M.R.O. 1—77,000—8-6-37.

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MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 2639 Press ~~Mis.~~

272-73

Dated 17 10 1871.

Not to be folded or roughly handled

No. 272. Read the following Circular from the Government of India, Public Works Department, Railway, to the Governments of Madras, Bombay, and the Punjab, and the Chief Commissioner of Oudh, dated Simla, 20th September 1871, No. 13:—

In continuation of Public Works Department Circular, No. 10 Railway, of the 31st May 1869, I am directed to forward, for information of the Government of Madras, and for communication to the Agents of the Railway Companies in Madras, copies of the correspondence relative to the working of the cylindrical wagons designed by the Agent of the Eastern Bengal Railway, and now in use on that line.

From the Agent, Eastern Bengal Railway Company, to the Locomotive Superintendent, Eastern Bengal Railway Company, dated 9th August 1871, No. 2,914.

I concur with you in thinking that the results of this year's working prove to us that we should, with as little delay as possible, obtain a further supply of cylindrical iron wagons from England, that they be put together and be placed on the line before the beginning of next jute season; and to enable me to lay the case before the Board (as I am anxious to do by the next mail) I shall be obliged by your giving me your opinion on the following points, also on any others that it may occur to you will be of use:—

1*st*.—As to the proposed number of wagons to be indented for, I will ask you to consult with the Traffic Superintendent that we may have your joint recommendations on this point. I will also be glad of your joint opinions as to whether any improvement can be made in the form of the doors, or the manner of opening them.

2*nd*.—Do you consider any (and if so, what) modifications in construction can be made with advantage?

2. You no doubt will have noted that the screw couplings sent out with the first batch were too light; a drawing of the coupling in use should, therefore, I think, go Home. You will also, I presume, forward a skeleton drawing showing the exact gauge or dimensions the axle guards should be apart when fixed.

3. With reference to the question I have often raised, namely, as to the advisability of still further reducing the weight of any part of the body of the wagon, I will be glad to know if you consider this can be done with advantage. I believe we concur that all that part of the wagon below the main angle iron to which axle guards are fixed, and which more or less takes the place of the ordinary sole bar, should not be reduced in strength.

4. The points therefore that I shall be glad of your special opinion on, are—

1*st*.—Whether the buffer beams can be made lighter.

2*nd*.—Whether by any means the ends of the wagons can be made lighter.

3*rd*.—Whether the skin of the wagon above the main angle iron cannot be made lighter.

5. You and I, I believe, concur we should not depart from the present dimensions of the wagons, that is to say, the proportions of length, width, wheel-base, etc., are as near as can be judged perfect, and the only question to determine is therefore if the dead weight of the body can be reduced in either of the three directions set forth in paragraph 4 of this.

6. I will be glad if you will specially inspect some half dozen of the first batch of wagons put on the road, and report on their present condition both as to soundness and gauge compared with when they were first put on the road. It will be as well if you can also state the number of miles run by each of the wagons you thus specially inspect and report on. Your opinion as to the probable durability of such wagons in this country, compared with the ordinary timber wagons, will be useful.

7. We are working out the financial results of working such wagons with a view to lay them before the Board.

From the Locomotive and Carriage Superintendent, Eastern Bengal Railway, to the Agent, Eastern Bengal Railway, dated 11th August 1871.

In reply to your No. 2,914, of 9th instant, I am of opinion, in which the Traffic Superintendent concurs, that we should get out a further supply of 124 cylindrical wagons from England, and, in order that they may be available next jute season, they should be landed in Calcutta not later than the end of March next.

2. I have examined the first 10 wagons which were placed on the line in December last, and find, with the exception of the renewal of a few rivets, they are comparatively as good and as rigid as they were when they first began to run ; I would not therefore recommend any modification in the design ; the short period which the wagons have been running renders it difficult to form an opinion as to their durability compared with the ordinary timber wagons ; this matter will, however, have my best attention hereafter.

3. Owing to the rough handling which the stock is subjected to (and which cannot at all times be avoided), I do not consider the buffer beams should be any lighter than they are.

4. The same remarks may be applied to the ends of the wagons.

5. Regarding the shell of the wagon above the main angle iron, should the Company's Consulting Engineer in England consider that a lighter material of equal strength (say steel) can be introduced in lieu of the present No. 12 B. W. G. plates, it would be worth attention, but the wagons should not, in my opinion, be weakened ; in fact, I think it would be better if the straps were one size thicker than the present ones.

6. Regarding screw couplings, the screw to be the same size and pitch as the last ; the jaws of the nut $1\frac{1}{2}$" diameter instead of 1" the links of similar dimension, and to be made to attach to the draw-bar by a pin $1\frac{1}{4}$" diameter with cutter.

7. The bearing spring cushions to be made as per sketch herewith enclosed.

8. In the last batch of wagons it was found that when the axle guards were put in place, nearly all were from $\frac{1}{4}$" to $\frac{7}{8}$th out of gauge, which caused them to be re-set ; to obviate this I would suggest that all the sole bars and head stocks should be put together, the axle guards fitted to gauge and marked in sets before leaving the manufactory.

9. It being very difficult to get rivet iron of good quality in this country, I would suggest that a few thousand surplus rivets of different sizes should accompany each batch of wagons.

10. I would also suggest that two thousand service bolts of sizes may be sent with each lot.

From the Agent, Eastern Bengal Railway Company, to the Traffic Superintendent, Eastern Bengal Railway Company, dated 9th August 1871, No. 2,923.

With reference to the accompanying letter, No. 2,914, to the Locomotive Superintendent, I shall be glad to see you in this office at 11-30 A.M. on Friday next, the 11th instant to meet that officer and *jointly* to discuss the subject therein referred to.

From the Traffic Superintendent, Eastern Bengal Railway Company, to the Agent, Eastern Bengal Railway Company, dated 11th August 1871, No. A. 19—378.

With reference to your No. 2,923 of 9th instant, with copy of your No. 2,914 of 9th, to Locomotive Superintendent.

After having fully discussed the subject contained in above letters, and from experience we have already gained of this year's working, I am of opinion that no time should be lost in obtaining another 124 cylindrical wagons of the same dimensions as those now running, so that they may be on the road before the next jute season.

From the results obtained since the cylindrical wagons have been running on the road, it is clearly proved that they are pre-eminently fitted for the carriage of our staple commodity, namely, jute, both from the loads they can carry, as well as from the saving shown in working.

I would further add that none of the difficulties that were thought would arise in the loading and unloading have occurred, as the coolies have taken to the work without any objection ; indeed, they seem rather to like being in the wagons, as they have been found asleep in them when standing empty. I would also state that during the heavy rains that we have had this year, contents carried in these wagons have not suffered in the least, they being, I consider, better adapted to prevent damage to goods than the old covered stock.

Memorandum by the Agent, Eastern Bengal Railway Company, on the results of working the Cylindrical Iron Wagons up to the end of July 1871, *dated the 12th August* 1871.

It having been resolved by the Superintendent of Rolling-stock, the Traffic Superintendent, and myself, to recommend that 124 additional cylindrical iron wagons should be indented for from England, I now set forth the results, up to date, of working the 80 wagons of that class now in use.

2. The wagons were placed on the line and at the disposal of the Traffic Department in the following order :—

In December	10
,, February	10
,, March	10
,, April	10
,, June	20
,, July	20
Total...	80

Up to date they have run a total mileage of 4,92,784 miles, and they have carried a paying load equal to 13,281 tons.

We, therefore, are now in a position to form an accurate opinion from *actual results* of working such wagons compared with wagons of the ordinary kind.

I find during the last month we have run down from Goalundo to Calcutta 706 cylindrical wagons, and 564 ordinary covered goods wagons loaded with loose jute only ; the former have carried down for us 5,842½ tons and earned Rupees 64,754, or Rupees 9,111-6-0 per wagon ; the latter have carried 2,989 tons and earned Rupees 33,028, or 58-9-0 per wagon.

The earnings per train per mile of the trains formed of the former vehicles have reached the highly satisfactory figure of Rupees 24-4-1 per mile, whilst those formed of the ordinary wagons have earned Rupees 15-8-0 per mile.

If we had been in a position to work the whole of our jute traffic for the period mentioned with the new wagons, we should have carried the load down with 54 trains instead of 84, which, if taken throughout the year (with the saving already effected from having 80 new wagons in use), would show a reduction in the number of trains to be run from 1,008 to 648, and a total saving in mileage run of 54,360 miles, or equal to 34·40 per cent.

From the foregoing results it appears that by introducing the proposed increased number of wagons of this new class, instead of the original kind, we shall effect the following saving in cost of construction :—

	Rs.
321 wagons of the ordinary kind that would have been required to be put on the line to meet requirements of increase in traffic, at Rupees 1,833-10-0 each...	6,07,853
204 cylindrical ditto, at Rupees 1,711-3-7 each	3,49,375
Saving ...	2,58,478
To this might fairly be added the saving in cost between 19 locomotives, instead of 12 locomotives, the latter being the reduced number required to work the reduced number of trains, 7 locomotives, at Rupees 30,000 each	2,10,000
Total saving...	4,68,784

I cannot at present go into the saving in first cost from reduced length of sidings required at the termini and at the various crossing stations, or into the saving in actual running expenses, or

the saving effected in maintenance of way from 57·50 per cent. less stock being run over the line, also from having to maintain that per-centage less of rolling stock; but neither is at all inconsiderable.

The foregoing results will, I hope, be thought to be satisfactory, but, in my opinion, the greatest gain to the Company is, that with such wagons we are enabled (if it is found necessary) to reduce our through rate from Goalundo for jute to 4 Annas per maund, and the trains will still yield as good receipts per mile as trains of the ordinary wagons by which the present rate of 6 Annas 4 Pie is charged, and by thus being in a position to reduce our rate we should, I think, attract nearly the whole of the jute traffic to Goalundo.

I would beg to call attention to the accompanying statement by the Locomotive Superintendent showing the results of some delicate tests made with a view to ascertain the power absorbed in working trains of the old and new wagons, and from which we have the surprising result, that with the latter we hauled the unusual load of 571 tons against 451, and showed a saving of 19·50 per cent. of fuel.

I would also beg to call attention to that officer's opinion of the condition of the new wagons.

I would also call attention to the attached letter from the Traffic Superintendent, giving that officer's opinion on the results of working.

Although the foregoing results are such as are shown from carrying loose jute only, yet experience has proved the new wagons are as well suited as any others we have in use for carrying seed and grain in bags, and they are the only wagons in which consignees will allow such goods to be carried in bulk, and for which purpose we think we can find most profitable employment for them. If, as some think, the saving in fuel, in hauling such wagons, is in part due to the lower centre of gravity, still better results in this direction should be shown when loaded with grain only; but careful tests will be made when we have the time.

No. 273. ORDER THEREON, 17th October 1871, No. 2,639.

RAILWAY, No. 37.

FORWARDED to the Consulting Engineer for Railways for communication to the Agents of the Madras Railways in continuation of G. O., No. 2,060, dated 24th June 1869.

(True Extract.)

Captain, R.E.,
Offg. Joint Secretary to Government.

To the Acting Consulting Engineer for Railways.

Exd. S. T. Augustin.

Ex — fly Nos 548-549

No. 1571 dispatched
No 43 :3.

7°

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY.

To

THE GOVERNMENTS OF MADRAS, BOMBAY, AND THE PUNJAB, AND THE CHIEF COMMISSIONER OF OUDH.

CIRCULAR No. 13 RAILWAY.

Dated Simla, 20th September 1871.

Received 10th October/71

Enc: 1.

Copy forwarded to the Consulting Engineer for Railways for information with reference to his letter No. 2639 dated 29th September 1871.

Copy forwarded to the Chief Engineer, Madras Railways, for information with reference to his letter No. 1571 dated 29th September 1871.

2639

No. 2639-17 Oct/71

In continuation of Public Works Department Circular, No. 10R, forwards copies of correspondence relative to the working of the cylindrical wagons designed by the Agent, and now in use on the Eastern Bengal Railway.

With order.

C - bo - 4823.

Cobt. of 1871 Under

PUBLIC WORKS.

To

Shoeing Contracting Coy.

for Railways

Entered

Read.

Read.

G. O. 17 October 11, No. 2639

Nos. 272 - 273

By Judicial Wagons Newly
Circular from the Govt. of India
forwarding copies of correspondence
relative to the working of the
By Judicial Wagons designed
by the Agent & now in use
on the Eastern Bengal
Railway, communicated
to the Officers concerned

use on the E