequent.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 16th December 1856.

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FINANCIAL (RAILWAY) DEPARTMENT.

No. 479.

Extract from the Minutes of Consultation, dated 30th December 1856.

Read the following letter from the Consulting Engineer.

(Here enter 16th December 1856.)

Resolved that copy of the observations of the Consulting Engineer be furnished to the Magistrate of North Arcot, and that he be requested to state what steps he took, in consequence of the representation made to him, under date the 15th ultimo, by the Resident Engineer. Mr. Whittingham will also call upon his Head Assistant, Mr. Pochin, to explain the expression said to have been used by him and referred to in para. 5.

2. The Government agree with the Consulting Engineer, that it is objectionable to allow men, not in the employment of the Railway Company, to cut grass on the slopes of the line.

3. Colonel Pears will again pointedly call the attention of the Agent and Manager to the orders of Government, 19th June and 5th July last, and particularly to the great importance of intelligence, of any attempt to injure or obstruct the line, being at once given by the Railway authorities on the spot, both to the local Native Police and to the nearest European Magistrate.

4. The Agent may be requested to give his opinion on the suggestion of the Consulting Engineer, for constructing a fence-wall along the line of rails in the vicinity of Native villages; and Colonel Pears will call upon him for a detailed report of the arrangements now made by the Company, and number of men employed for watching the line, and for the prevention and detection of such attempts as those now under report.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

ACCIDENTS.

MADRAS RAILWAY, 29TH JULY 1856.

No. 502.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to the 42nd article of Act 18, 1854, I have the honor to state that a fatal accident occurred yesterday at the Terminal Station, Madras, to a cooly engaged with others in shunting the waggons, he having been unfortunately caught and crushed between the buffers of a waggon; the particulars of this accident are explained in a letter from the Traffic Manager, copy of which I beg to annex.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Salem, 4th August 1856.

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MADRAS RAILWAY COMPANY,
TRAFFIC MANAGER'S OFFICE,
29TH JULY 1856.

No. 125.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I regret to inform you that Venarapettah Sassien, a cooly employed at the Madras Terminus Station, whilst engaged with others in shunting two waggons, on the morning of the 28th instant, was unfortunately caught between the buffers of the waggons and crushed. It appears that he fell, and his legs were hurt by the wheels of one of the waggons, and that he received a fracture of the skull in falling. He was taken to the Monegar Choultry, where he died last night from the injuries received. The cause of death was either the fracture of the skull, or the pressure of his back and chest between the buffers of the waggons.

2. The Coroner's inquest was attended by the station master Mr. Morse, and the witnesses. It was shown that the men had been cautioned against passing between the buffers of waggons when in motion, and that every precaution had been used to prevent such accidents. A verdict of accidental death was returned. A fine was imposed, upon the buffers of the waggons, of Rupees 2, which has been paid.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

MADRAS RAILWAY,
MADRAS, 10TH OCT. 1856.

No. 692.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer.

SIR,

1. With reference to Section 42 of Act 18 of 1854, I have the honor to acquaint you, for the information of the Government, that an accident occurred on the line of Railway, at the station of Sholinghur, to the 3.30 P.M. Train, proceeding to Arcot on the evening of the 4th instant. I annex a copy of a report of the Traffic Manager (No. 336 of this date) who proceeded immediately to the station to investigate into the cause of the accident.

2. It appears that some empty goods waggons had been left on the siding at that station; that they became moved and came so close to the main line, that, when the Train proceeded, the Engine came in contact with the waggons, and threw them off the line, doing at the same time some damage to the 1st and 2nd class carriages and the Guards "Van," but no injury to any of the Passengers. I am informed that it was so dusk at the time, that the Engine driver could not perceive that the waggons were in too close a proximity to the line. It is the opinion of the Traffic Manager that sufficient and due precautions were not taken by the Station Master and pointsmen. Mr. Fletcher has explained, personally, to every servant on the line, how the accident occurred, and how it might have been prevented.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 16th October 1856.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
OCTOBER 10TH, 1856.

No. 336.

To MAJOR T. A. JENKINS,

Agent and Manager.

Sir,

Referring to my letter, No. 372, of the 5th Instant, I have the honor to report to you that I proceeded to Sholinghur Station on the 6th instant, for the purpose of inquiring into the circumstances connected with the accident to the 3.30 P. M. Train to Arcot on the 4th instant.

It appears that the Train arrived at Sholinghur 15 Minutes after its proper time, and was dispatched as usual; but after proceeding about 100 yards from the station, the Train came in contact with the first of three open Goods waggons, left upon the Through-siding, and were so close to the Main Line, that nothing could pass without coming into collision with them.

The waggons had been left at Sholinghur by the Goods Train West, due at that station at 2.35 P. M., to be loaded with Goods then waiting at that station.

The Station Master informed me that the Waggons were placed in the Siding by the Goods Train Engine, and were securely scotched by the Scotch-block being turned over the Rail; and he accounts for the waggons being in the position in which they were, when the Train came into collision with them, by supposing that as Mr. Collins, the Inspector of Permanent way, had taken his travelling Truck from the siding, that his coolies must have left the Scotch-block open, and that the waggons were moved by the wind, which was blowing in that direction. He positively states that he saw that the waggons were clear of the main line at 6 o'clock P. M., and again immediately previous to the arrival of the Train; and he can only suppose that they were propelled by the wind, which however he says was not very strong. He says that he did not take the precaution of seeing that the Scotch-blocks were across the line, although he is positive that the waggons were in both instances within the Scotch-block.

I am informed that when the Train arrived at Sholinghur it was dark. I have felt it my duty to suspend the station Master, Mr. Seymour, as well as the Pointsman and Peon, and they now wait farther instructions. I would beg to recommend that they be forthwith discharged from the Company's Service, and that each should forfeit the amount of pay due to them, viz., one month and 4 days. I am of opinion that the station Master could not have seen the waggons clear of the main line, either at 6 P. M., or immediately before the arrival of the Passenger Train, and I think that no care was taken by any of the three men now suspended; but considering that they are all new to the duties incumbent upon Railway Servants, and that the accident is owing to a want of experience as well as of care, I think it will be advisable not to prosecute in this case, as I think that the publicity already given to this case, and the warning to the station Masters on the line, will prevent a recurrence of any similar accident.

I have &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True copy.)

T. A. JENKINS,

Agent and Manager.

No. 201.

On letters from the Agent and Manager of the Madras Railway Company, No. 692, dated the 10th October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent reports an accident which occurred on the 4th instant, near the Sholinghur Station. The train, it appears, came in contact with some waggons standing on the siding and threw them off the line, and caused some damage to certain vehicles, but happily no injury to passengers.

2. The Traffic Manager shows that there was great carelessness, and has recommended that the Station Master, a pointsman, and peon, be discharged;—a recommendation which the Agent would do well to adopt.

3. The Scotch block, alluded to, is a massive piece of wood so fixed near the rail of the siding, that it can be laid across it when required; and so fixed as to prevent the vehicles standing on the siding, from moving too near the main line.

4. These Scotch blocks should, in all cases, have padlocks, be kept locked, and opened and closed under the immediate orders of the Station Master.

5. The excuse given by the Station Master, that one of the Engineer Department had removed the travelling truck from the siding, and "must have left the scotch block open," would indicate a want of due regularity and supervision on the part of the Station Master.

6. The train was 15 minutes behind time, the cause of which is not explained. This circumstance, however, merits notice; as, however blameworthy the Station Master undoubtedly is, it must not be forgotten that safety in Railway operations depends, much, upon punctuality in the travelling of trains.

7. This accident took place on the 4th, and was not reported till the 10th. It should have been reported immediately, in order that the Government Officer might have the opportunity of making enquiries at once, if considered necessary.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 16th October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 355.

Extract from the Minutes of Consultation, dated 22nd October 1856.

Read the following observations of the Consulting Engineer for Railways, on a letter from the Agent and Manager of the Railway Company.

(Dated 16th October 1856, No. 210.)

It is clear that there was great carelessness on the part of the three men suspended by the Traffic Manager, on account of the accident referred to—and the Government expect to hear that they have been dismissed by the Railway Agent.

2. The Government desire to be informed why the Train was behind time—and why the accident, which occurred on the 4th, was not reported till the 10th instant.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

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MADRAS RAILWAY,
MADRAS, 6TH NOVEMBER 1856.

No. 771.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

SIR,
Consulting Engineer for Railways.

1. In compliance with the instructions conveyed in order of Government, No. 355, dated the 22nd ultimo, I have the honor to state, that having enquired fully into the cause of the accident at Sholinghur on the 4th ultimo, I felt satisfied that proper precaution had not been taken by the Station Master and the other two men, to obviate the possibility of accident. I therefore deemed it right to discharge them from the employ of this Company.

2. In respect to the delay in reporting the accident to the Government, I beg to state that there was no greater loss of time than was necessary for the due investigation of the matter by the Traffic Manager on the spot, and subsequently by myself.

3. I annex a copy of a letter, No. 345, dated 4th instant, from the Traffic Manager, explaining the cause of the Train being 15 Minutes late on the occasion adverted to.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 11th November 1856.

MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
4TH NOVEMBER 1856.

No. 345.

TO MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway.

SIR,

I have had the honor to receive your letter, No. 121, of the 29th ultimo, enclosing Extract from Minutes of Consultation, No. 355, dated 22nd ultimo, referring to the accident at the Sholinghur Station on the 4th ultimo.

2. I beg, in reply, to observe that the three men suspended were dismissed the service of this Company, with loss of the amount of pay due to each; and that the cause of the Train being 15 minutes behind time, at the Sholinghur Station, was owing to a detention at Madras of 5 minutes—attributed to attaching additional carriages to the Train—8 minutes delay at the Trivellore Station, caused by the number of passengers alighting there, and detaching 3 carriages, and taking water—and 2 minutes delayed at Chinuamapet Station, taking water.

3. With reference to the accident, having occurred on the 4th ultimo, not being reported until the 10th ultimo, I beg to observe that the 4th was on Saturday, and that on the 6th I proceeded to Sholinghur to investigate, and did not return until late upon the 8th ultimo; and not being aware that haste was absolutely necessary in reporting officially to you, having verbally explained the matter, and having a pressure of other business, I was not able to report until the 10th ultimo.

I have, &c.,

(Signed) H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

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MODE OF WORKING THE POINTS.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 289.

Extract from the Minutes of Consultation, dated 15th September 1856.

Read the following.

PUBLIC WORKS DEPARTMENT.
(RAILWAY BRANCH.)

No. 574 of 1856.

TO THE SECRETARY TO GOVERNMENT,

Fort Saint George.

SIR,

A Railway carriage was lately thrown off the line at a Railway Station, through the carelessness of a Porter in holding the lever of the points, upon the Train starting from it.

2nd. The Acting Superintending Engineer, in the Railway Department, in reporting the above accident, has stated that, on some of the lines of Railway in England, quadrants with bolts to hold back the lever handle have been introduced; and he thinks that "in this country the bolt might perhaps be safer than a Native, who, if there is any hitch, may not have strength sufficient, and if anything goes wrong may be apt to get confused and let go."

3rd. The Right Honorable the Governor in Council has directed me to request, that you will have the goodness, with the permission of the Right Honorable the Governor of Fort Saint George in Council, to favor this Government with information as to which of the systems, above alluded to, is followed in Madras in the management of switching points.

I have, &c.,

(Signed) W. HART,

Secretary to Government.

Bombay Castle, 29th August 1856.

Ordered to be forwarded to the Consulting Engineer, who will furnish the information required by the Government of Bombay.

(Signed) T. PYCROFT,

Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 456.

TO MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

In forwarding copy of an order of Government, as per margin, I have the honor to request you will favor me with the information called for by the Bombay Government, as to the mode of managing the lever connected with the points, which may have been hitherto in use, or which, from the experience you have had of the behaviour of native servants, may be considered best to be introduced on your line of Railway.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 19th September 1856.

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MADRAS RAILWAY,
MADRAS, 5TH NOVEMBER 1856.

No. 770.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to your letter, No. 456, dated 19th September 1856, and the order of Government, No. 289, dated the 15th idem, I have the honor to state that I referred the question, as to the mode of managing the lever attached to "Points" on this line, to the Chief Engineer, and the Traffic Manager; copies of their letters I beg to annex, affording the information desired.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the information of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th November 1856.

MADRAS RAILWAY CHIEF ENGINEER'S OFFICE,
MADRAS, 15TH OCTOBER 1856.

No. 204.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 755, forwarding the Minute of Consultation of the Bombay Government, desiring information as to the plan pursued in Madras regarding "Points."

2. We have not adopted the plan of placing a quadrant, with a pin to hold back the handle and keep the points open during the passage of a train without the continued exertion of the pointsman, for the following reasons.

3. Points to be safe, especially on a single line, must be self-acting, always leaving the main line open, unless when specially altered for the time being by the Pointsman, for the shunting of any carriage or train. If you adopt the plan of a quadrant and pin to fix the switches, they cease to be self-acting; the pin may, by mistake or neglect, be left in; and a train approaching facing points so fixed, instead of finding the main line open and its passage clear, would find itself thrown on to the siding, the damage done being in proportion to the speed. The danger of accident, in this case, I believe to be much greater than where the points is free to return to the position of rest, immediately that the hand of the pointsman is withdrawn.

4. We lock the points to prevent their being opened by evil disposed people, and to secure their being quite closely shut, but we never fasten them open.

5. The handles of points should, when the position admits of it, give leverage sufficient to allow a man of moderate strength to move the points without difficulty, and the handle should not be too near to the Rail too near a passing train.

I have, &c.,

(Signed) G. B. BRUCE,

Chief Engineer.

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MADRAS RAILWAY,
TRAFFIC MANAGER'S OFFICE,
4TH NOVEMBER 1856.

No. 344.

TO MAJOR T. A. JENKINS,

Agent and Manager Madras Railway.

SIR,

1 Letter from Consulting Engineer, 456, dated 19th September 1856.

1 Extract Minutes Consultation, 289, 15th September 1856.

1 Letter from Chief Engineer, Madras Railway, 204, 15th October 1856.

Referring to your letter, No. 123, of the 31st ultimo, with its enclosures as per margin, I have the honor to observe that I should not consider it so safe to employ the contrivance referred to by the Acting Superintending Engineer in Bombay for the working of points as the ordinary method of a pointsman—and I think all such appliances can only be properly used as auxiliaries to the ordinary method, and to insure the pointsman attending to his duty.

2. I would beg to observe that the best method, in my opinion, to insure the safe working of Points, is to attach a disc to the lever by which any approaching Engineman may see at once from the position of the lever whether the Points are open or shut.

3. Accidents have frequently occurred from self-acting Points remaining partially open after a Train has passed through them, and from the inattention of the Pointsman, in not looking at Points after a train has departed.

4. The Points upon this line are of the ordinary kind, and are worked by native Pointsmen in a satisfactory manner.

I have, &c.,

H. A. FLETCHER,

Traffic Manager.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 235.

On a letter from the Agent and Manager of the Madras Railway Company, No. 770, dated the 5th November 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

Letter, No. 574, 29th August, in Extract Minutes of Consultation, No. 289, 15th September 1856.

The Agent forwards copies of letters from the Chief Engineer and Traffic Manager, giving the information required by the Government of Bombay, regarding the mode of working the points on this line.

2. Of all the expedients yet devised for this purpose, it seems that both Mr. Bruce and Mr. Fletcher are of opinion, the ordinary lever with counterpoise is the best.

3. To the opinion expressed by these Gentlemen, I would only add, that in this country especially, it is desirable to have the lever rods somewhat longer than they commonly are in England; and it has always seemed to me, that the lever itself is too short to give the pointsman perfect facility in working. The object in lengthening the rod, which has generally been done here, is to prevent the native pointsman being staggered by the Engine and Train passing very near him, while handling the lever.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 13th November 1856.

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LOCOMOTIVE ENGINES.

MADRAS RAILWAY,
MADRAS, 3RD JULY 1856.

No. 435.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

On the receipt of your letter, No. 164, dated 31st March, I have the honor to state that I communicated to the Board of Directors of this Company, the fact noticed by you that as the Kuddulhoondy Bridge cannot be completed for some time, it would be as well to defer sending out Locomotives to Beypoor for the present.

2. The Board of Directors have instructed me that they will not, for the present, send out the Locomotives adverted to, but desire the opinion of their Chief Engineer upon the subject.

3. I now beg to annex a copy of a letter from the Chief Railway Engineer, No. 131, dated the 21st ultimo, stating his opinion relative to the advisability of four Locomotive Engines being sent out and landed at Ponany in place of at Beypoor, together with an Establishment of Engine Drivers.

4. As the subject is one in which the Locomotive Department is affected, I called upon the Superintendent of that Department to furnish his opinion upon the subject, which I also annex for the information of the Government.

5. I beg leave to observe that under other circumstances I would accord in the opinions expressed by Mr. Wright, that all the Locomotives of the Company, with Enginemen and Firemen should be part of the Locomotive Establishment; but as the Engines with Drivers now applied for by Mr. Bruce, are for ~~employment on a~~ portion of the line, which for a considerable period, will be separated from the other part of the line by the Cauvery river, and where the Locomotive Superintendent will not be able to have immediate supervision of the Engines nor of the men, I beg to recommend that Government may be pleased, to authorize my applying to the Board of Directors of this Company, to send out to Ponany, two light Locomotive Engines with Tenders and Drivers to be attached, at least for the present, to the Engineer's Department. These Engines would be, I believe, of a coarser description, than those used for traffic purposes; and by this arrangement, the remarks which, from time to time, have been made to me, that the Engines were not properly cared for, when employed in ballasting, and that the men complained of being over worked, would be obviated.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 17th September 1856.

MADRAS RAILWAY, ENGINEER'S OFFICE,
MADRAS, 21ST JUNE 1856.

No. 131.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

In reply to your letter, No. 454, and in accordance with our conversation the other evening, I beg to make the following observations.

It is quite true that there has not much work been done as yet at Beypoor, and that the Kuddulhoondy bridge will take some time to complete, and in fact, if we waited for this bridge, we should probably have to finish the Railway without the assistance of Locomotive Engines on the Western Coast at all.

We ought, however, to have locomotive power, and I would propose that four Engines be sent out and landed at Ponany, instead of Beypoor, for use upon the line at Paulghaut and Coimbatore. There is a good road all the way, along which the boilers can be readily conveyed. You suggested to me in conversation, and I expected to have seen the proposition named in your letter, that it was not desirable or necessary to have the Locomotive establishment on the Western Coast merely for the sake of looking after our ballast Engines, but that this should be done by ourselves, as it would be by an independent contractor. I quite agree with you that Engines should be sent out to us for the construction of the works as ballast Engines, distinct altogether from the usual Rolling Stock for working the Traffic of the line, with Engine drivers especially engaged for that work.

By adopting this plan you will save the expense of a second Locomotive establishment, where there is nothing for them to do except take care of Engines working for us.

I of course only refer to the other coast, the Locomotive establishment being settled on this side.

If Mr. Rendel should decide on sending us out ballast Engines different in construction from those generally used on the line, I would prefer Engines of about 14 inches cylinder and 20 ms. stroke, with six 5 feet wheels all coupled, a separate tender holding 1000 gallons of water.

By sending out Engines there will be no additional expense, and your Engineers will be placed in a position to enable them to do justice to the works under their charge.

On the immense extent of line we have to construct, a few Engines are as nothing, and I hope the Board will not allow our hands to be crippled by withholding them.

I have, &c.,

(Signed) GEORGE B. BRUCE,

Chief Engineer.

MADRAS RAILWAY,
LOCOMOTIVE DEPARTMENT,
13TH JULY 1856.

No. 303.

TO MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

I have the honor to acknowledge the receipt of your letter, No. 70, dated 26th June, forwarding for my perusal, a letter from the Chief Engineer, No. 131, of 21st June 1856, in which Mr. Bruce proposed that four Locomotive Engines be sent out from England with an establishment of drivers for the Western coast, to be distinct and independent from the Locomotive department, and under the directions of the Engineering department.

2. You are so good as to ask for my opinion on the matter, and I must therefore state that such an arrangement appears to me in many ways open to objection, and I cannot understand how the Chief Engineer can come to the conclusion that the Engines can, as a separate establishment from the Locomotive department, be worked with greater economy, to greater advantage, or with a less numerous or less expensive establishment.

3. You are aware that it is proposed to establish Locomotive and Carriage Workshops both at Coimbatore and Tripatoor, and I certainly expect as the Locomotive and Carriage Superintendent of the Railway, that they will be under my control.

4. Before the Engines can be used to advantage, it is necessary that workshops should be erected for the construction of waggons, and presuming that I am to build the whole of the Rolling Stock for the line I must have an establishment for this purpose on the Western coast. You will readily perceive that the Superintendence of this establishment, if conjoined with that over the Engines, must necessarily be less costly than entirely separate establishments and that the continuance of the Locomotive and Carriage departments under one control, must be a source of mutual advantage to each department and of economy to the Company.

5. Then as to the landing and erection of the Engines, I have men who have been engaged under my immediate Superintendence from the landing of the first Engines, men of whose character and capabilities I have had every opportunity of judging, and who I should therefore consider as the most fitting to be sent to the other coast, where it is indispensably necessary that men of experience and trustworthy character should be placed. In every branch of the department I have men in training, Europeans, East Indians, and Natives, as Firemen, Fitters, Turners, Machinemens, Smiths, Moulders, Copper-smiths, &c. daily gaining experience under our European Mechanics at Madras, and who I look to be able to distribute over the several Locomotive establishments on the line to assist in training up others to the work.

6. Again—the management from the commencement of the Locomotive Engines on the other coast, beginning as we probably shall by using one or two Engines a day, would give me the opportunity of gradually training up men and getting together by degrees, as we have done at Madras, an establishment tolerably efficient by the time that the line is ready for Traffic, and would enable me to have an insight into the character and capabilities of the Enginemens and others, before undertaking the greater responsibility of running Trains for the public convenience.

7. I should moreover, according to circumstances and the requirements of the work, be able to draft men from Madras to the Western coast, or vice versa.

8. But there is another reason against the principle of having two Locomotive establishments in the pay of the same Company, which is in my opinion a most important one. I allude to the jealousy with which workmen would view any distinction that might at any time be made between such as may be under the control of the Chief Engineer, and such as may be under me; and the danger that there is of rivalry springing up (as it most undoubtedly would do) between the Locomotive department proper and that of the Chief Engineer on the other coast, and the risk there would be, from such competition, of losing that control over your workmen so necessary to discipline, which must be diminished where men would have the run between two establishments of the same character.

9. What I would respectfully propose is this. That a workshop be erected as early as may be convenient (on the site at Coimbatore selected by the Chief Engineer and myself) according to the plan proposed by me to Mr. Bruce and acquiesced in by him, for the construction of waggons and other Rolling Stock.

10. That if Coimbatore be a convenient place to work the Engines from for the Chief Engineer, that they be worked from there, or at least that Coimbatore be the Depot for the Engines when standing idle and for heavy repairs.

11. That sheds be constructed at the point of the line that may be nearest to the landing place, or most convenient in the opinion of the Chief Engineer for the putting together of the Engines.

12. That an erector or Fitter appointed by me have charge of the erection, repairs, and all matters connected with the maintenance of the Locomotives.

13. That the Resident Engineer of the district, or other officer appointed by the Chief Engineer, should have entire charge and control over the Enginemens, as regards their working whilst the line is under construction, and a general supervision to see that the Engines are properly maintained, and that he be held responsible for the working of the line and for the orders given to the Enginemens.

14. That the usual Locomotive reports and returns be transmitted periodically to me through the Engineer in charge, with his signature as a voucher for their authenticity.

15. That any complaints on the part of the men of being overworked, or otherwise aggrieved, be forwarded to me also through the Engineer in charge.

I have, &c.

(Signed) W. B. WRIGHT,
Locomotive Superintendent.

(True Copies.)

T. A. JENKINS,
Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 353.

TO THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,
In reply to your letter, No. 425, of the 3rd instant, upon the subject of certain Engines which your Chief Engineer wishes to have landed at Ponany, I have the honor to request I may be favored with any information you may have collected, regarding the practicability of bringing them up a certain distance, towards your Railway, by the Ponany River; up to what distance you find they might be thus brought, and during what months their transport by river might be best effected.

I have, &c.,

(Signed) T. T. PEARS,
Consulting Engineer for Railways.

Madras, 8th July 1856.

MADRAS RAILWAY, 22ND AUGUST 1856.

No. 550.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,
With reference to your letter, No. 353, dated 8th ultimo, I have the honor to annex a copy of a letter from the Chief Engineer, with its enclosure from Mr. Dixon, Assistant Engineer, affording the information in respect to the practicability of navigating the Ponany River. But it appears that the season at which the river is navigable is during the height of the South West monsoon, when it will be impracticable to remove heavy machinery, from a ship off the port of Ponany. The Chief Engineer however, proposes to convey the Engine boiler on a waggon, by a road from Ponany to such point on the line as may be necessary.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted with (observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Camp Ootacamund, 17th September 1856.

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MADRAS RAILWAY,
CHIEF ENGINEER'S OFFICE,
CAMP COIMBATORE, 12TH AUGUST 1856.

To MAJOR T. A. JENKINS,

Agent and Manager.

SIR,

1. I beg to forward you a copy of a letter received from Mr. Dixon, regarding the navigation of the Ponany river.
2. We have during the present monsoon brought rails from Ponany to within 25 of Palghaut, but I do not think we can calculate on availing ourselves of the river, for taking up the Locomotive Engines, because the season during which the river might be used for this purpose, no ship can anchor in the roads.
3. I do not consider this as affecting the question of the propriety of sending out Engines, inasmuch as we could, without great difficulty, take the Engine boilers on a waggon to any point of the line where we wished to use them, the public road from Ponany to Coimbatore being sufficiently good to allow of this.
4. I should prefer having all our stores during the coming season landed at Ponany, instead of Bepoor, because we have a direct road from Ponany to the interior.

I have, &c.,

(Signed) GEORGE B. BRUCE,
Chief Engineer.

MADRAS RAILWAY, ENGINEER'S OFFICE,
PUDIANAGADDEY, DISTRICT 16, 6TH AUG. 1856.

MY DEAR SIR,

According to your letter of 10th July, (enclosed) I have made every enquiry in my power regarding the navigation of Ponany, my sources of information being the boatmen on the river, the European salt Pischear at Ponany (Mr. Kilroy), merchants and others, and lastly the talook officials.

2. The results are that the river is navigable for their largest crafts, during the months of June, July, August and September, July and August being about the best; during October and November they will carry about $\frac{1}{2}$ or $\frac{1}{4}$ their maximum load, which is I believe (although the accounts vary somewhat, that of the boatmen being the greatest) about 11,000 lbs, according to Kilroy from 8 to 10,000, for this load four men are required to the boat. Practical men say that two boats lashed together might be brought up, carrying about $\frac{1}{2}$ as much again.

3. These can go so far as Ootapalliam (5 miles beyond Waniacoulam on the Palghaut road), the time generally taken, with a good breeze, being five days to go there and two to return.

4. Tritala they say is just midway.

Yours truly,

(Signed) C. J. M. DIXON.

To G. B. BRUCE, Esq.,
Chief Engineer.

(True Copy.)

(Signed) ROBERT PATON,
For Chief Engineer.

(True Copies.)

T. A. JENKINS,
Agent and Manager.

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RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 99.

To CAPTAIN P. M. FRANCIS,

Civil Engineer 7th Division.

SIR,

I have the honor to request you will oblige me, at your earliest convenience, with information on the following points.

Un to what points is the Ponany River navigable for light boats and rafts, drawing not more than two feet of water, in each month of the year?

What period of the year do you understand that this River may be most readily and advantageously turned to account, for the transport of goods and stores by boats and rafts?

What is the average fall of the River?

I ask these questions with especial reference to a proposition by the Railway Company's Officers to land Engines at Ponany; and I am anxious to ascertain how far, and at what seasons of the year, the river might with advantage be made use of for their conveyance to the Rail.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 8th July 1856.

CIVIL ENGINEER'S OFFICE, 7TH DIVISION,
COIMBATORE, 17TH JULY 1856.

No. 368.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

In reply to your letter, dated 8th July 1856, No. 99, I have the honor to state that I regret I have no accurate information, as to the depth of water in the Ponany river, during each month in the year. The salt boats which are deeply laden and return with grain make for Wattapallum, in the year. The head of the navigation, where there is a bridge, over a main feeder, on the Trunk road. They are favored by a strong breeze from the west, and are able to make head against the current by its assistance, and by means of poling. I believe that for about six months in the year the river can be used, beginning in June, but not continuously: sometimes the river falls too low to admit of the boats getting up.

During the dry weather, the river is not navigable for the lightest boats more than two or three miles from the sea. The fall of the river is considerable. I have supposed it, to within a few miles of the sea, to be four feet a mile, but the levels have not been taken. The current is excessively rapid in the freshes. I am sorry that my information is not more definite. It had been my intention to have registered observations on this river, with reference to the transport of salt, in which the Government annually spend a large sum in getting it as far as Wattapallum by boat, but the Malabar district is now under Captain Ouchterlony.

I have, &c.,

P. M. FRANCIS,

Civil Engineer 7th Division.

Coimbatore, 17th July 1856.

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No. 176.

On letters from the Agent and Manager of the Madras Railway Company, Nos. 435, and 550, dated severally the 3rd July and 22nd August 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent forwards with the first of these letters, an application from the Chief Engineer, for four Locomotive Engines, of a specified description, to be sent out to the Western coast, for use in the construction of the line.

2. Application had been made for Engines, to be landed at Beypoor; but on my pointing out to the Agent that the bridge over the Kuddulhoondy Estuary near that Terminus, would for some time to come, oppose an obstacle to the Engines passing up the line, the Board deferred sending them out.

3. It is now proposed to land them at Ponany. I think the suggestion a good one. The Board in England, frequently complain, I observe, of the imperfect information with which applications for supplies are accompanied: and as they would naturally feel surprize that in such an application as this no notice had been taken of the Ponany river, known to be navigable in certain seasons, I called upon the Agent for further information upon this point.

4. I also wrote to Captain Francis, lately Civil Engineer of that District, upon the subject: and his reply will be found appended.

5. I have also had an opportunity, lately, of enquiring into the subject myself: and I have learned enough to satisfy me, that the information conveyed in Mr. Dixon's letter,* corroborative as it is generally of that given by Captain Francis, is substantially correct.

6. The point "Wattapollium" to which the river is said to be navigable for some months in the year, will be found on the Indian Atlas as a village on the high road between Palghaut and Ponany—Long. 76° 27'. It is about 30 miles, or rather more, from Ponany.

7. This information may be useful to the Directors, in determining the season for sending out these Engines, if sent at all.

8. Mr. Bruce, appears however, to prefer conveying them by road, in the course of which, they must be carried across a broad sandy river at Tirtallah.

9. His reason, viz., that during the months that the state of the river is most favorable to navigation, ships cannot lie at Ponany, is not conclusive to my mind, inasmuch as there can be no possible reason why the Engines should not be landed, or rather brought into the Ponany river, shortly before that time, ready to be taken up the river on the first favorable opportunity. If the Engines were landed at Wattapollium, they would either be placed on the rail there, and used on the line between that and Paulghaut, or sent up by road to Coimbatore. It may be as well to add that the work in the Walliar jungle, is of so heavy a character that the last link wanting, to complete the line from Beypoor to Coimbatore, will be there: while from Wattapollium to Paulghaut the works are comparatively light.

10. I think it desirable some Engines should be sent out as required by the Chief Engineer. In ballasting and conveying materials they seem to me to promote the economical construction of the line. I would in consideration of the circumstances noted in the accompanying correspondence, recommend that they be sent out so as to reach Ponany not later than the end of April. They can at once be brought into the river, and the Railway authorities will have the option of either floating them up to Wattapollium, or adopting Mr. Bruce's suggestion of taking them up by common road.

11. With regard to the point mainly treated of in Mr. Wright's letter, the department under which the Establishment attached to these Engines should be placed, I think this should be left to the decision of the Board of Directors.

12. With these remarks, I would recommend that Government authorize the Agent to make application for these Engines.

Camp Ootacamund, 17th September 1856.

T. T. PEARS,
Consulting Engineer for Railways.

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FINANCIAL (RAILWAY) DEPARTMENT.

No. 316.

Extract from the Minutes of Consultation, dated 27th September 1856.

Read observations of the Consulting Engineer, on two letters from the Agent and Manager of the Madras Railway Company.

(Here enter 17th September 1856.)

The Agent and Manager of the Railway Company is authorized to apply to the Board of Directors, in England, for Locomotive Engines of the description required by the Chief Railway Engineer, to be sent out with the requisite Establishment of Tenders and Drivers, so as to reach Ponany not later than the end of April.

2. As regards the department under which the Establishment attached to those Engines should be placed, the Government agree with the Consulting Engineer that this point should be left to the decision of the Railway Board.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

BEYPOOR HARBOUR AND FLAGSTAFF.

MADRAS RAILWAY, 14TH MAY 1856.

No. 283.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

I have the honor, under the instructions of the Board of Directors of this Company, to bring to the notice of the Government through you, that the Masters of Ships, laden with Stores for this Company, have stated that they have much difficulty in finding the Port of Beypoor.

2. To facilitate their doing so in some measure, the officers of this Company at Beypoor erected a Board, on which was pointed "Madras Railway;" but this appearing to be very insufficient for the purposes required, I am directed by the Board of Directors to request that you will have the goodness to move the Government to cause a Flag Staff with a Light, or some more permanent beacon than that above adverted to, to be erected at the port of Beypoor.

I have &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the sanction of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 30th May 1856.

No. 95.

On a letter from the Agent and Manager of the Madras Railway Company, No. 283, of the 14th May 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent, by desire of the Directors of the Railway Company, brings to notice the difficulty experienced by the Commanders of vessels in finding the port of Beypoor.

nr

2. A large board was lately put up on a rock, near the river mouth, with the words "Madras Railway," and has been found useful to some extent in the day time, and in clear weather, but the Agent suggests now that a flagstaff and light should be erected.

3. As the Terminus of the Railway, the place will probably grow into importance. Once brought under the influence of the Railway in full operation, it will doubtless be necessary to provide for the safety and convenience of the shipping, as well as for the general improvement of the port; and as the number of ships employed in conveyance of Railway stores will be henceforward considerable, I would certainly recommend that the Agent's request be complied with, and that the port be at once furnished with flagstaff and light, the usual notices being published on the occasion.

(Signed) T. T. PEARSE,

Consulting Engineer for Railways.

Madras, 30th May 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 187.

Extract from the Minutes of Consultation, dated 16th June 1856.

Read the following observations by the Consulting Engineer, on a letter from the Agent and Manager of the Madras Railway Company.

(Here enter 30th May 1856.)

The erection of a flagstaff, with a light at the port of Beypoor, proposed by the Railway Agent, being very advisable to provide for the safety and convenience of the shipping, as well as for the general improvement of the port, which may be expected to increase much in importance on its becoming the Terminal station of the Railway, the Chief Engineer will, after communicating with the Marine Board, in respect to the position of the flagstaff and kind of light to be employed, submit plan and estimate for the proposed flagstaff and light house, at his early convenience.

2. The Chief Engineer will also, in communication with the Marine Board, report whether any improvements could be made in the harbour of Beypoor—and if so, submit plans and estimates.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

From H. THOMPSON, Esq.,

No. 1665.

Acting Chief Secretary, Marine Board.

To T. PYCROFT, Esq.,

Sir,

Chief Secretary to Government, Fort Saint George.

1. Referring to the order of Government, in Minutes of Consultation, No. 187, of 16th June 1856, setting forth that the erection of a flagstaff with a light at the Port of Beypoor being very advisable, to provide for the safety and convenience of the shipping, as well as for the general improvement of the Port which may be expected to increase much in importance on its becoming the Terminal Station of the Railway. The Marine Board desire me to request you will bring to the notice of Government the report of the Collector of Malabar, dated 22nd February 1856, enclosed in my letter of the 12th May 1856, by which it will be seen that the trade at Beypoor is as yet small, although it is to be expected that it will very considerably increase.

2. The question, however, of a light at Beypoor requires consideration, as there is a light displayed at Calicut only two leagues distant, and it is opposed to all rules for lighting a Coast to have a light of the same character within 50 miles—and red or colored lights are objectionable.

3. The Board prefer keeping the light at Calicut, on account of the shoals and reefs off that place, and on which several Vessels have been lost—the Honorable Company's sloop "Coote" a few years ago, and the "Juliana" very lately, about which a correspondence lately took place. The Board however consider that the Lantern at Calicut might be altered from the 3rd size to the largest size, and the light kept burning during the whole year, instead of being extinguished from 20th May to 10th August.

4. The Board desire me to suggest that, in lieu of a light at Beypoor, an obelisk or building be put up of a form and height that will render it an object easily distinguished by Vessels approaching the Coast, and visible at some distance at sea; but the Board advise that Lieutenant Colonel F. Cotton be referred to as to the best kind of mark which will appear most clearly and distinctly from the Trees on that Coast.

5. With reference to the order to the Chief Engineer, to enter into communication with the Marine Board respecting any improvements in the Harbour of Beypoor, the Board beg the attention of Government to their letter of the 16th March 1855, forwarding a proposal for cutting and deepening the Bar at Beypoor, and I am now desired to enclose copy of the Board's letter of 10th April 1855, conveying to the Collector the Order of Government on this proposal, as communicated in Minutes of Consultation 5th April 1855, and to which no reply has yet been received.

6. The Board desire me to explain, that this Port may be rendered more convenient for ships, and that probably shelter may be found for vessels off Beypoor, behind one or other of the Reefs near the Island; it is also possible that the sand on the Bar may eventually be so far removed as to allow of Vessels, drawing 18 feet, passing over the Bar into the Back-water, and both measures effected at a trifling outlay; but careful enquiries must be instituted before the engineering measures to effect these improvements can be planned. Few difficulties may exist for operating on the Bar, so as to allow of boats, of considerable burthen, passing in and out of the fine reach which lies inside the Beypoor Bar; but to attain this end, a thorough acquaintance with the state of the back-water, river, and set of the currents, as well as the rise and fall of the tide, must be obtained; and an enquiry into the state of the boats should also be instituted.

7. The Board are inclined to recommend that a Steam Tug of 60 horse power with powerful rakes, or broad scoops, be provided, and an attempt made to stir up the sand on the Beypoor Bar, and inside the back-water, so as to loosen the sand, and, if practicable, allow the current to act on it and sweep it seaward.

If the Bar should be found to be formed of laterite, below the sand, then after the rakes cease to be useful, the Tug might be transferred to Cochin, where the Master Attendant, also Mr. Oughterson and Lieutenant Selby of the Indian Navy, all agree in advising a Steam Tug being employed at Cochin, with powerful rakes attached to loosen the sand over the Bar, at the mouth of the entrance into that fine Back-water, at such times as the action of the Current will carry the sand to Seaward.

8. The Tug built for Beypoor and Cochin, when not employed on the Bar, with rakes or scoops, would be useful in towing Vessels, and for other purposes, and would render good service at these Ports.

9. As the improvement of the Beypoor river and bar is of importance to the Railway, as well as to the Country, the Board suggest that a report be obtained from the Railway Engineer, on the general utility of this Port, also on the Beypoor Backwater, the Reach, and Bar, and River, with suggestions for improving the place. The Indian Iron Company's Iron Works being also

near to the Back-water, perhaps some useful suggestions may be obtained from the Officers of that Company, and if both Companies would unite in carrying on the works requisite for improving the Port, the Government might pay half, or two thirds, the outlay, and each Company one quarter, or the balance; but under any circumstance, the benefit to the people and country generally from having a good haven on that Coast would be great.

10. The Marine Board direct me to mention that there is no Master Attendant at Calicut, and no Marine Department at Beypoor, and the distance is about 80 miles from Cochin, where there is a Master Attendant; and as along this extensive line of (Malabar) Coast there are only two Master Attendants, one at Tellicherry and one at Cochin, about 120 miles apart, the Board therefore suggest a Marine Department being allowed intermediately, either at Calicut or Beypoor, but with control over both places.

11. As Beypoor and Calicut were surveyed by the late Captain Montriou, and Lieutenant Taylor, of the Indian Navy, the Board recommend Government to obtain from the Government of Bombay detailed copies of the surveys, with the angles, bearings, &c., also the Reports by these officers on this part of the Coast.

12. The Board have applied to the Collector of Malabar for copies of the Reports on the Beypoor river and the affluents, and the Board also suggest that particular instructions be given to the Collector, not to allow any more encroachments on the basin of the Beypoor backwater, or on the banks of the river flowing into the backwater.

13. As these questions, connected with the tidal Harbours, involve some of the most difficult Engineering operations, and as these cannot with safety be entered upon without most minute information, the Marine Board strongly recommend Government to set apart a sum of 350 Rupees, for printing all the Reports connected with the Ports and Harbours on the Western Coast.

I have, &c.,

(Signed) H. THOMPSON,

Acting Secretary.

Madras, Marine Board Office, 1st July 1856.

No. 833.

FROM THE SECRETARY MARINE BOARD.
TO THE COLLECTOR OF MALABAR.

SIR,

I have the honor, by desire of the Marine Board, to forward the accompanying copy of Extract from the Minutes of Consultation of the 5th instant, No. 81, authorizing a limited expenditure to be incurred by Captain Selby, in sounding over the bar and back-water at Beypoor, as applied for in the 113th para of his memo: forwarded in your letter of the 23rd February last. The sum applied for was 250 Rupees, and to this Captain Selby should restrict himself as near as possible.

2. Captain Selby proposes to sound over the bar, and to bore with the view of ascertaining the description of bottom he will have for the work he contemplates; but besides this, it is necessary that the back-water be surveyed, and the area of deep water laid down, lines of soundings should be taken from side, to side as far as moderate sized vessels could proceed, and in recording

them on the plan they should be reduced to low water. Mention should also be made of the rise and fall of the tide—the times of high water if possible, and the velocity and direction of the current. The nature of the bottom inside should also not be overlooked.

I have, &c.,

(Signed) J. J. FRANKLIN,

Secretary.

Madras, Marine Board Office, 10th April 1855.

(True copy.)

(Signed) H. THOMPSON,

Acting Secretary.

(True Copies.)

(Signed) T. PYCROFT,

Chief Secretary.

MARINE DEPARTMENT.

No. 246.

Extract from the Minutes of Consultation, dated 14th August 1856.

Read the following letter from the Secretary Marine Board.

Submits Board's observations on the order of Government, in Extract Minutes of Consultation, No. 187 of 16th June 1856, relative to the erection of a Flagstaff with a light at the Port of Beypoor. Also suggestions for improving this port, and recommends that Government set apart 350 Rupees for printing all the reports connected with the Ports and Harbours in the Western Coast. } Here enter 1st July 1856.

In Extract Minutes of Consultation, under date 16th ultimo, No. 187, the Chief Engineer was directed, after communicating with the Marine Board, to report upon the proposal made by the Railway Agent, for the erection of a flagstaff with a light for the Port of Beypoor, and in regard to the feasibility of the general improvement of the harbour.

2. From the Board's letter it would appear, that no communication has passed between them and the Chief Engineer on the subject—and the Right Honorable the Governor in Council resolves therefore, in conformity with the orders of the Court of Directors, that the Department of Public Works shall be consulted in regard to all works connected with the improvement of harbours, to forward copy of the Board's letter for the opinion of Colonel Faber, and for such remarks as he may wish to offer.

3. His Lordship in Council however proceeds at once to pass orders upon those propositions of the Board which seem to require immediate notice. It appears to the Government that if, as stated by the Board, it be objectionable to have a second light at Beypoor, so near the one already existing at Calicut, the power of the Calicut light may with propriety be increased as recommended, and an obelisk, together with a flagstaff, be erected at Beypoor. On this point the Chief Engineer will consult Lieutenant Colonel Cotton.

4. The Government are not prepared to decide upon the proposal to have a steam tug and dredge for employment at Beypoor and Cochin, until they are in receipt of further information on the subject than is contained in these paras of the Board's letter.

5. The Manager and Engineers of the Railway, as well as the Manager of the Iron Company's works at Beypoor, will be requested to favour the Government with their opinion in regard to the improvements feasible to the harbour and the neighbouring localities, and invited to offer any suggestions that may occur to them on the subject.

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6. It seems to the Right Honorable the Governor in Council that the Master Attendant at Tellicherry, who can have comparatively but little work at that port, might with advantage be transferred to Calicut, with charge of that place, Tellicherry, and Beypoor. The Marine Board are requested to state their views on this point with reference to their proposal in para 10 for a 3rd Master Attendant for the Malabar Coast.

7. Agreeably to the suggestions of the Board in paras 11 and 12, the Government of Bombay will be requested to supply to this Government detailed copies of the surveys of the harbours of Beypoor and Calicut, and the Collector of Malabar will be instructed to prevent further encroachments in the Beypoor backwater.

8. With reference to the concluding para of their letter, the Board are requested to furnish a list of all the reports they are acquainted with, connected with the ports and harbours of the Western Coast. When collected, these reports will be printed in the Government Press, together with any others that the records of Government or of the Central Office of Public Works may be found to supply.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 420.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

In transmitting for your information extract of an Extract from the Minutes of Consultation, No. 246, dated the 14th instant, in the Marine department, and from the report which accompanied it on the subject of the improvement of the Beypoor river and a flagstaff at that port, I have the honor to request you will obligingly furnish me with your views, as well as those of your Chief Engineer, and such other of the Engineers as you may think proper to consult, relative to the proposed improvement of the harbour, &c.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Camp Coimbatore, 25th August 1856.

MADRAS RAILWAY,
MADRAS, 7TH OCT. 1856.

No. 680.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

With reference to the Extract from the Minutes of Consultation, No. 246, dated the 14th of August, and your letter, No. 420, dated 25th idem, I have the honor to acquaint you that the Chief Railway Engineer has proposed, previous to his submitting a report on the Beypoor harbour, to appoint an Engineer, competent in such matters, to survey it, and to report upon

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its capabilities as a harbour. I beg to state that I quite concur in the desirability of an Engineer being employed temporarily on the duty, and recommend that Government may be pleased to sanction the same.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,
Consulting Engineer for Railways.

Madras, 20th October 1856.

No. 280.

On a letter from the Agent and Manager of the Madras Railway Company, No. 680, dated 7th October 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

No. 246, dated the 14th August 1856.

With reference to a late order of Government, the Agent and Manager proposes to appoint an Engineer, one of the Railway Officers I presume, to survey the harbour of Beypoor. I do not concur in this proposal, as the Railway Company have no Engineers to spare from their proper duties; and an officer of the public works department is already employed on that duty.

2. I take this opportunity of observing, however, that what is wanted before any Engineer can prepare a report, either to his own satisfaction, or that of Government, appears to me to be, a careful survey and report by some qualified Marine surveyor. The work involves an enquiry into the seasons, the tides, the winds, the littoral current, the river freshets, the shifting shoals. One of the most important duties connected with such a survey consists in the taking and recording soundings accurately, and with reference to a tidal standard.

3. I believe no accurate survey of Beypoor harbour exists at present.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 20th October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 368.

Extract from the Minutes of Consultation, dated 28th October 1856.

Read the following observations of the Consulting Engineer for Railways, on a letter from the Agent and Manager Madras Railway Company.

(Here enter 20th October 1856, No. 208.)

The Government quite concur in the remarks of the Consulting Engineer, on the proposal submitted by the Railway Agent, and desire that the Agent be informed that it is not necessary that an Engineer of the Railway Company should be employed on the survey of the harbour of Beypoor, as an Officer of Engineers is already engaged in that duty.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

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MEDICAL OFFICERS.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 553.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

As the Government in Extract from Minutes of Consultation, No. 144, dated the 27th June 1854, have ruled that although they permit their Medical Servants stationed along the line to afford Medical aid to the employées of the Railway Company, if brought to the Civil Dispensary, yet it is not considered advisable that the Zillah Surgeons should leave their stations, I have the honor to request to be informed, now that the line is about to be opened, whether the Government will be pleased to permit, in cases where accidents occur on the line, or where the services of a Medical Officer may be urgently required, Surgeon J. Sanderson, the Consulting Physician of this Company, to leave his district and proceed up the line to afford Medical aid under the circumstances stated.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 8th November 1855.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 10th January 1856.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 389.

To THE AGENT AND MANAGER OF THE MADRAS RAILWAY COMPANY.

SIR,

In acknowledging the receipt of your letter, No. 553, of the 8th instant, I have the honor to request I may be informed, whether in speaking of accidents that might occur on the line, requiring urgently the services of a Medical Officer, you allude specially to such as might befall the servants of your Company, or to such as might affect passengers and others generally.

2. I would suggest that before submitting this question to Government, Dr. Sanderson's opinion should be taken, but I cannot suppose you contemplate making provision for accidents to any but your own servants.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

Madras, 12th November 1855.

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MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 649.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer.

SIR,

In advertence to my letter, No. 553, dated the 8th ultimo, and to your reply, No. 389, dated the 12th idem, in which you require to be informed whether in speaking of accidents, that might occur on the line, requiring urgently the services of a Medical officer, I allude specially to such as might befall the servants of this Company, or to such as might affect Passengers or others generally; I have the honor to state that the practice, usually followed, on Railways is, on the occurrence of an accident, a message is immediately sent by Electric Telegraph to the nearest points where aid can be procured, without waiting to consider whether the injured person be a servant of the Railway Company or a Passenger. An Engine is despatched with the least practicable delay with aid, both in the Medical and other Departments. The injured individuals are then conveyed to their destination, or where desirable. I therefore am of opinion that the same practice should be pursued on this Railway. I take for instance that an accident occur between Salem and Vellore: a message would be sent to the nearest of those two Stations, and it would be desirable that the Medical officer at that station be permitted, in such cases, to proceed to the point where the accident had occurred, when he could take back with him such of the servants of the Company and the poor who would, I suppose, be admitted into the Zillah Hospital; or should the accident occur between this and Arcot, the Medical officer, if allowed, might proceed from the Presidency, returning with the injured, who would in like manner be sent to the General Hospital or Monegar Choultry; the Railway Company having completed their duties, on the injured being handed over to the Medical officers at the stations or Hospitals.

2. As called for in your letter, I annex a copy of one from Dr. Sanderson giving his opinion upon the subject.

I have, &c.,

T. A. JENKINS,

Agent and Manager.

Madras, 22nd December 1855.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 10th January 1856.

To MAJOR T. A. JENKINS,
Agent and Manager, Madras Railway Company.

SIR,

I have the honor to acknowledge the receipt of your letter, under date 15th November (and which is appended in the margin), and in reply to state that, should the Government be pleased to allow of my services being made use of, in the way contemplated in your communication, to proceed up the line in cases of accidents occurring, with the view of affording Medical aid to the sufferers, that I shall be most happy to do so, and that also I shall be prepared to make arrangements, that another Medical officer do so on my account, should it so happen that I am engaged in any case, which does not admit of my leaving at the time my services are required.

As this will necessarily involve the performance of executive duties, in addition to those of a superintending nature, which are now performed by me, I trust you will not think it intrusive on my part to call your attention to the remuneration, that is attached to the present office, viz., Rs. 140 per mensem, with the view of an increase being made to the salary, should the Government decide in favor of my services being so employed.

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It may not be out of place here to state, that the duties of the Consulting Physician have been not only to supply the Railway Department with Medical Subordinates and Medicines, but to organise a system, by which returns are received from all the Stations extending from Madras to Beypoor, on the opposite coast, to watch over the whole system, that is being adopted, both as to treatment of disease, granting Certificates to Engineer Officers, and any one connected with the Railway Department, as well as the expenditure of Medical Stores and others.

The Medical Establishment, along the whole line of Railway, is done exactly on the same footing as one large Hospital, as you are aware, from the monthly return, forwarded to your Office, of all admissions into Hospital, cures and deaths, including the number of days the patients are off work. Under these circumstances, I am sure that you will not consider, that I am expressing any exorbitant wish, and I call your attention to the subject.*

No. 389, 12th November 1855.

With reference to the letter, from the Consulting Engineer (appended also in the margin), which you have been good enough to enclose for my perusal, and in which Colonel Pears suggests that my opinion should be taken, with reference to Medical aid being afforded in cases of accidents, to "Passengers and others generally," as well as to the Railway servants, I would venture to reply that, as far as my ideas lead me to form an opinion on the subject, that the Medical officer of the Railway Company should only be required to afford Medical aid to the Company's own servants; at the same time, it is to be hoped that no Medical officer would ever refuse to afford that aid to any one suffering from an accident, should it be within his power to afford it.

I have, &c.

(Signed) J. SANDERSON,

Consulting Physician, Madras Railway.

Madras, Consulting Physician's Office,
21st December 1855.

(True Copy.)

T. A. JENKINS,

Agent and Manager.

No. 3.

On letters from the Agent and Manager of the Madras Railway Company, dated severally the 8th November and 22nd December 1855, Nos. 553 and 649.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent wishes to be informed, with reference to the probability of a portion of the line of Railway being soon thrown open for public traffic, whether the Medical Officers, now receiving allowance from the Railway Company, and who are in every case Government servants, would be permitted to leave their stations, in the event of accidents occurring on the line, for the purpose of rendering aid to persons who might be sufferers from such accidents.

Extract Minutes Consultation,
Financial (Railway) Department, No. 188, dated 20th August 1854.

Extract Minutes Consultation,
Financial (Railway) Department, No. 144, dated 27th June 1854.

2. There are at present, besides the Consulting Physician at the Presidency, five Medical Officers, receiving under the sanction of Government each an allowance of Rupees 50 monthly, from the Railway Company, as remuneration for their services in attending the servants of the Company, at the Sudr Stations, viz. at Vellore, Salem, Coimbatore, Palghat, and Calicut.

3. The question now put is whether there will be any objection, on the part of Government, to these officers, including the officer at the head of the Railway Medical department, Dr. Sanderson, going out, on occasions of accidents in the neighbourhood of their several stations, to render aid to such as might be sufferers on the occasion.

4. I should be sorry to think that the introduction of Railway travelling rendered necessary any special or additional provision of Medical attendance. I presume that if a serious accident did occur on the line, a similar course would be adopted with that which would be followed at present if a serious accident were to befall, or dangerous illness overtake, a traveller on the high road. He would send to the nearest station for a Medical Officer, and unless prevented by more important duty, such Officer would never hesitate to proceed to his assistance, or be censured for doing so. The only and important difference in these two cases is, that, in the event of a Railway accident occurring, the Telegraph would be at hand to communicate the circumstance, and an Engine would be available to convey either the sufferer to the nearest station, or the Medical Officer to the scene of disaster; so that the latter never need be absent from his proper post more than a few hours, and could generally, as pointed out by Dr. Sanderson, in the accompanying letter, make provision for the duties of his own office during the short time he would be absent.

5. For all trifling accidents, it is to be observed the Railway Company are provided with Apothecaries at present along the line.

6. It appears, therefore, that the Medical Officers in receipt of an allowance from the Company, at the several stations near which the line passes, might, when the line is in work, be permitted, their own duty to Government not interfering, to give their services in case of accidents happening on the line within a certain distance of their several stations. This, it may be observed, is quite a different matter from attending patients residing at a distance from their stations, a proceeding to which the Medical Board appear to have objected in their report to Government of the 15th June 1854.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 10th January 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 28.

Extract from the Minutes of Consultation, dated 4th February 1856.

Read the following observations of the Consulting Engineer, on letter from the Railway Agent.

(Here enter 10th January 1856, No. 3.)

The Consulting Engineer submits, for the orders of Government, a reference from the Railway Agent as to whether on the Railway being thrown open to public traffic, the Government Medical Officers, now receiving allowance from the Railway Company, would be permitted to leave their respective stations, on occasions of accidents in their several neighbourhoods, to render aid to such as might be sufferers on the occasion. For all trifling accidents, the Railway Company are provided with Apothecaries on the line, and Colonel Pears is of opinion that such Medical Officers, as are in receipt of an allowance from the Company, at the Stations near which the line passes, might, when the line is in work, be permitted, their own duty to Government not interfering, to give their services in cases of accidents within a certain distance of their respective stations, it being understood that their attendance on parties residing at a distance will not be required.

Government concur in these views. It appears to them that, circumstanced as this country is with respect to Medical aid, Surgeons must be allowed to leave their districts on emergency in case of accidents, but it should be understood that the nearest Officer will be applied to.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

SUBSCRIPTION TO THE MONEGAR CHOULTRY.

MADRAS RAILWAY,
MADRAS, 9TH OCTOBER 1856.

No. 691.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

SIR,

1. I have the honor to state that twelve months have elapsed since a donation of Rupees 250 was, with the sanction of the Government, made by this Company to the funds of the Monegar Choultry.

2. The question has arisen as to the desirability of making a further donation to that Institution; I referred the subject for the opinion of the Consulting Physician, a copy of whose letter I beg to annex.

3. We have during the past year availed ourselves of the vicinity of the Monegar Choultry to send to that hospital, for treatment, cases of accidents to coolies and others employed upon the works, not having any accommodation of our own for the treatment of such case.

4. Anticipating the possibility of an accident on the line attended with personal injury, I made enquiries as to how the necessary appliances could be immediately obtained, I find that at the Monegar Choultry there is a most efficient establishment maintained, by day and by night, with every requisite for the treatment of every case of accident likely to occur; and that the injured poor could, on being brought back to Madras, be received into this hospital. I submit that these are advantages worthy of great consideration, and therefore I have to request that you will move the Government to authorize, subject to my obtaining the approval of the Board of Directors, the payment of an annual subscription of Rupees 250 to that Institution.

5. I would also, in advertence to the recommendation of the Consulting Physician, and to Extract from the Minutes of Consultation, No. 188, dated 29th August 1854, solicit the sanction of the Government for the Medical officer, of No. 1 District, being allowed to receive, and my being permitted to pay him, an allowance of Rupees 70 per mensem, to afford Medical aid to the servants of this Company residing at Royapoorum, as well as those that may come under his treatment in the Monegar Choultry, and that in accordance with the order of Government, No. 28, dated 4th February, his services may be made available on occasions of accidents in the neighbourhood or upon the line.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

Submitted (with observations) for the sanction of Government.

Madras, 14th October 1856.

T. T. PEARS,
Consulting Engineer for Railways.

No. 160.

TO MAJOR T. A. JENKINS,

Agent and Manager, Madras Railway Company.

SIR,

With reference to your letter, No. 29, dated 1st October, requesting my opinion as to whether the Company should again give a donation to the Monegar Choultry, and the amount, with reference to such advantages as might have been derived from Medical aid, furnished by that Institution to the employees of the Company.

Being some time the principal Medical Officer to the Monegar Choultry I am enabled to reply fully to this question.

The advantages that the Company possess, in there being an hospital, so very favorably situated for their taking the benefit of it, is great, and I have the honor to give my opinion, that the donation of Rs. 250 should be converted into an annual subscription to the Institution, which is supported solely by its own funds and public subscriptions.

The hospital possesses the advantages of the rail passing only a few yards from its doors, and the Terminal Station within 400 of them.

There is a most efficient Medical Establishment within its walls, day and night. Is well found with every requisite for the treatment of every case of accidents likely to occur, and all is under the immediate Superintendence of the Surgeon of the 1st District, who, I strongly recommend, should receive a monthly salary of Rs. 70 or 100, which will place the executive Medical establishment of the Company on the most efficient possible footing.

From the increasing number of Europeans connected with the various departments of the Company, at the Terminal Station, with their families, it is an arrangement which is highly desirable, and would be appreciated by them, and I trust it may meet your approbation, and the sanction of Government.

With regard to the 1st part of 2nd para. of your letter, the information, therein required, is embodied in para. of my letter; as to the latter portion, in respect to having every requisite ready for immediate dispatch, in case of accidents, a box, containing every necessary article, will be kept at hand in charge of the Apothecary at the station, who will be prepared to go to any part of the line his services may be required at, accompanied by myself or Surgeon of the 1st District, who will return with the injured parties, and see them comfortably provided for in hospital.

I have &c.,

(Signed) H. W. PORTEOUS,
*Acting Consulting Physician,
Madras Railway Company.*

Madras, 8th October 1856.

(True Copy.)

T. A. JENKINS,
Agent and Manager.

No. 195.

On a letter, No. 691, dated 9th October 1856, from the Agent and Manager of the Madras Railway Company.

OBSERVATIONS BY THE CONSULTING ENGINEER.

The Agent applies, on the recommendation of the Acting Consulting Physician, for sanction to the payment of an annual subscription, to the extent of Rupees 250, to the Monegar Choultry.

in consideration of the many advantages which the Company derive from the proximity of that Institution to their line and workshops, and to the very efficient establishment maintained therein, at all times, for the reception and treatment of cases of injury from accident. He also requests permission to make an allowance of Rupees 70 per mensem to the Surgeon of the 1st District, for his services in affording Medical aid to the Railway servants at Royapooram.

2. These arrangements, Dr. Porteous thinks, will place the executive Medical establishment of the Company on "the most efficient possible footing." I would recommend, therefore, that they be sanctioned.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 14th October 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 353.

Extract from the Minutes of Consultation, dated 21st October 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 14th October 1856.)

The Government sanction the arrangements, recommended by the Consulting Engineer, under which the Railway Agent proposes to pay an annual subscription of Rupees (250) two hundred and fifty to the Moneger Choultry, in consideration of the advantages derived by the Company, from the proximity of that Institution to their line and workshops, and also a monthly allowance of (70) seventy Rupees to the Surgeon of the 1st District, for affording Medical aid to the Railway servants at Royapooram.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

DEPUTY ACCOUNTANT FOR AGENT'S OFFICE.

MADRAS RAILWAY,
MADRAS, 26TH SEPTEMBER 1856.

No. 641.

TO LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

SIR,

I have the honor to request that you will move Government to authorize my applying to the Board of Directors of this Company, to send out, with the least practicable delay, a Deputy to the Accountant.

2. My reason for applying for this further assistance is, that experience has now shown me, that we cannot obtain, in this country, the intelligence and the knowledge for preparing the documents required by the Government.

3. We may, doubtless eventually, be able to instruct Natives of the country to conduct the business adverted to, but as yet our endeavours have totally failed.

4. I have now 12 clerks employed solely in preparing Statistical Statements for your Office, but so difficult is it to make the best clerks, we can obtain, understand the work, that it has been found necessary to prepare the Statements of Trains for July three times; but on examination by the officer in charge of the Department, they have been found so full of errors, that he has been practically compelled to work them out himself—necessitating his working day and night, that is frequently from 6 A. M. to 12 midnight.

5. There has also been some considerable difficulty in obtaining information, in detail, from the Locomotive Department, the Superintendent being necessitated to devote the whole of his time for several days to the subject, to the neglect of other and not less important duties.

6. You will perceive that every exertion has been used to supply the documents called for by you, but our means of supervision are inadequate to the amount of work which we have now to accomplish; and, in the event of sickness of any one of the officers engaged in the Traffic and Account Departments, it would be entirely out of my power to supply these documents.

7. I trust, therefore, that the Government will be pleased to accede to my request.

I have &c.,

T. A. JENKINS,

Agent and Manager.

Submitted (with observations) for the orders of Government.

T. T. PEARS,

Consulting Engineer for Railways.

Madras, 15th October 1856.

No. 198.

On a letter from the Agent and Manager of the Madras Railway Company, No. 641, dated 26th September 1856.

OBSERVATIONS BY THE CONSULTING ENGINEER.

1. The Agent requests authority to make application to the Board of Directors for a Deputy Accountant. I am led to conclude that the Agent's establishment, in the Account Department, is inefficient, from the difficulty that has been experienced, and the great delay that has occurred, in preparing those most important documents, to which allusion has been so often made, viz. the Store Accounts, and those of the Engineer and Locomotive Workshops; none of which have yet been received in this Office.

2. I may observe, moreover, that the returns, called for by me, are not such as should provide work for 12 Clerks, or indeed for more than a portion of the time of one. In fact, they are merely copies of returns, which, in the regular conduct of the Traffic, must be available in the Agent's office—a copy of the return, alluded to in para. 4 of the Agent's letter, is forwarded herewith.

3. The proposed increase to the Agent's Establishment I would recommend to the approval of Government—whether he should be sent from home, or looked for here, may be perhaps left to the discretion of the Directors. My own opinion is, that, if the requirements of

the office were made known by Advertisement, very efficient Accountants will be found here, and ready to serve on smaller salaries than it would be necessary to offer to a man in England.

Madras, 15th October 1856.

T. T. PEARS,
Consulting Engineer for Railways.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 354.

Extract from the Minutes of Consultation, dated 21st October 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 15th October 1856.)

The Government authorize the Agent and Manager of the Railway Company to apply to the Board of Directors, to send out from England a Deputy to the Accountant on his Establishment. They agree, however, with Colonel Pears that very efficient Accountants may be had in this country, on a smaller salary than would be required to be given to a person coming out from England.

(True Extract.)

(Signed) T. PYCROFT,
Chief Secretary.

MISCELLANEOUS.

MADRAS RAILWAY COMPANY,
AGENT AND MANAGER'S OFFICE.

No. 182.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,

Consulting Engineer for Railways.

Sir,

With reference to your letter, No. 55, dated the 8th of February, I have now the honor to forward a Statement, showing the number of work-people employed daily, on an average, in District III, during the half year ending the 31st December 1855.

I have &c.,

T. A. JENKINS,
Agent and Manager.

Madras, 1st April 1856.

Submitted for the information of Government.

J. H. BELL,

In charge of the Office of the Consulting
Engineer for Railways.

Madras, 24th April 1856.

MADRAS RAILWAY, DISTRICT No. 3.

Account of work-people employed daily during half year ending 31st December 1855.

EARTHWORK (INCLUDING BALLASTING.)

	Maistries and Conicopolies.	Coolies.	Women.	Boys.	Carpenters.	Smiths.
Day labor.....	9	909	1,351	114	1	4
Contract.....	0	504	635	0	0	0
	9	1,413	1,986	114	1	4

BRICKLAYER AND MASONRY.

	Maistries and Conicopolies.	Bricklayers and Stone cutters.	Coolies.	Women.	Boys.	Carpenters.
Day labor.....	15	112	138	143	59	5
Contract, including Poiney Bridge..	0	377	765	547	0	0
	15	489	903	690	59	5

PERMANENT WAY.

	Maistries and Conicopolies.	Coolies.	Women.	Boys.	Carpenters.
Day Labor.....	15	187	32	34	15

BRYCE MACMASTER,
Assistant Engineer.

ROBERT PATON,
For Chief Engineer.

T. A. JENKINS,
Agent and Manager.

MADRAS RAILWAY,
MADRAS, 10TH NOVEMBER 1856.

No. 786.

To LIEUTENANT COLONEL T. T. PEARS, C. B.,
Consulting Engineer for Railways.

Sir,

* Vide Report for 1855, page 117. With reference to your letter, No. 311*, dated the 1st September 1855, I have the honor to forward the descriptive statement, furnished by the Locomotive Superintendent, of the large Passenger and Goods Engines, also the heating surface and evaporate power of the Engines, and their proportion of capability at different velocities on various inclines.

I have, &c.,

T. A. JENKINS,
Agent and Manager.

DESCRIPTIVE STATEMENT OF PASSENGER TENDER LOCOMOTIVES.

CLASS A.

No.	Name.
Engines.. { 1	Dalhousie.
2	Harris.

MAKER—MESSRS. STOTHART, SLAUGHTER AND CO., BRISTOL.

Boiler.—The Boiler is 10' 7" long by 4' 10" inside diameter. The plates are $\frac{7}{8}$ " of an inch thick. The distance from the top of rail to centre of boiler is 6' 8".

Tubes.—The tubes are 161 in number, 2 $\frac{1}{2}$ " inches diameter.

Firebox.—The outside casing is 4' 10" in length $\times$ 4' 10" in width to the outside of plates. The height, from centre of boiler to top of box, is 2' 5", and from centre of boiler to bottom of box 5' 0". The plates are $\frac{1}{2}$ " thick.

Inside Firebox.—The length at top is 4' 0" and at bottom 4' 3". The breadth at top is 4' 0" and at bottom 4' 3". The height from centre of boiler to crown of firebox is 9" and the depth from centre of boiler to bottom of box is 5' 0" making the total depth of the firebox 5' 9". There is no partition in these boxes. The water spaces between the inside and outside boxes average 3 $\frac{1}{4}$ " inches, being 4" at top and 2 $\frac{1}{2}$ " at bottom. The whole of the plates are copper. The tube plate is $\frac{3}{8}$ " thick at the part that takes the tubes, and $\frac{1}{2}$ " thick below the level of the boiler bottom. The crown plate $\frac{3}{8}$ " and the front and side plates $\frac{1}{2}$ " thick. The top of the boxes, stayed with 9 wrought iron crown stays, two of which are stayed each with two links bolted to angle irons rivetted to the top of the outside firebox.

Smoke Box.—The length of the smoke box is 2' 6" inside. The cylinder front plate is $\frac{1}{2}$ " thick, and the tube plate $\frac{3}{8}$ " in. thick.

Chimney.—The chimney is 1' 3 $\frac{1}{2}$ " at lower part, tapering to 1' 2 $\frac{1}{2}$ " at top. The height of the chimney is 13' 2" from top of rail.

Blast Pipe.—The blast pipe is 4 $\frac{1}{2}$ " diameter at top, and terminates 3 $\frac{1}{2}$ " below the top of the smoke box.

Steam Pipe.—The steam pipe is of copper, 5" in diameter, and is jointed below the dome to a cast iron pipe descending from the regulator Box which is of brass and placed at the top of the dome.

Framing.—The engine frame is of 1 in. plate, secured to the firebox by bolts fitted into an angle iron rivetted to the firebox, and at the smoke box end by bolts through the smoke box plate and cylinder flanges. The framing is further stayed by a stay from the boiler 3 feet from the firebox, and by the motion bar plate to which it is bolted. The buffer bar is of teak 1' 2 $\frac{1}{2}$ " deep by 5 $\frac{1}{2}$ " thick; the buffers are vulcanite spring buffers.

Springs.—The leading and driving springs are 2' 6" long with 4 $\frac{1}{2}$ " camber when loaded. The trailing springs are 2' 0" long with 3" camber loaded.

Wheels.—The driving wheels are 6' 6" diameter. The breadth of tyres is 5 $\frac{1}{4}$ ". The number of spokes 22.

The leading and trailing wheels are 5' 9" diameter. The breadth of tyres 5 $\frac{1}{4}$ ". The number of spokes 12.

Axles.—The driving or crank axle is 6 $\frac{3}{4}$ " diameter in middle. It has only two carrying bearings 7" diameter by 8" long. The connecting rod bearings are 7" diameter by 4" wide. The diameter of axle, at the part which carries the wheel, is 8 $\frac{1}{2}$ " inches $\times$ 6 $\frac{3}{4}$ " long. The leading and trailing axles 5 $\frac{1}{2}$ " in. diameter in middle. The bearings are 6" diameter $\times$ 8" long, and the part which carries the wheel is 7 $\frac{1}{4}$ " diameter $\times$ 6 $\frac{3}{4}$ " long.

Safety Valves.—There are two safety valves, each of these lever valves 3 $\frac{1}{2}$ " in diameter, having spring balances attached to each lever.

Pumps.—The pumps are worked from the cross head. Length of stroke is 22 inches, diameter of rain 1 $\frac{1}{8}$ ". The ball clacks are 2 $\frac{3}{8}$ " diameter. The inside diameter of supplying pipes is 2 $\frac{3}{8}$ ".

Cylinders.—The cylinders are 15" diameter. The length of stroke is 22 inches. The length of the ports is 11 inches. The width of steam ports is 1 $\frac{1}{8}$ ". The width of exhaust port is 3 $\frac{1}{2}$ " inches. The width of bridges between ports is 1 $\frac{1}{8}$ ".

Slide Valves.—The slide valves are of gun metal, length 1' 2 $\frac{1}{2}$ ", breadth 10 $\frac{1}{2}$ " width of exhaust 5 $\frac{1}{8}$ ", lead 3 $\frac{1}{8}$ ", outside lap $\frac{1}{4}$ ", inside lap $\frac{1}{2}$ ".

Connecting Rods.—The connecting rods, are 6' 5" in. long, from C. to centre. The butt and small ends are fitted with straps and keys for adjusting the brasses.

Eccentric Sheaves.—The eccentric sheaves are of cast iron 1' 2" diameter, 2 $\frac{1}{2}$ " in. wide with 2 $\frac{1}{2}$ " inches throw. They are keyed to the crank shaft.

Eccentric Straps and Rods.—The eccentric straps and rods are of wrought iron, with brass bearings let into the straps. The length of the eccentric rods from centre to centre is 6' 4".

Quadrants.—The quadrants are of wrought iron; and it is by the rising or lowering of these past the centre of oscillation, by means of the reversing gear, that the engine is made to travel backward or forward.

Class B. Coupled Tender Locomotives.

Nos. 3 and 4.

This class, as regards the boiler and general arrangement of gearing, is similar to class A. It differs in diameter of cylinder, in dimensions of slide valves, and in the arrangement and size of wheels.

Cylinders.—The cylinders are 16" in diameter 22" in. stroke. The steam ports are 12" $\times$ 1 $\frac{1}{8}$ ". The exhaust ports are 12" $\times$ 3 $\frac{1}{2}$ ".

Slide Valves.—The Valves are 1' 3" long $\times$ 10 $\frac{1}{2}$ " wide. Width of port 5 $\frac{1}{8}$ ", lead $\frac{3}{16}$ ", outside lap $\frac{1}{4}$ " inside lap $\frac{1}{2}$ ".

Wheels.—The leading and driving wheels are 5 feet in. diameter. The trailing wheels are 3' 9" in. diameter.

Heating surface of Madras Railway Engines, Classes A & B.

Top and sides of firebox 15' 9" $\times$ 4' 1 $\frac{1}{2}$ " = 64.96 feet.

Tube plate 4' 3" $\times$ 5' 9". Area of tubes 2443.443 = 20.00 feet.

Front plate 4' 3" $\times$ 5' 9" area of firebox 2443.100 = 23.43 feet.

* Firebox Surface 108.39

144.355—52

161 Tubes 2 $\frac{1}{2}$ " in diameter 7.06 $\times$ 127 $\times$ 161 = 144 = 1002.47

Total heating surface 1110.86

Area of fire grate 18.06 feet superficial.

Evaporative power.—Calculated at the rate of 100 lbs. of coke consumed per square foot of fire grate area per hour, each lb. of coke evaporating 8 lb. of water, 14,448 lbs. of water $\div$ 9.75 = 1411.84 Gallons $\div$ 6.39 = 231.90 cub. feet of water evaporates per hour.

Supposing the engine to be able to run on a level at the rate of 30 miles per hour, with a train the gross weight of which, inclusive of weight of engine and tender is 300 tons, the weight that the same exertion of power and the same consumption of fuel would move at the same speed on inclines would vary in proportion as shown below, the increased resistance of the Train in an incline being calculated according to its gravitation on such incline.

Speed at 30 miles per hour.

Level.	Incline 1 in 1000.	Incline 1 in 400.	Incline 1 in 200.	Incline 1 in 100.	Incline 1 in 50.
300	270	240	192	144	90

The same exertion of power, at 20 miles per hour, would give the following results on the same inclines.

Tons.....	384	336	288	222	156	102
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(Signed) W. B. WRIGHT, Locomotive Superintendent.
(True Copy.) T. A. JENKINS, Agent and Manager.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 514.

To MAJOR T. A. JENKINS,

Agent and Manager of the Madras Railway Company.

SIR,

I have the honor, under the orders of Government, to request you will be good enough to cause a report to be prepared in your Engineer Department, and submitted on the 1st January, 1st April, 1st July, and 1st October of each year, showing the condition of the work on such portion, or portions, of your line of Railway, as may be at such time open to public traffic.

2. The report should be signed by the Engineer in charge, and countersigned by your Chief Engineer, should certify as to the general condition of the line, that the whole of the bridges, culverts, &c., as well as other works of masonry, have been examined, at least once during the past quarter, by a competent Officer of the Department; and should state, generally, whether any repairs, extensive or otherwise, have been found necessary during that period.

3. I take the opportunity of requesting that, irrespective of the report now called for, on occasions of serious injury to any of the works on your line, special and immediate report may be made, with approximate estimate of the cost of repair.

I have, &c.,

(Signed) T. T. PEARS,

Consulting Engineer for Railways.

• Madras, 18th. October 1856.

REPORT ON STATE OF THE WORKS.

RAILWAY DEPARTMENT,
CONSULTING ENGINEER'S OFFICE.

No. 189.

To T. PYCROFT, Esq.,

Chief Secretary to Government, Fort Saint George.

SIR,

I have the honor to submit, for the information of Government, the following report of an inspection which I have lately made of the works in progress on the line of Railway between Madras and Reypoor.

2. I left Arcot on the 18th of July, and being joined by Mr. Bruce, the Chief Engineer, on the 21st near Vellore, was accompanied by that Gentleman as far as the proposed Western Terminus of the line.

3. The whole line has been divided by the Railway authorities into 17 Districts, each being about 25 miles in length, and constituting a separate charge. Three such Districts have been considered as a Division, and placed under the general charge of the Senior Engineer of the three.

4. It has been lately proposed to relieve the Divisional Engineers of all executive duties, by giving to each such Division an additional Engineer.

5. It will be remembered that the whole of the works on the line are being carried out by the Company's own Officers, without the intervention of Contractors. The Engineering Staff of the Company is therefore performing those duties which are usually divided, under Railway management, between the Company's Engineering Staff and the Contractors Executive Staff.

6. To render the state of the works more intelligible, while speaking of the state of the several Districts, I have caused the line and the Districts therein to be marked on the accompanying outline* map.

* Will be forwarded separately.
Districts 1, 2 and part of 3, 65½ miles in all.

7. Districts 1, 2, and part of District 3 (65½ miles.) This portion of the line was thrown open to the public on the 1st of July last, and its condition then reported upon. I have therefore only to observe that certain of the stations, "Red Hill Road," "Companypettah," "Banaveram," and "Arcot," were not in so forward a state as might have been wished or expected. These buildings appear to have been unduly neglected of late, probably in consequence of the pressure upon the Engineer's Department, consequent upon the promised opening of the line. Temporary buildings had been constructed for the use of the Traffic Department.

8. District 3, about 7 miles. This portion of the line, lying between the Arcot and Trivellum Stations, includes the Poiney bridge. I found nearly the whole of this ready for the permanent way, of which indeed some portion was laid.

9. Some work yet remained to be done in a heavy rock cutting, 2 or 3 miles east of the Poiney bridge. A stone bridge of one arch, to carry the rail over the trunk road between Arcot and Chittoor, was in progress; and several more works of masonry, and part of the earthwork beyond the river, were yet incomplete.

10. Work was going on at all these points, and it seemed to me that, in 3 months, this portion of the line might be completed. The Poiney bridge is complete, and is in every respect a highly creditable work. It is built—as are all the works of masonry—for a double line of way, and consists of 56 segmental arches of 30 feet span. The piers, averaging about 12 feet above the river's bed, are based upon brick wells protected by massive stone inverts.

11. For material, in this as in most of the works on this and the adjacent Districts, granite, found in the neighbourhood, and roughly dressed, has been judiciously selected and skilfully applied. The work has been well executed, and when the accounts shall have been fully rendered will, I have reason to believe, prove to have been carried out at very moderate cost.

12. District 4, between the Poiney and Goriattum river. An engineer was appointed to this district in June 1854;—a portion of the survey received in May 55;—and the land made over and the Agent authorized to commence work thereon, in August 55.

13. I have had occasion to observe, more than once, on the unsatisfactory rate of progress in this district. Marked improvement appears to have taken place lately in this respect. The Contractors for earthwork, through whom it has much time had been lost, have been nearly all dispensed with; and the Engineer in charge anticipates great advantage from the adoption of the day labour system.

4. Up to the end of June, nearly 5,00,000 yards of earthwork had been thrown up on the district, by far the greater portion being on Section 1.

Of masonry, up to the same date, between 6 and 7,000 yards had been executed—chiefly in same section.

Goriattum Bridge.

Extract Minutes of Consultation, Financial (Railway) Department, No. 254.

Progress on the work not hitherto satisfactory.

16. There are three important Stations upon this District, Trivallum, Vellore, and Goriattum; nothing has been done towards these buildings. The bridge across the Goriattum river is the only work of magnitude in the District, consisting of 24 arches of 30 feet. The estimate for this was sanctioned by Government on the 16th October 1855.

17. The progress, made on the work hitherto, is certainly not satisfactory, several piers for the land arches have been founded and raised some feet above ground—none of the foundations yet laid in the bed of the river. The Engineer expected, it seems, by deferring the prosecution of the work, that the water in the river's bed would subside, and considerable saving be thus effected in the maintenance of dams, in baling, &c. It does not appear probable that any change for the better in this respect can be looked for before the end of the North East Monsoon, and so great delay never having been contemplated, it has been resolved to push forward the work at once with vigour.

18. I think there is certainly promise of satisfactory progress for the future in this District, and that it is probable the 1st section, i.e. as far as Vellore, may be ready for Traffic very early next year.

Station buildings should be proceeded with.

Number of coolies employed on the district, 6,502.

19. It would be, however, as well to call the attention of the Agent to the propriety of pushing forward the Station buildings on this as well as other parts of the line; taking care that their completion keeps pace, somewhat more nearly than it has hitherto done, with the progress of the road itself. The number of coolies employed daily on this district, during the month of July, was 6,502.

DISTRICT 5.

District 5.

20. An Engineer was first appointed to this district in June 1854, but was disabled by a severe accident; and the progress of the work much retarded in consequence of there being for some time no Engineer available to take charge.

Not much work done yet.

21. Little work has yet been done on this District;—about 1,00,000 yards of earthwork, and a very small quantity of masonry had been executed up to the end of June.

Difficulty in procuring labour.

22. There has been difficulty, as yet, in procuring labour in this District even for the earthwork. There is, however, promise of improvement in this respect. The earthwork is, generally speaking, not heavy.

Palaar Bridge.

23. The only important work of masonry is the bridge across the Palaar, consisting of 24 arches of 30 feet span; arrangements had been made at the time of my visit for the commencement of this work, to the immediate charge of which the Superintendent lately employed on the Poiney bridge has been appointed. Nothing has been done to the Station buildings in this District. The number of coolies employed daily upon this District, during the month of July, was 2,532.

Number of coolies employed 2,532.

District 6.

Progress good.

DISTRICT 6.

24. The progress on this District has been for some months past very satisfactory. The amount of work done up to the end of June was

Earthwork.....	yards 3,35,000
Masonry.....	540

25. The earthwork is being executed wholly by day labour. The supply of labour is abundant, and the crowds of people—men, women, and boys—presented a most animated scene.

26. The masonry has been only lately taken in hand, but a considerable quantity of materials is prepared, and there appears every promise of steady and rapid progress on this portion of the work.

Work well done.

Number of people employed, 7,680.

27. The work, as far as it has gone, has been not only quickly, but remarkably well done also. The number of coolies employed daily on this District, during July, was 7,680.

DISTRICT 7.

District 7.

28. This was one of the first Districts to which an Engineer was appointed.

State of the work not satisfactory. Difficulty in procuring labour.

29. The present state of the work is certainly not satisfactory. There appears to have been at all times a great difficulty in procuring labour here. This is attributed mainly to the unhealthiness of the climate.

Attributed to climate.

30. There is no doubt that sickness has prevailed occasionally on this portion of the line; and especially, and in a singular manner, in the valley of the Pennaar.

Labour abundant on district 8.

31. The adjacent District, No. 8, near the foot of the Shervaroy Hills, has suffered however in a similar manner; its situation is likely to render it, if anything, the more unhealthy of the two. Nevertheless there, as well as on District 6, labour has been generally abundant; and it would be neither just nor reasonable, in my opinion, to attribute wholly to this cause the difficulty in procuring labour on District 7.

32. In the management of Public works in this country, it is not always easy to discover the latent influence by which the efforts of the most zealous European Superintendent may be thwarted.

Possible causes of the difficulty.

33. Such influence, whether due to unusual exactions—harsh treatment—or even injudicious strictness, on the part of native Subordinates, may be in silent operation for months without the Officer in actual charge knowing anything about it.

34. The most important work of masonry, on this District, is a bridge of 18 arches of 30 feet span across the Pennaar. This was sanctioned on the 4th January last. A difficulty in procuring bricklayers has greatly delayed it, but it seems to be making fair progress at last. The average daily number of coolies on this District, during July, was 2,835.

Pennaar Bridge.

Number of people employed, 2,835.

DISTRICT 8.

District 8.

35. The first (Eastern) Section of this District terminates near the Shervaroy Hills Station, and is very nearly complete in all respects, even the ballasting having been spread to a very considerable extent.

Mooroor pass.

36. The second Section lies over the Mooroor ridge and down the Pass. A good deal of work, both earthwork and masonry, has been done on the first portion of this also; but in the heavier excavations on the Pass, a great deal of work yet remains to be done.

37. Involving, as it does, a large amount of blasting, this portion of the work must necessarily consume much time. There seems, happily, no difficulty in procuring the required labour.

Blasting.

38. The Engineer in charge spoke of a gang of 70 or 80 men having come from the district in the neighbourhood of the Cauvery, seeking employment in blasting rock by contract; and he described them as an exceedingly useful and satisfactory party of workmen. In consequence of sickness, they had lately left in a body on a few week's leave.

39. As far as the simple operations connected with the blasting of rock are concerned, no difficulty seems to be experienced throughout the line. The practical part of the business is understood, and habitually performed, by many natives, and easily learned by others. In the principles which should guide them to the attainment of the greatest effects by the smallest amount of labour, they are generally very ill informed.

Prospect satisfactory.

40. The prospects of the work on this District are, upon the whole, satisfactory.

41. The first section which, with the exception of the permanent way, is complete, constitutes, it will be observed, the last link in the chain of communication between Madras and the Shervaroy Hills Station.

42. The line, opened thus far, would not only accommodate the Traffic from the Baramahl and the Shervaroy Hills, but would be within 25 or 30 miles of the town of Salem; and it would be of no great consequence if the opening of the Moroor pass were even delayed until the completion of the line to Coimbatore.

Pass up the Shervaroys.

43. I may observe here that the construction of a road from the Shervaroy Hills to the Railway at Mullapooram, a trace of which was made under the sanction of Government some time ago, appears to have been for the present suspended. Considering the difficulty of getting up to the Hills from the Salem side, the delay which may yet occur in carrying the rail down the Pass to that side, and the peculiar advantages which, as I am informed, the line to Mullapooram offers for the construction of a good road, it would be, I think, greatly to be lamented, if the Government should feel it necessary to deny to the public at large, and to the inhabitants of the Shervaroy Hill in particular, this boon. At the same time, I must add that, strongly advocating as I have ever done a fair introduction of the toll system, I cannot conceive any more equitable demand on the public than a toll levied upon such a work as this, executed at the cost of the state for the benefit of a particular locality. The average number of coolies employed daily on this district during July was 4,528.

Fair occasion for a toll.

Daily amount of labour, 4,528.

DISTRICT 9.

District 9.

44. Extends from near the foot of the Moroor pass to the neighbourhood of Macdonald's choultry. The whole has been staked out, the ground for the most part made over, and work has been commenced. The Engineer in charge states that there is every appearance of abundance of labour. The average number of coolies employed daily on this district, during July, was 3,306.

Average number of Coolies employed, 3,306.

DISTRICT 10.

District 10.

45. Extends nearly to the Cauvery river. The course of this portion of the line is not finally determined upon. It has been proposed by the Railway Chief Engineer to carry it across the high ground to the South of, and not far from, Sankerrydroog.

Course of the line not finally determined.

46. I have been under the necessity of requesting that trial may be made upon a line to the North; but I shall have occasion shortly to make special report upon this subject. The average number of coolies during July was 420.

Average number of coolies employed, 420.

DISTRICT 11.

District 11.

47. Includes the large bridge over the Cauvery; sanction was given on the 14th December last for the collection of materials for this work, but nothing has yet been done. This is so far fortunate; since should an alteration in the direction of the line, on district 10, be found desirable, the position of the bridge may be changed.

Promise of good progress.

Average number of coolies employed, 3,500.

48. The works on this District have been commenced and promise well. During June, earthwork to the extent of 40,000 cubic yards was executed; and the Engineer reports favorably of the apparent supply of labor. The average number of coolies employed daily on this District, during the month of July, was 3,500.

DISTRICT 12.

District 12.

Not yet commenced.

49. No work is yet done. The Engineer has only lately taken charge and the surveys, &c., are not yet forwarded—though, as I understand, completed. The works are likely to be light. No anxiety need be felt regarding the completion of the work, on these two last Districts—the nature of certain portions of the work on the line, on both sides, rendering it nearly certain that they will be completed in sufficient time.

DISTRICT 13.

District 13.

50. This District lies about Coimbatore, and extends Westward to the neighbourhood of Walliar. The first, and part of the second section, lie over an open undulating country, involving several heavy and hard cuttings, no very large works of masonry, but many minor works of drainage—a portion of the second section lies in the Walliar jungle.

51. The Engineer entered upon his duties here in March 1854. Work of construction was not actually commenced until January 1855.

Amount of work done.

52. Nearly the whole of the 1st section and a part of the second are completed, as far as regards the earthwork, and masonry. Work is now going on, in the jungle, under disadvantages that were to be anticipated, considering the unhealthy character of the locality, and the distance that the labourers have daily to go to their work.

Walliar jungle.

Have daily to go to their work.

Progress.

53. The progress on this District has been, from the commencement, remarkably steady. By the end of June, about 7,00,000 yards of earthwork and upwards of 10,000 yards of masonry were reported. The work of both kinds has been well and carefully executed. The bridges are chiefly of stone, with brick arches.

Work well done.

54. A portion of the line has been ballasted, and a beginning made with the permanent way.

Desirable to get an Engine at work.

The average number of coolies employed, 3,460.

55. A heavy cutting, in the Walliar jungle, will yet occupy some time: but this and other similar works, on the next District, which offer serious obstacles to an early junction of the two, would be much facilitated, if the Chief Engineer could succeed in his project of placing a light Engine on the line, near Coimbatore. The average daily number of coolies employed on this District, in July, was 3,460.

DISTRICT 14.

District 14.

56. Government have had occasion more than once to remark on the delay in the preparation of the surveys, &c., in this District. These have been now furnished, and within the last few months the work has made a good start.

57. Earthwork to the extent of about 1,70,000 yards had been executed up to the end of June; and there is every promise of an abundant supply of labour, and continued satisfactory progress.

58. The works of masonry are not yet commenced. The Chief Engineer anticipates a good supply of cheap and suitable stone.

Workshop.

59. I had an opportunity of visiting the workshop, under charge of the Resident Engineer at Palghat. The work seems to be carried on in a business-like style; and the general appearance of order about the shops is highly creditable. The number of coolies employed daily on this District, during the month of July, was 2,500.

DISTRICT 15.

District 15.

Thrown back in consequence of the illness of an Engineer.

60. This District, in consequence of the Engineer first placed in charge being compelled to take leave, sick, is much behind the others; an Engineer has lately taken charge.

61. Work has been commenced on one section; the line on the other not being yet fully staked out. There is not much heavy work in this district; and no important work of masonry.

DISTRICT 16.

District 16.

Character of the country.

62. Extends from near Putamby to the neighbourhood of Pudian-gady.

Large bridge.

63. The hilly nature of the country has rendered it necessary to follow generally the windings of the river; and the laying out of the line has been a matter requiring considerable care and skill.

Plan not yet submitted.

64. Some of the earthworks are heavy, and rock is occasionally met with. A large bridge will be required across a stream, which, draining the hills near Manaur, will be seen to fall into the Ponany river about 7 miles below Puttamby.

65. No plan and estimate for this bridge have yet been submitted, but I understand that the Chief Engineer contemplates the use of timber. The nature of the country demands that the bridge be very much on the skew—the river bed is sand, to a considerable depth—the stream in the freshes very rapid.

District 17.

DISTRICT 17.

66. Not much progress has yet been made in this District. Up to the end of June, about 24,000 yards of earthwork had been executed—no masonry. A good beginning has been made—labour for this portion of the work promises to be abundant—works of masonry will be commenced upon as soon as the monsoon weather clears off. The average daily amount of labourers employed, 1,756.

67. Includes the Beypoor station. Earthwork was commenced here before the monsoon, and has been in progress during the rains. About 70,000 yards had been thrown up at the end of June, and the rate of progress, I am informed, has been on the increase.

68. The banks thrown up previously to the monsoon stood the rains remarkably well.

69. It is contemplated to use laterite stone in all the minor works of masonry; and a considerable quantity of this has been prepared, and the work will be commenced upon as soon as the weather clears.

Bridge across the Kuddulhoondy.

70. With the exception of the bridge across the Kuddulhoondy Estuary, 2 or 3 miles from Beypoor, the works in this District are light. The plan for that work has not yet been submitted, in a shape that admitted of its being laid before Government.

Works generally light.

71. The Earthwork on this District is generally light; and I should think the whole, together with most of the minor works of masonry, would be finished before the next rains.

72. The bridge across the Kuddulhoondy, on whatever plan constructed, will, I fear, be to some extent a source of delay in the completion of the entire line.

Little done to the station at Beypoor.

73. To the terminal station at Beypoor very little indeed has been done; and no plans for buildings connected with it have been received from the Agent.

Workshops.

74. There are Workshops at Beypoor, under the charge of the Resident Engineer, on a smaller scale apparently than those at Palghat, and with less convenient accommodation; but the work is here also evidently conducted with care and economy. It consists chiefly in the making up of carts, wheel barrows, and implements required in the construction of the work.

Difficulty in procuring iron.

75. The Engineer in charge complains of difficulty in procuring iron, the Railway store department at Beypoor not being yet, it seems, in a condition to supply him, and none to be had at reasonable price from any other quarters. The average amount of labourers employed, 1,781.

76. It may be well to offer a few remarks on the portion of the line, generally, which lies within the limits of the District of Malabar.

77. The country is peculiar in its features, in its climate, and in its people.

Peculiar character of the District of Malabar.

78. The character of the country has called for something more of care and skill in laying out the line than are required in the more open, level plains, East of the ghaut.

General course of the line in Malabar.

79. The line follows, generally, the course of the Ponany river, passing in some places close along its bank; till it reaches a bend a few miles above Ponany, where it strikes off in a northerly direction up the coast to Beypoor.

80. The earthwork consists of a succession of banks, and short sharp cuttings. The former almost always through valuable rice land, the latter through the intervening ridges or spurs, the character of which has turned out to be much more favorable for working, than was expected.

Nature of the soil.

81. In many cases where laterite or a harder rock were reasonably expected, a fine red loam has been found—easily worked, and a good material for the banks.

Proposed to spare the rice land as much as possible.

82. The Chief Engineer has most judiciously determined, in all possible cases, to construct the banks of the material taken from the cuttings, and thus to obviate, as much as possible, the necessity of taking large breadths of valuable rice ground, with a view of constructing the former from side cuttings.

83. I would here submit for the consideration of Government, whether it would not be well at once to instruct the Agent to make all the banks lying on garden or rice ground, in Malabar, from the adjacent cuttings; with the understanding that Government will pay any additional cost that may be shown to have been incurred in constructing them thus, instead of from side cuttings.

84. I believe the saving to Government will be great, not only in the compensation which would otherwise have to be paid to the proprietors for the additional breadth of valuable land; but in the revenue that would be lost thereby.

85. Should this be determined upon, the Railway Engineers will (should there, after making their cuttings the required width, not be sufficient material for the adjacent bank) merely have to cut an additional width, sufficient for a double line of way, which it is supposed will be required some day; and to continue their excavation, at the same place, until the bank is completed.

86. The continuation of the cuttings, under such circumstances, to a width sufficient for a double way, the Railway Company may fairly be called upon to do without compensation. Any work beyond that—necessary to complete an adjacent bank, and so to save the Government the sacrifice of valuable ground—may be compensated for, as proposed above.

87. Experience has already established two points satisfactorily. 1st. That earthwork can be carried on, though at an enhanced cost, during the rains. 2ndly, That there is in that department abundance of labour to be had in Malabar. It remains to be seen whether the works of masonry will be carried on under equally favorable circumstances.

Conclusions.

88. In conclusion, the present state and future prospects of the work may be thus summarily described.

89. Work is going on in earnest on every portion of the line, with the exception of Districts 10 and 12; there being on the former a doubt regarding the course of the line, on the latter the surveys not yet completed.

Labour generally sufficient.

90. The opinion of the Engineers, with very few exceptions, is that the supply of unskilled labour will be sufficient to carry on the works with tolerable expedition.

91. Taking (from the portion of line lately opened) 50,000 yards of earthwork, and 800 of masonry, as the average per mile, the amount of work on the 345* miles yet to be completed, between Arcot and Beypoor, will be:

Earthwork.....	17,250,000 yards.
Masonry.....	2,76,000 do.

Of this, by the end of June there was completed about

3,200,000 yards of earthwork.

35,000 yards of masonry.

or about $\frac{1}{5}$ of the earthwork, and $\frac{1}{20}$ of the masonry.

92. The last report (June) showed a total executed on these 14 districts of about

4,60,000 yards of earthwork.

3,000 yards of masonry.

93. The largest amount executed on any District during that month, was

Earthwork.....	84,850 yards.
Masonry.....	913 do.

and although this does not come up to what has occasionally been done on other Districts, if we allow to each of those now unfinished a monthly performance of 85,000 yards of earthwork and 900 of masonry, the whole line, up to the formation level, might be finished in 18 months, rails being laid on successive portions as completed, or as might be considered advisable, with reference to the position of those portions.

94. Lastly, if we look at the past progress, and refer to the commencement of the undertaking on the part of the Railway Company, we cannot pronounce it satisfactory. One cause of delay was, without doubt, the want of Engineers; but if the Company must needs err at all, they err on the right side, in an undue anxiety to select their men with care; and not to send them out until actually required.

95. It will have been seen that some portions of the line have been, from this cause, only lately taken in hand.

96. The preliminary operations of surveying, &c., necessarily occupy more time when placed in the hands of a man just landed from Europe, than they will when conducted by the same man after a year's experience of the country.

97. Again, among a large number of men appointed to a work of this nature, there will always be degrees of experience, ability and of zeal; and the progress, on the several portions of the work, will be found necessarily to differ, from this, as well as from other causes.

Future prospects satisfactory.

98. But putting aside past difficulties and shortcomings, I consider the future prospects of the work satisfactory. A uniform system of work, of supervision, of accounts has been established. The Engineers are at work at nearly all points on the line. The amount of work executed, during the month, is on the increase; and my own impression is that we are justified, by present appearances, in expecting to see the line open as far as the Shervaroy Hills by the end of 1857, to the other coast by the end of the following year.

99. It will be seen, from the above statements, that the total number of coolies, including women and boys, employed on the 14 unfinished districts (4—17 inclusive) was 40,790. The numbers are taken from a memo., with which the Chief Engineer was good enough to furnish me, who states, at the same time, that on districts 5, 9, and 11 the numbers have been, since then, on the increase.

100. Before closing the Report, I beg to call the attention of Government to the following points.

101. The Goriatum Station, being 15 or 16 miles from that of Vellore, is fixed to the Eastward of the river of that name, and the opening of the line, to that point, is, therefore, independent of the completion of the Railway Bridge across that river.

102. The importance of the Goriatum Station may be great, but depends upon the completion of a good Pass up the neighbouring ghauts, and the perfecting of the road to Policondah. I believe that great improvements have been lately effected on an old Pass, towards Palmanair, known as the Synegoontolah; but I am not aware if any thing has been done towards the tracing, or construction, of a thoroughly good cart road up the ghauts near this point.

103. Another point, to which I would request the attention of Government, is the pass up to the Kangoondy Zemindary, described in my Report, No. 32, dated the 16th September 1853.

104. By this Pass I proposed taking the branch line to Bangalore. The construction of the branch is, however, postponed by order from home. I would, therefore, earnestly recommend to the consideration of Government, the improvement of the present road.

105. In the course of my late tour, the Railway Chief Engineer and myself struck off from the line at a point near Vaniembady, and rode up this Pass, staying two days at Coopum and meeting there Mr. Puckle, Executive Officer in the Public Works Department of Mysore.

106. I believe that, should the Government be disposed to improve the road as far as the frontier, i. e. about 12 or 15 miles beyond Coopum, the Mysore Government is quite prepared to undertake the construction of a road through the Baitmungalum and Maloor talooks, in order to place that part of the country into close communication with the rail at Vaniembady.

107. Government will observe how large a tract of country there is lying between the Palmanair and Sholagherry Passes, with no means of getting into the low country, or on to the Railway, but by a long détour to one or other of those Passes.

108. It is not merely for the benefit of the people of these districts as exporters, but for the promotion of trade generally, and especially by the cheap conveyance of salt, that the improvement of this Pass seems to be a matter worthy of consideration.

109. So long as there is a prospect of a railroad up the same Pass, the Government might not consider it desirable to construct a first class road, complete in bridges, &c.; but I believe that a very great and permanent improvement may be made on it at a comparatively small expense—improvement that is required as much on the road between the Pass and the present Trunk Road at Nutrumpully, as on the Pass itself. I trust, therefore, the Government will permit the subject of improving the road to be reported upon in the Public Works Department.

110. In conclusion, I have to report that I took the opportunity of examining, in company with Mr. Bruce, the country lying between the present line and the Neilgherry Hills, with a view to the construction of a branch. I am now engaged in the consideration of the subject proposed to me in an Extract from Minutes of Consultation, No. 907, dated 9th June 1856, and shall notice the result of my observations, on this occasion, in a Report which I hope shortly to submit upon the line of road proposed by Captain Francis with reference to the Neilgherry branch.

I have &c.,

T. T. PEARS,

Consulting Engineer for Railways.

Camp Ootacamund, 27th September 1856.

FINANCIAL (RAILWAY) DEPARTMENT.

No. 446.

Extract from the Minutes of Consultation, dated 6th December 1856.

Read the following letter from the Consulting Engineer for Railways.

(Here enter 27th September 1856.)

1. In the foregoing letter the Consulting Engineer for Railways furnished a detailed Report of his late inspection of the works in progress on the line of Railway, between Madras and Bey-poor.

2. The work is represented to be going on in earnest on every portion of the line, with the exception of districts X and XII. In these two Districts little or nothing appears to have been effected. In the former, owing to the course of the line not being finally determined upon, a trial is being made upon a line to the North of Shankerrydroog, and Colonel Pears purposes to make a special report on the subject shortly. This has since been received, and the present line ordered to be adhered to. In the latter District no work has yet been commenced, in consequence of the Engineer having only lately taken charge, and the Surveys, &c., not being completed. Colonel Pears states that the works are likely to be light, and that no anxiety need be felt regarding the completion of the work in sufficient time.

3. To the Terminal Station at Beypoor also very little has been done, the plans for buildings connected with it not having yet been received from the Railway Agent. The workshops there appear to be on a smaller scale than those at Paulghaut, and with less convenient accommodation, but the work is said to be conducted with care and economy. Favorable mention is made by Colonel Pears of the workshop at Paulghaut, where the work is represented to be carried on in a business-like style, and the general appearance of order about the shops to be highly creditable.

*Extract Minutes Consultation,
27th November 1856, No.
434.*

4. The Government have already authorized the Station buildings proposed by the Railway Agent at Vellore being commenced at once; they resolve now, as suggested by the Consulting Engineer, in para. 19 of his Report, to call the Agent's attention to pushing forward the buildings on this as well as other parts of the line, taking care that their completion keeps pace somewhat more nearly than it has hitherto done with the progress of the road itself.

5. It is observed that the progress in district VI has been particularly satisfactory, the work, so far as it has gone, is represented to have been not only quickly, but remarkably well done. There seems to be every promise of steady and rapid progress on the remaining portion of the work.

6. Para. 43 of the Consulting Engineer's Report, respecting the construction of the road, from the Shervaroy Hills, to the Railway at Mullapooram, which is stated to have been suspended for the present, will be communicated to the Public Works Department for consideration.

7. The Government notice with satisfaction the progress on District XIII, which is stated to have been from the commencement remarkably steady. Nearly the whole of the 1st Section and a part of the second are completed, as regards the earthwork and masonry—both of which have been well and carefully executed. A portion of the line has been ballasted, and a beginning made with the Permanent Way. Work is reported to be now going on in the Walliar jungle, under disadvantages arising from the unhealthy character of the locality, and the distance that the laborers have daily to go to their work.

8. In para. 82, Colonel Pears notices that the Chief Railway Engineer has most judiciously determined, in all possible cases, to form the banks in Malabar, of the material taken from the cuttings, and thus obviate, as much as possible, the necessity of taking large breadths of valuable rice ground for constructing them from side cuttings. The Government fully approve this proceeding, and resolve, as suggested by Colonel Pears, that the Railway Agent be directed to cause all the banks lying on garden, or rice ground, in Malabar, to be formed from the adjacent cuttings—with the understanding that any additional cost, that may be thereby incurred, will be borne by the Government.

9. The Government also approve Colonel Pears' suggestion, that if after the cuttings have been made of the required width, there should not be sufficient material for the adjacent bank, the Railway Engineers might cut an additional width, sufficient for a double line, which may be required at some future period, and continue their excavation at the same place until the bank is completed. They concur with Colonel Pears that, in regard to the continuation of the cuttings, under such circumstances, to a width sufficient for a double way, the Railway Company may fairly be called upon to undertake the work without compensation. The Government desire that the Railway Agent may be informed accordingly.

10. The present state and future prospects of the work are summarily described in para. 88, et sequitur, of the report. It is computed that, of the amount of work on the 34½ miles yet to be done, between Arcot and Beypoor, about one-fifth of the earthwork and one-eighth of the masonry were completed by the end of June last. It is remarked that the Engineers—with very few exceptions—are of opinion that the supply of unskilled labor will be sufficient to carry on the works with tolerable expedition.

11. Colonel Pears considers the future prospects of the work satisfactory. He states that a uniform system of work, of supervision, and of accounts has been established—and that the Engineers are at work at nearly all points on the line. The amount of work executed, during the month, is on the increase, and he expects to see the line open as far as the Shervaroy Hills by the end of next year, and to the other coast by the end of 1858.

12. Copy of paras. 100 to 109 of the Consulting Engineer's Report will be furnished to the Public Works Department, where the subject of improving the roads, therein referred to, will be considered with reference to the remarks of Colonel Pears.

13. Ordered that a copy of the Consulting Engineer's Report, and of these proceedings, be forwarded to the Honorable the Court of Directors by the next Mail.

(True Extract.)

(Signed) T. PYCROFT,

Chief Secretary.

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