

RAILWAYS (INDIA). 15854

COPIES of LETTERS and REPORT upon Proposed Railways in India.

[PRESENTED TO PARLIAMENT BY HER MAJESTY'S COMMAND.]

Ordered, by The House of Commons, to be Printed, 5 March 1847.

COPY of a LETTER from the Secretary to the Government of India to the Chief Secretary to the Government of Madras.

Sir,

Fort William, 24 January 1846.

With reference to the papers which accompanied your letter, No. 243, dated 5th November last, I am directed by the Honourable the President in Council to transmit to you, for the information of the Most noble the Governor in Council, the accompanying copy of a Report of the 30th ultimo, from Mr. F. W. Simms, Civil Engineer, containing his opinion on the proposed line of railroad from Madras to Wallajahnugger. A copy of this Report has been transmitted to the Honourable Court of Directors.

I have, &c.

(signed) T. A. Bushby,
Secretary to the Government of India.

REPORT upon the proposed MADRAS and WALLAJANUGGER RAILROAD.

From F. W. Simms, Esq., Director of the Railway Department, to G. A. Bushby, Esq., Secretary to the Government of India.

Sir,

Camp at Norungabad, 30 December 1845.

In obedience to the commands of the Supreme Government, contained in your letter of the 13th instant, I have the honour of submitting my opinion on the proposed line of railroad from Madras to Wallajanuggur, founded upon an examination of the documents submitted for my perusal. Before I refer to the immediate subject of this report, I will take this opportunity of expressing my opinion (so far as nearly four months' residence and observation in this country have enabled me to judge) upon several important subjects named by the Honourable the Court of Directors in their Minute of the 7th May last.

1. As to the periodical rains and inundations.

I do not expect that, with a judiciously selected and well constructed line, any serious injury to the works may be anticipated from this cause; nothing but what a small annual outlay will set to rights.

2. The continued action of violent winds and influence of a vertical sun.

Suitable arrangements in the construction of the works will overcome any difficulty arising from these causes as to the line itself: their effects will be more felt in working the trains, especially with the wind at high velocities. No fears, however, need be entertained upon this subject as to the ultimate result.

3. The ravages of insects and vermin upon timber and earthwork.

If the information I have received in India be correct, that the destructive action of insects upon the teak and ironwood of Arracan amounts to nothing or next to nothing, that question is at once disposed of; but should further investigation show that such is not the fact, recourse must be had either to the use of stone or to the employment of one or more of the various preparations for timber now in use in England, which it is probable may also be found desirable on the score of economy, to render the timber more durable. This however, at present, is by no means certain. To the earthwork no mischief can arise from this cause, if the overseers and labourers on the line discharge their duties in a proper manner.

4. The destructive effects of the spontaneous vegetation of underwood upon earth and brickwork.

To obviate this evil nothing more is required than a faithful discharge of the duties of the overseers and labourers in rooting up every germ of such vegetation as soon as it appears.

5. The uninclosed and unprotected tracts of country.

A fence similar to our quick fences in England will answer through the open and cultivated parts of the country, which may or may not be employed through the districts covered with jungle, as circumstances may require. Such fences may be formed of the plant called the beranda, or the Mysore thorn, or the prickly pear; all of which, and perhaps many others, if kept well trimmed, would make a suitable fence.

6. The difficulty and expense of securing the services of competent and trustworthy engineers.

The difficulty, I make no doubt, will be overcome by a suitable arrangement at an early period. Such, I think, would be the sending of a few native or half-caste young men to England, to be trained, until some engines are ready to be sent to India. Upon their return in charge of such engines, and under the superintendence of one or two English engineers, there would be laid the foundation for the training of as many native engine-drivers as might be required. Such native youths, while in England, should not only be instructed to drive an engine, but to repair them when put of order.

Such are my present opinions on the foregoing subjects; and if any changes shortly take place therein, I shall have an opportunity of stating them when referring thereto in my Report that myself and Captains Boleau and Western will have the honour to present to the Government of Bengal, upon the completion of our present examination of the country as to its capabilities for a line of railway from Calcutta to the North-west Provinces.

I have thought it necessary to discuss the natural difficulties that might be expected in the introduction and working of railways in India in general, before entering upon the immediate subject of my Report, namely, the proposed railway from Madras to Wallajahpet, which I will now consider under the following heads:—

1. Its expediency.
2. Its practicability.
3. Its bearing upon a general system of railroads for India.
4. The mode of construction and cost.
5. The income and probable return.
6. Terms of, and period of, concession.

1. Its expediency. Little need be said on this point; for after the experience we have had in Europe, in the construction of common highways and of railroads, and of the result of their working, there can be no doubt that a railroad is the most desirable of all modes of communication known at the present time; and whenever it appears that a new highway is required for a numerous body of people and of a considerable trade, a preference should be given to a railroad, although there may be only a reasonable ground to suppose that the existing traffic will pay but a small interest on the capital expended, in addition to the working expenses of the line; for experience shows that, in most cases, the additional amount of traffic created by the existence of so rapid a mode of transit, realizes a remunerative return; and from all that I have as yet seen of India, and learned of its circumstances and condition, I see no reason to doubt that there will be a similarity in the result.

2. Its practicability. Of this, in the absence of a personal survey, I can only judge from the documents laid before me, and from them I conclude that there can be no doubt whatever upon the subject. The mode of its construction and its cost I will presently consider.

3. Its bearing upon a general system of railroads for India. This is a subject of importance in a new country where this new mode of transit is to be introduced for the first time, and where it will be desirable that every line, however short, should have reference to a general system of railways, of which it will ultimately become a part. So far as I can judge from the papers before me, and an examination of a general map of India, it appears that but little, if any, objection can be made to the proposed railway in this respect, provided that the mode of its construction, &c., be consistent with what may ultimately be adopted for the whole of the lines.

4. The mode of construction and cost. This should not be left to the opinion of any engineers who may chance to be employed by the Railway Company, as they are too frequently induced to adopt inexpensive expedients, wise or unwise, to overcome pecuniary and other difficulties, which for the time may answer the purposes of the promoters of the work; because I look upon the railways of India as one vast scheme of the highest importance to the future welfare of this great Empire; and, although at first they will be constructed and maintained by private companies, yet, after a lapse of years, will fall into the hands of the Government and become public property; and on this account, as also for the best and most advantageous mode of working them, it is essential that they should be of a permanent and uniform kind, and one general system be extended to all the lines.

If the above view of the case be acquiesced in by the Government, I would recommend that the works be constructed of a better character than is proposed in any of the plans set forth in the documents before me, and therefore the original expenditure would be greater than therein estimated; and, when the proper time arrives, I shall be prepared with a general specification for the works, that should be binding on the part of all railway companies, or other contracting parties, to carry out to the satisfaction of Government; which specification should be subject to alteration only in its unimportant details, and then not without the sanction of the representative of Government.

The capital of the Madras Railway Company for constructing the line from Madras to Wallajahpet, is stated in their prospectus to be 500,000*l*. With this they propose, wisely as I think, to adopt a more substantial mode of construction than is suggested in the documents now before me, "and one more approaching that found to answer best in Europe." They propose to construct a single line of railroad, about 70 miles in length, at a cost not exceeding 5,000*l*. per mile; which low rate, they state, will be owing to the singularly favourable country through which it passes.

With the disadvantage of not having surveyed or seen the ground, and having no detailed maps or plans of the country around Madras, and of the line, or even a section of the line itself, I cannot be considered as in a position to state what the cost will really be; but, judging from what I have seen of works in Bengal, and knowing the cost of rails, engines, and machinery, which I expect must be nearly all brought from England, I am of opinion that 5,000*l*. per mile will be insufficient for the construction of the line and the purchase of the plant necessary for working it. It is, however, probable that the whole of the proposed line of half a million sterling would cover the outlay, provided that the line does not exceed 70 miles in length and the expense of management be very economical. An additional 100,000*l*. (supposing that all the statements before me are correct), I expect would make the capital ample for the purposes proposed, and I would advise that it be increased to that amount.

I should not hesitate, in this case, to recommend the Government to allow of the construction of a single line of railway; yet their consent should be subject to the conditions that all bridges and other works of masonry should be constructed of such dimensions as to be capable, without alteration or addition, for a double line, if such hereafter should be found necessary or expedient, and that the railway company should be bound to lay down a second line, whenever required so to do, by the Government; and also, in the construction of the single line, a sufficient length or lengths of double line, forming passing places, be constructed, as well as a sufficient number of level crossings, to provide for the present and future wants of the country. They should likewise be bound to lay their rails with whatever width of gauge may be decided upon by the Government as the one for general adoption in the railways in India. This should be scrupulously adhered to; for although at present such a restriction may appear to be of small moment upon such a line and in such a situation as the one under discussion, yet who can say what amount of inconvenience and what serious impediments may ultimately result from a departure from a general system, whenever lines from the north, the west, and the south intersect therewith and with each other?

5. The income and probable return.

Assuming the number of tons of goods carried annually along the line to be as stated, 50,000 tons, and the number of passengers 150,000, the income derivable therefrom ought to be, in round numbers, at least for goods, 17,500*l*. at 2*d*. per ton per mile, and for passengers 32,812*l*. at three farthings per mile, making a total of 50,312*l*., supposing them to travel the whole distance.

And I consider that the annual expense of working the line, and maintaining both it and the plant in perfect repair, will not be less than 20,000*l*.; that is putting it on the most limited scale; and the interest upon 500,000*l*., supposing the capital to be augmented to that sum, would amount to 30,000*l*. at five per cent. The income, therefore, in order to pay that rate of interest, should be 50,000*l*. per annum; and we have seen above that it will probably amount to 50,312*l*., as the traffic is stated to exist at the present time, and which, in all probability, will be greatly increased: there can be nothing unreasonable, therefore, in expecting that the proprietors will realize five per cent upon their outlay. In the above statement I have considered that the plant and staff is to be of the most limited and economical kind, and also that the traffic will bear a charge of 2*d*. per ton per mile on the goods, and three farthings per mile for passengers.

6. Terms of, and period of, concession.

The terms upon which the concession may be granted should have a reference to the line becoming part of a general system of railways intersecting India in all directions, and its ultimately becoming the property of the Government. With this object, not only should the line be constructed after a specified manner, but the company should be required to work the line according to a system to be laid down, in which one code of signals may be employed upon every railway in India, whereby servants passing from one to another may not be liable to mistakes in that important particular, and, as much as possible, a duplicate system be introduced in all the details of the railway; so that an accident happening on any line to an engine or train from another line, or to any works thereof, even to the glass slides and burners of the lamps, may be replaced at the nearest station or storehouse, as all similar parts should, as much as possible, be constructed to the same moulds and the same patterns. Likewise the railway company should be required to furnish, from time to time, whatever

returns, statistical or otherwise, that the Government may require, and the whole working and book-keeping to be subject to their control and supervision.

In settling the lease, it might be equitable, as there is so much uncertainty as to the returns, to allow the period or term to remain blank until the line shall have been opened throughout for a space of 10 years, when the average earnings of the last three years might be assumed as a basis upon which to calculate the duration of the lease that should yield a fixed per-centage profit upon the capital, and provide for the redemption of the capital itself. At the expiration of the lease, the whole of the railway and its appurtenances should become the property of the Government without payment, except perhaps for the plant, which might be taken at a valuation.

As a guarantee for the sincerity of the parties, it might probably be advisable to require at the outset a deposit of 10 or 15 per cent, upon the whole capital, to be returned or applied for the continuance of the works when one moiety of the capital shall have been expended thereon.

In conclusion, I must be permitted again to allude to the fact that this report is founded entirely upon documentary evidence, and therefore must be considered as subject to the influence of any errors those documents may contain.

I have, &c.

(signed) F. W. Simms, C. E.,
Director of the Railway Department

COPY of a LETTER from the Government of Bombay, in the General Department, to the Court of Directors of the East India Company.

Honourable Sirs,

Bombay Castle, 30 December 1846.

WE do ourselves the honour to lay before your Honourable Court a copy of the documents relative to the proceedings of the Grand Indian Peninsular Railway Association, at Bombay.

2. In May 1845 we received a letter from the committee of the railway company, intimating that the original association, formed for the purpose of establishing a railway in the direction of the Thull and Bhore Ghauts, had merged into another having more extensive objects in view, and that the efforts of the new company would be directed to ascertaining what line of railway on this side of India promised the greatest advantages to the country, and soliciting our support and assistance in forwarding those objects; and particularly requesting Government to place at their disposal an experienced officer of the Engineer Corps, and to bear the cost of a civil engineer to be employed with him in making a survey of the ghauts.

On this our late President, the Hon. Sir George Arthur, recorded a minute reviewing the past proceedings of the old company, and expressing at some length his sentiments regarding the objects which the new company had in view, and the means by which they proposed to attain them, as also the advantages which he thought would accrue to the country and the Government by the introduction of railways in India. To this minute we would beg to direct the attention of your Honourable Court.

In the minute above referred to, our late President gave it as his opinion that among other advantages attending the scheme, the introduction of railways would ultimately relieve this Government from a part of the burden of maintaining and extending the internal communications of the country, and that thereby great public benefit would ensue from Government giving their support to the scheme, even at the cost of a large pecuniary outlay. He further proposed that the services of an experienced engineer officer should be placed at the disposal of the committee, if one could be spared without detriment to the public service; and the sanction of the Government of India was requested to the employment of a civil engineer in the manner proposed by the railway committee.

In reply, that Government furnished us with a copy of the despatch containing your Honourable Court's instructions on the subject of railways in this country; and at the same time stated, that the Governor-general in Council considered it unadvisable to undertake surveys and investigations with a view of determining the practicability of maintaining railway communication in India, and the selection of lines for experimental operations, except through the agency of the best European professional talent, and a comprehensive practical experience of those modes of conveyance; adding, that the proper means would be devised

devised for ascertaining all that was required by the despatch from your Honourable Court so soon as the professional gentleman whom your Honourable Court should appoint as your engineer should arrive in the country.

In October last our late President received a communication from the Hon. Stuart Wortley, chairman of the London committee of the Indian Peninsular Railway Company, introducing Mr. Chapman, who had been specially deputed as manager on behalf of that company, for the purpose of making inquiries on the spot, and soliciting the aid and support of Government in promoting the objects of the company. The committee of the Railway Association in Bombay were furnished with a copy of this letter, and informed that we continued to take the liveliest interest in the success of the schemes they had in view, and that, with the sanction of the Government of India, we should be happy to afford them every support; and that when their plans for commencing the preliminary surveys had been arranged, instructions should be issued to the Government local officers to give Mr. Chapman and any other persons who might be deputed to conduct these surveys, all the assistance in their power.

The committee, in acknowledging the above communication, stated that Mr. Chapman had arrived, and that they had engaged the services of Mr. Clarke, a civil engineer, long connected with the Great Western Railway in England, and placed them at Mr. Chapman's disposal; that those two gentlemen were prepared to commence the examination of a line of railway from Bombay in the direction of Oomrawuttee and Nagpore; but as it was obvious that any investigation into this subject would afford ample scope for the services of more than one engineer, and as local knowledge and Indian experience were indispensable to the satisfactory prosecution of the inquiry, the committee reiterated their request to be allowed the services of an officer of the Corps of Engineers, to co-operate with Mr. Chapman, and offered to take on themselves the payment of the officer's allowances, and of the expense of any establishment which might be necessary.

The committee were informed, that under the orders of the Government of India, we were precluded from placing at their disposal the services of an engineer officer, but that their request would be recommended to the most favourable consideration of that authority. Their letter was accordingly forwarded to the Supreme Government; and, as the assistance which Mr. Chapman and Mr. Clarke might derive from the local experience of an officer of the Engineer Corps would, we considered, be incalculable, while, upon the terms proposed by the provisional committee, it might be afforded without expense to Government, we requested authority to co-operate, at least to the above extent, with the company in their endeavours to ascertain the practicability of establishing railroads on this side of India.

The Government of India gave their consent to a compliance with the above application of the provisional committee, provided the services of an engineer officer could be spared for the purpose without detriment to the public service, it being clearly understood and agreed that the Government was not to be compromised in any way in regard to the undertaking, and was consenting to aid, without expense, in the preliminary inquiries only because of the great public object in view, and the impracticability of prosecuting those inquiries in a satisfactory manner without such aid. We regret that the pressing demands of the public service on the Corps of Engineers have hitherto prevented us from meeting the wishes of the provisional committee.

In February last we received a communication from the provisional committee, stating that they contemplated commencing operations in the direction of Tannah, and that it was therefore desirable to fix, without delay, upon suitable and convenient spots for terminuses for passengers and goods at the Bombay end of the line. In that letter the committee pointed out the importance, even to the success of the scheme, of the goods terminus being so fixed as to admit of the export trade being brought by the line to the water's edge; and stated that they therefore proposed, with the sanction of Government, to carry the railway along the verge of the Esplanade to a point for a goods terminus, on the western side of the harbour, between the Apollo Pier and the Bunder, with an intermediate station

station for passengers at some convenient spot near the entrance to the fort known as the Church Gate.

Before replying to the committee's letter, we called upon the Superintendent of the Indian Navy and the Military Board to report upon the proposition of having a goods terminus at the spot referred to; and, with respect to the passenger terminus, we desired the chief engineer to state what limitations should be imposed in regard to the extent of ground to be thus appropriated, and also to suggest any provisions that might be necessary to guard against inconvenience or danger to the fort, the public thoroughfares in the vicinity of the proposed terminus, and the houses which line one portion of the sea face of the Esplanade.

We beg to solicit the attention of your Honourable Court to the replies to the above references. The Superintendent of the Indian Navy urged what he considered strong objections to the terminus being fixed in the vicinity of the Apollo and Arthur Bunders, and pointed out as a fitter locality Chinch Bunder, to the north of Fort George Barracks, or Moody Bay, between the Castle and Fort George.

The chief engineer, Colonel Jervis, remarked that the ground selected for a passenger terminus was the only eligible spot now remaining in the hands of Government for public buildings, and that it was far too valuable, in a pecuniary point of view, to be gratuitously assigned away; he suggested, therefore, that the company should be allowed the privilege of reclaiming land along the shallow sea-beach on the eastern shore of Back Bay, so that both the terminus and the railway might be carried quite clear of the Esplanade. The feasibility of this scheme was, he stated, proved by the success of similar works at Colaba, and in the dock-yard; and while it conceded to the company a goods and passenger terminus, though not at the points chosen, and a passage for the railway without encroaching on existing property, it was calculated ultimately to advantage Government, by raising the value of land on the Esplanade. Colonel Jervis at the same time submitted a plan, herewith forwarded, showing how he proposed that the railway should be carried across Back Bay.

This plan was forwarded to the committee, who, in reply to their letter, were informed that we considered that it would tend greatly to the success of the railway that its terminus should have a direct communication with the shipping, and that, feeling the liveliest interest in the success of this great undertaking, we were prepared to afford every facility in our power to secure this object, consistently with the security and protection of the port and commerce of Bombay, and the public convenience; but that objections which appeared to us to be insuperable had been urged against the establishment of a goods terminus on the harbour side of the Colaba causeway; that, whatever might be the side finally determined on, it was not competent for us to sanction any measures affecting the Esplanade, within the engineer's limits, and that the authority of your Honourable Court would therefore be solicited for the requisite permission for granting, on such conditions as might be eventually determined on, a site for a terminus within those limits, and for the erection of such buildings, &c., as should be deemed expedient.

In the meantime we have called for returns of the trade now carried on at the different bunders, and the principal articles of which it is composed. These will aid us in satisfactorily comparing the advantages to be expected from each of the different positions capable of being selected for a goods terminus.

We received a letter from the committee, dated the 6th June last, submitting copy of one which had been addressed to your Honourable Court by Lamm Wharnccliffe, the chairman of the company in London, giving a description of the line of communication for the construction of which they were desirous of obtaining the sanction of Government. This letter has been submitted for the consideration of the Government of India, who have informed us in reply that they are not in a position to give any directions on the subject of the important undertaking of railways at this Presidency.

We have since received a further letter from the committee, dated the 22d August last, desiring to be informed of the different points on which Government

ment will require to be satisfied before the company can be deemed entitled to the necessary power to construct the projected railway.

In forwarding this letter to the Government of India, we have stated that it may be difficult to suggest with exactness any method of testing the accuracy of the committee's proceedings, until they shall be laid before us in some detail; but that we consider it will be advisable, in the first instance, to submit all the papers that may be forwarded to us by the committee to the Military Board, or a select committee of civil or military officers, for their examination and report. We beg to refer your Honourable Court to the several minutes recorded in this letter from the provisional committee.

We have, &c.

(signed) L. R. Reid.
J. P. Willoughby.
D. Blane.



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மு. பா. எ. ஆராய்ச்சி
கையொப்பம் உதவியாளர்
கையொப்பம்

RAILWAYS (INDIA)

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[Presented to Parliament by Her Majesty's Command]

Ordered, by The House of Commons, to be Printed,
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Under 1 oz.