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MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	3389 Ray	Press
B.P. No.		Mis.

Dated	3. 12. 74	105.
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Not to be folded or roughly handled

No. 40. Read the following docket from the Government of India, Public Works Department, (Railway,) dated Fort William, 2nd November 1874, No. 2,762 R:—

COPY of the following (extract paragraphs 2 to 10 from letter No. 270, dated 14th October 1874, from the Director-General of Telegraphs in India, to the Secretary to the Government of India, Public Works Department), forwarded to the Government of Madras with reference to its communications No. 1,785, dated 3rd July 1874, and No. 2,560, dated 9th September 1874, and with the remark that the Government of India would be glad to be informed of the behaviour of Mr. Winter's invention after further trial, and especially in wet weather.

(By Order,)

(Signed) C. H. LUARD, Major, R.E.,
Officiating Under Secretary.

Paragraphs 2 to 10.

2. First, with reference to the merits of Mr. Winter's invention, a comparison of his specification with Part III. of Major Mallock's Railway Telegraph Report will show what in fact the last paragraph (page 12) of the specification states, viz. :—

3. That the invention principally consists of establishing electrical communication throughout the train by means of the side chains. In other respects Mr. Winter's plan generally follows those of Walker, Preece, and Varley with one important exception and omission, viz., he has as yet provided no tell-tale or indicator to show the compartment from which a passenger may have called the guard, *vide* Fig. 4, Plate XXX., Figs. 2, 3, 4, Plate XXXII., Fig. 2, Plate XXXIV. of the above quoted report.

4. This tell-tale is of course not wanted so long as the intercommunication may be restricted to the guards and drivers, but it appears essential to adopt something of the kind wherever the power of ringing the bells may be extended to the passengers.

5. The modification of Leclanché's battery, proposed by Mr. Winter, appears well adapted for the purpose, as the sand will prevent the liquid spilling, and the zinc cylinder will diminish the internal resistance.

The plan of coating the contact surfaces of the coupling hooks with gun metal appears desirable, as I find from the enclosed pamphlet that it has been adopted by Mr. Varley on the L. N. W. R. Royal Train.

6. The main point to consider, however, is whether Mr. Winter's plan of making communication by the side chains is better than Walker's, Preece's, or Varley's plans of making it by means of special catches.

7. There is no doubt that the constant swinging of the chains will keep the surfaces in contact clean, and therefore ensure electrical connection; but there is a doubt whether in wet weather, and especially (it being remembered that this subject must be considered with reference to the whole of India and not with reference to one line) in such weather as occurs on the Western Ghats during the monsoon, the cross leakage of electricity from one hook to the other across the buffer boards, which must occur, would be sufficient to interfere with the working of the apparatus or not.

8. Nothing but practical experience can settle this point, and that experience can only be gained by experiments during wet weather. It is to be noticed that, so far as is shown by the papers received with your letters now under reply, the trial trips have been made during February and March, when this cross leakage could not have come into operation.

9. I am aware that on whatever part of the carriages the connecting hooks may be attached, there must be some cross leakage; but it appears to me that, on account of the amount of iron contained in the coupling hooks, buffer boxes, etc., the actual amount of free surface of wood-work (that is the insulation on which the whole apparatus depends) is less on the buffer boards than elsewhere.

*Proceedings of the Madras Government, Public Works Department,
3rd December 1874.*

10. Mr. Winter knows his profession so well that I am somewhat diffident of making these remarks on his plans, but it may so happen that he may have overlooked this point, and I would suggest to him that the operation of linking in electrical connecting ropes in addition to the side chains is a very simple matter, especially when it becomes a matter of routine, and that perhaps his connections would be made much more perfect if he were to use ropes and link-hooks, somewhat on Preece's or Varley's plan, for one wire and his own new plan of side-chain connections for the return current wire, instead of depending on the wheels and rails as is done in England. The extra expense of this would be but trifling.

Second — With reference to the advisability of introducing electrical communication between passengers and guards in trains that travel less than twenty miles without stopping, it will be well to consider the second extract from Captain Tyler's Report of August 1872, given in page 37 of Major Mallock's Report, Appendix P, of the same report, and also the following extract from the report of the Sub-Committee of Railway General Managers, dated March 1865, viz. :—

"The Sub-Committee is, however, of opinion that it is desirable, if practicable, to give passengers, by express or other trains running for a considerable distance without stopping, the means, in cases of emergency, of attracting the action of the guard of enabling him to stop the train at the next station or under the protection of the next fixed signals; and they recommend that no effort should be spared on the part of the Railway Companies to attain this object; it being borne in mind that, in order to give the public the full advantage of the communication upon the long through trains, many of which traverse several lines of Railway, it is absolutely necessary that all the Companies should adopt the same plan." I wish, however, to point out that, so long as the Indian system of "Intervals of time" instead of "Intervals of space" between trains is adhered to it will be most dangerous for a train to be stopped between stations, in the event of a passenger calling the guard, as it would only have the effect of reducing the unknown distance between two trains to a dangerous limit.

Third.— With reference to the general introduction of electrical communication in trains throughout India, referred to in paragraph 5 of Colonel Shaw-Stewart's letter, No. 41, of 20th May 1874, I have the honor to draw special attention to what Mr. Church says in his letter of 3rd May 1873, about "Cord communication," with reference to the necessity of all Railways that interchange carriages following the same system of "intercommunication."

In the case of electrical communication, the bells, batteries, indicators, or switches of the different Companies may differ, but the outside connecting links and general scheme of connections must be identical, or else the introduction of a single foreign carriage into a train will effectually put a stop to the electrical communication of the rest of it, and, therefore, before any plan be sanctioned for one Company, it must be clearly understood that it will be the standard plan for all the Companies that interchange vehicles.

No. 41. ORDER THEREON, 3rd December 1874, No. 3,389.

RAILWAY, No. 4.

COMMUNICATED to the Consulting Engineer for Railways with reference to G. O., 1,784, of 3rd July, and G. O., 2,559, of 9th September 1874. Lieutenant-Colonel Shaw-Stewart will arrange for a further trial of Mr. Winter's invention being made, and report the result of its action especially in wet weather as required by the Government of India.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Consulting Engineer for Railways.

Exd. S. T. Austin.

Spare Copies

P. W. 1874 Dehartt.
Ph: 780 1/2 Dec
No 7077
From.

The Govt. of India.

Dated 2nd { November 74
Recd of 11th }

No. 2762 R.

Forwarding
correspondence re-
lating to invitation
for establishing com-
munication between
passengers & guards of
trains in motion -
& requesting, after
further trial to be
imposed of the
results of W. Winters
invitation -

Communicated to the Consulting Engineer for R.
Railways with reference to R.O. 1782 of 3rd July and R.O. 2559 of
9th Sept 74. It is stated that it will arrange for a further trial
of the frontier invention being made and report the result
of the experiment especially in wet weather as suggested by the
Govt of India.

Encl.

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Deputt Commr 11-11-74

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