The

VIRTUAL MUSEUM

of the

LANCASHIRE & YORKSHIRE RAILWAY

Accident Reports.

6 May 1859

BoT Report into Accident at

Bowling Tunnel.

(3 Pages).

But although the permanent way cannot be charged with having directly produced the present accident, yet a report upon it would be incomplete without some remarks upon the condition of this part of the line, which must, to all appearance, be very trying to the springs of the engines.

On some parts of the Edinburgh and Glasgow Railway, the joints of the rails have been "fished," though not with very good results, in consequence of the section of the rails, the distance between the sleepers, the size of the "fish-bolts," the nature of the ballast, and other circumstances. On other portions, on which the line has been relayed, extra sleepers have been added, and longer rails employed, without any additional security having been afforded at the joints. On the portion now under consideration, the sleepers were renewed in the course of last year; but the original rails, 16 feet long, and weighing 75lbs. to the lineal yard, still remain; with only three intermediate sleepers under each rail, and no other security at the joints than that which is afforded by the ordinary cast-iron chair and wooden key. The distances, from centre to centre, between the joint chair at which the engine left the rails on this occasion, and those on the east and west of it are, respectively, 3′ 10″, and 4′ 5″; and the corresponding distances between the chairs opposite to these, are 4′, and 4′ 3″.

The ballast is not of good quality, and it is difficult, I believe, to procure good ballast in this neighbourhood. As a consequence of the way in which the ends of the rails have been worn in the chairs, and the distance between the sleepers, the joints are very uneven, and the line is rough, and no amount of care on the part of the platelayers can render it otherwise.

The company are, I understand, relaying portions of the line annually; and it certainly seems to be desirable that they should lose no time in renewing that part of it on which the present accident happened, diminishing the distance between the sleepers, and adopting one of the many improved methods now in use for securing the joints of the rails. They would thus do much towards preventing accidents such as that which I have been describing, by which their passengers have incurred the most imminent risk, and one of their servants has lost his life.

This accident has, no doubt, been directly caused by the unforeseen circumstance of the fracture of a piece of metal upon which reliance might have fairly been placed; but it is, nevertheless, the indirect result of running a somewhat unsteady engine, with an express train, over an indifferent permanent way; and I need hardly add, that it is by a combination of circumstances of this nature that an accident of one sort or another is most likely to be produced.

I have, &c.

The Secretary
Railway Department,
Board of Trade.

H. W. Tyler,
Captain, R.E.

LANCASHIRE AND YORKSHIRE RAILWAY.

Railway Department, Board of Trade,
Whitehall, June 10, 1859.

Sir,

I am directed by the Lords of the Committee of Privy Council for Trade to transmit to you the enclosed copy of the report made by Captain Tyler, R.E., of his inquiry into the circumstances connected with the collision which occurred on the 6th ultimo, in the Bowling Tunnel, on the Lancashire and Yorkshire Railway.

My Lords trust that the Directors of the Lancashire and Yorkshire Railway Company will, in conjunction with the directors of the Great Northern Railway Company, carefully consider the recommendation of the inspecting officer as to the mode of working the electric telegraph in the tunnel in question.*

I have, &c.

The Secretary to the
Lancashire and Yorkshire
Railway Company.

Douglas Galton,
Captain R.E.

London, May 31, 1859.

Sir,

In compliance with the instructions contained in your letter of the 12th instant, I have the honour to report, for the information of the Lords of the Committee of Privy Council for Trade, the result of my inquiry into the circumstances which attended the accident, that occurred on the 6th instant, in the Bowling Tunnel of the Lancashire and Yorkshire Railway.

This is a straight tunnel, 1,645 yards long, situated about a mile to the west of the Lancashire and Yorkshire station at Bradford, and on a gradient of 1 in 400, falling towards that station. For the better security of the traffic, the electric telegraph is employed in working it, and no two trains are allowed to be in it upon the same line of rails at one time. The signalman at the east end is in the service of the Great Northern, the signalman at the west end, in that of the Lancashire and Yorkshire Railway Company. The former has charge of a junction with the line to Leeds, which is worked by the officers and servants of the Great Northern Company; and he is provided with main signals and distant signals in each direction, though with an inferior description of hut. The latter has better accommodation, but has no main signals at his cabin.

It is very desirable that a better hut or cabin should be provided for the signalman at the east end of the tunnel; and that a semaphore signal should be supplied for the use of the signalman at the west end, to be worked from the hut, with two arms, one for each line of rails.

It is stated, that on one occasion, on which they were counted, 110 trains or engines passed through this tunnel in the course of 24 hours.

The gradient rises 1 in 50, from the Lancashire and Yorkshire station at Bradford to the east end of the tunnel, and falls, first 1 in 150, and afterwards 1 in 100, for 1¾ miles, from the direction of Leeds, upon the same end of the tunnel.

On the afternoon of the 6th instant, a passenger train from Leeds passed into the tunnel from the east end at 3·32, and as it did so, a train from Bradford arrived at the signalman's box. When the east signalman learnt by telegraph that the Leeds train had passed out again, he permitted the Bradford train to enter the tunnel, and immediately afterwards a second train from Bradford came up. After some detention, this last train was sent into the tunnel by the signalman, and it came into collision with the first Bradford train about 200 yards from the west end of the tunnel. Six of the passengers, and two of the servants of the Company, were more or less injured.

There are thus three trains referred to, a Leeds train, and two Bradford trains. The Leeds train passed through without accident, but the second Bradford train caught up and ran into the first Bradford train, when the latter had nearly got through the tunnel.

Such having been the nature of the collision, I shall next proceed to give the statements of the signalmen as to the manner in which it was brought about.

The statement of the signalman at the east end is to the following effect:—When the train from Leeds

* Similar letter sent to the Great Northern Railway Company.

came up, he gave the usual signal, "in," to the west signalman, and received "in" in reply, and he sent the train through. When the first Bradford train arrived at his box, he gave "train waiting," and received "line blocked;" he then waited until he received "line clear," after which he sent this train forward, with the message "train in," and this message was repeated to him in reply. When the second Bradford train came up to his box, he again gave "train waiting" and received "train out," without delay, in reply; and upon this he gave "train in," received "train in," and told the driver to "go on, all right." He adds, that when the collision occurred, the west signalman asked him why he had let that train in, and that he replied, "You gave me it (the preceding train) out."

The statement of the west signalman agrees with that of the east signalman up to the time of the arrival of the second Bradford train at the box of the latter. But the west signalman states positively that he neither received nor made any signal whatever about that train until after the collision occurred. He says, that upon hearing the noise of the collision, which occurred near his end of the tunnel, he asked the east signalman, "What did you let that train come in for," but that he received no reply, excepting that his bell was rung by way of acknowledgment.

The driver of the second Bradford train states, that he found the signals both "at danger" when he approached the east end of the tunnel, and that he cannot be certain whether his train came to a *dead* stand or not; that he saw the signalman go into his cabin for about a quarter of a minute, as he was drawing up to the junction; and that when the signalman come out again, he lowered the signal for him to proceed into the tunnel, and called him on with his arm.

The fireman of the same train says that that train was not brought quite to a stand, though it was so very nearly, within 20 yards of the junction, before the signalman lowered the arm of the semaphore for it to proceed. He also saw the signalman go into his cabin, when he was about 150 yards from it, and he saw him come out again, to lower the signal for the train to proceed, when the train had very nearly been brought to a stand at 50 yards from the cabin.

The guard of this train states, that the speed of the train was never reduced below a walking pace; that the signal was lowered for the train to proceed when they were 100 yards or more from it; and that, although he was watching the signalman all the time, he did not see him go into his cabin at all.

The above being the leading features of the evidence in this case, it would be impossible, if the two signalmen had made their statements in an equally straightforward manner, to come to a satisfactory conclusion, as to which was right and which was wrong. While it is very unlikely, on the one hand, that the west signalman should have given the signal "train out," before the first Bradford train passed out at the west end of the tunnel, it is almost as improbable, on the other, that the east signalman should have sent the second Bradford train in at the east end, without making any signal to his colleague with reference to it; and the more so as he was seen by the driver and fireman of that train to go into his cabin, where his instrument was, before lowering the signal, and directing them to proceed.

But there was a marked difference in the manner in which these two men gave their evidence. The Lancashire and Yorkshire signalman, a much older, and less intelligent man, had clearly a plain story to tell, which gave him no difficulty; while the Great Northern signalman, with superior acuteness, contradicted himself in a way which indicated that he was labouring under the disadvantage of having to sustain a made-up story.

There was another circumstance, also, brought forward in the course of my inquiry, which tended to prejudice the character of the latter signalman, and to which it will next be my duty to refer.

A complaint was made by the Lancashire and Yorkshire signalman to the station master at Low Moor, on the 13th instant, that the signalman from the east end of the tunnel had permitted a goods train to pass through the tunnel at 2·40 a.m. without signalling it, and that he therefore knew nothing of a train being in the tunnel until he saw it. On referring to the record book at the east end, the station master found that this train had been entered as having passed into the tunnel at 2·3, and as having been signalled out again at 2·6, which was within ten minutes or a quarter of an hour of the time at which it usually passed, but was half an hour earlier than it actually passed on the morning in question. The station master, therefore, remarks, in his report to the superintendent, of which I enclose a copy,—"I do "not know how this man can account for the junction "signals standing off, for the train not being given "in, and 34 minutes difference of time."

The mode in which the Great Northern signalman attempts to account for these things is ingenious, but does not bear the stamp of truth. He was sitting reading in his box; he heard the luggage train coming from Leeds; he went out and pulled off his signals to let it pass. When the train came down to the junction, and just as it was passing his box, he shook the needles of his telegraph instrument twice, but he could not get any reply from the west end until the train went out of the tunnel. He made the entry 2·3 by his watch, and the entry 2·6 by guess, because his watch had stopped at 2·3. He set his watch right again by the church clock when he heard that clock strike three o'clock. He did not find out that his watch had stopped until half an hour after the train went by, and he then observed that it remained the same. The other signalman gave him "train out," though he was unable to attract his attention for the purpose of giving him "train in." He looked at his watch, and it had stopped. He therefore made the entry 2·6 by guess.

The west signalman states, that when he found the train coming to him without notice, he inquired of this man on his instrument, "What he let the train "come through without signal for?" but that he received no reply, excepting that his bell was rung by way of acknowledgment. He also states, that about a minute after, the east signalman asked him if all was right, and that he replied, "Yes." The east signalman denies that the west signalman asked him, "What he let the train come through without signal "for?" but admits that he inquired whether "all was "right," and says that he did so because he could not attract the west signalman's attention when the train went into the tunnel.

The two signalmen give each other an excellent character for attention, stating that they have had no mistakes or misunderstandings for the five years that they have occupied their respective posts, until the occasion of the collision now referred to. After hearing their evidence, I have no doubt in my own mind that the Great Northern signalman was in the wrong in the two cases above detailed; and there seems to be every reason for supposing that the other man is free from blame.

I have already referred to the want of main signals at the west end of the tunnel; and I would now add, that though the east signalman has a book in which to record his train messages, the Lancashire and Yorkshire signalman is at present unprovided with one, and that it is desirable that this want should be supplied.

The mode adopted in working this tunnel is the same as that which is in force upon the Great Northern Railway. The telegraph needles are both employed for signalling with reference to both lines of railway, as well as to indicate the nature of the trains that are to be expected; and they are left in an upright position, whatever the condition of the line, excepting when signals are being transmitted, when they are, of course, worked in the usual manner. I think that it would be better, at all events in such a case as this, if

one needle were expressly retained for the service of each line of way, and if the west signalman were, for instance, upon receiving notice from the east signalman of a train entering from the east, to fasten the proper needle over to "line blocked," until it passed out again at the west, and *vice versâ*. The men would not then have to trust to their memories, but simply to ring their bells, and work their instruments, upon the ingress and egress of the trains; and they would have always under their eyes a constant indication of the line being either clear or obstructed, which would render any mistake, both less likely, and less excusable, than under the present system. An extra needle would probably, however, be in that case required, to indicate the description of train to be expected, in consequence of there being a junction at the east end of the tunnel.

The entries in the record book of the east signalman in regard to the three trains above alluded to are as follows:—

	Telegraphed	
	Into Tunnel.	Out of Tunnel.
Leeds Train - - - -	3·32	3·34
First Bradford Train - - -	3·35	3·37
Second Bradford Train - -	3·38	—

It takes a train, apparently, from two to two and a quarter minutes to proceed through the tunnel, when it has not been stopped at the east end; but when a train has been so stopped, about three minutes are occupied by it, in the general way, in passing through. Supposing the second train to have entered the tunnel at 3·35, therefore, which it probably may have done, if the first train, which was not stopped at the tunnel mouth, entered at 3·32, that second train could hardly have reached the other end at 3·37 under any circumstances; and that it did not do so is certain, because it was run into at 200 yards from the west end of the tunnel. It is probable, also, that the third train entered the tunnel *before* 3·38, because, if the second train passed in at 3·35, it must have been about 3·38, or not far from that time, when the third train ran into it.

The second train was a light one as well as the third train, the former consisting of an engine and tender, three carriages, and a van, and the latter conveying two empty carriages to Low Moor. There must have been a considerable difference in their speed through the tunnel, though, of course, the precise difference cannot be ascertained. The driver of the third train states that his speed did not exceed 30 miles an hour. This is, probably, a good deal under the mark, though no blame can attach to him in that respect, because he had every right to believe that there could be nothing else before him in the tunnel.

It is singular, if it be true, that these two signalmen should have had no previous misunderstandings or difficulties during the five years that they have been working together at their respective posts; and that the two cases to which I have had occasion to allude, should then have followed so closely upon one another. From these instances it would appear, however, that the Great Northern signalman ought not longer to remain in a situation in which the careful performance of his duties is of so much importance to the public safety.

I have, &c.

The Secretary,
Railway Department,
Board of Trade.

H. W. Tyler,
Captain, R.E.

Memorandum to Wakefield.

Sir, *Low Moor Station, May* 14, 1859.

Holroyd, signalman at this end of Bowling tunnel, complains that the Leeds goods train was allowed to come through yesterday morning at 2·40 A.M. without being signalled, he knew nothing about a train being in the tunnel until he saw it; I would have reported this to you yesterday, but I thought it would be better to make some inquiries, and I think that this case will show that the time-book kept at the other end of the tunnel is not to be relied upon. Mitchell, driver, and Whitehead, guard, state that they left Leeds at 1·45 a.m., when they got to Bowling tunnel the signals were both standing off, they arrived here about 2·42 a.m., the watchman here books them away at 2 50 a.m.; Holroyd states that the train passed him at 2·40 a.m., I went to the other end to look at his book, and I found it there entered in at 2·3 a.m., and given out at 2·6 a.m., a difference of 84 minutes, and according to his entering only gives the train 18 minutes to run from Leeds to the tunnel. I do not know how this man can account for the junction signals standing off, for the train not being given in, and 34 minutes difference of time.

Your obedient Servant,

Capt. Binstead, R.N.,
Superintendent.

R. Todd.

LANCASHIRE AND YORKSHIRE RAILWAY.

Railway Department, Board of Trade,
Whitehall, August 1, 1859.

Sir,

I am directed by the Lords of the Committee of Privy Council for Trade to transmit to you to be laid before the Directors of the Lancashire and Yorkshire Railway Company, the enclosed copy of the report made by Colonel Yolland, R.E., the officer appointed by my Lords to inquire into the circumstances which attended the accident that occurred to a passenger train belonging to the Lancashire and Yorkshire Railway Company on the 8th ultimo at the Salford junction.

My Lords direct me to state that they trust the suggestions of Colonel Yolland will receive the careful consideration of the directors.*

I have, &c.

The Secretary of the
Lancashire and Yorkshire
Railway Company.

Douglas Galton,
Captain R.E.

* Similar letter addressed to the London and North-Western Railway Company.

Stoke, near Devonport,
July 25, 1859.

Sir,

I have to acquaint you for the information of the Lords of the Committee of Privy Council for Trade, of the result of my inquiry, made in pursuance with the instructions contained in your letter of the 12th instant, into the circumstances which attended the accident that occurred on the 8th instant to a passenger train belonging to the Lancashire and Yorkshire Railway Company, at the Salford junction. No person was hurt.

The Lancashire and Yorkshire Railway Company's Bolton branch, joins the London and North-Western, Manchester and Liverpool Branch, at the Salford Junction, and the line between the junction and Victoria Station Manchester, belongs to, and is maintained by the London and North-Western Railway Company.

The signals and points at the junction are worked from a stage over the line, the pointsman standing somewhere about 20 feet immediately above the rails. The floor of the stage is boarded so that the pointsman, a servant of the London and North-Western Railway Company, cannot see whether the points are properly closed. They are weighted to stand open