

The  
**VIRTUAL MUSEUM**  
of the  
**LANCASHIRE & YORKSHIRE RAILWAY**

Accident Reports.

16 January 1871

BoT Report into Accident at  
Bradford.

(2 Pages).

wheel 40 yards north of and the near wheel at, the spot where the carriage turned over, the near wheel broken, and with its tyre off. The couplings between the third-class carriage and one in front of it had given way; those between it and the van having held. Both vehicles were more or less injured, but not very extensively.

The first piece of tyre, 11 inches long, is stated to have been picked up in the six-foot space, close to the inside rail of the up line, 147 yards north of the 61 mile post; five other pieces, measuring respectively 9 in., 2 ft. 9 in., 19½ in., 2 ft. 10 in., and 1 ft. 6 in., were picked up within the next 170 yards, extending that is to a point 23 yards south of the 61 mile post. (The exact position in which these pieces were picked up had not been noted.)

The first trace of any wheel being off the rails was at 88 yards north of the 61 mile post, where there was the mark of an off wheel in the four-foot space; 210 yards further south the marks seemed to indicate that the rim of the near wheel broke, soon after which the outside jaws of 25 chairs of the left rail were broken; 817 yards from where the first piece of tyre was picked up the two vehicles turned over, stopping, as before stated, 80 yards further on, making a total distance of about 900 yards from the first piece of tyre to the final stoppage of the carriage.

As mentioned above, the rear guard is of opinion that for 530 yards previously the carriage was off the rails. There were, however, no marks in the permanent way to substantiate this opinion, nor was there anything in the condition of the springs, &c. of this carriage to induce the belief that it could have been travelling so uneasily as to have had the appearance of being off the rails before the tyre broke. I am therefore disposed to think that his perilous ride of 900 yards

may have somewhat affected the guard's judgment, and led him, unconsciously perhaps, to magnify its length.

The cause of this accident is then, I think, to be solely attributed to the failure of the tyre of the near trailing wheel of the third-class carriage belonging to the Manchester, Sheffield, and Lincolnshire Company.

It was a weldless steel tyre, manufactured by Vickers and Co., shrunk on an open-spoke wrought-iron wheel, and secured by four three-quarter inch wrought-iron rivets. Its exact age was not known; but it had been probably running for some years, as it had been worn down from two inches to 1½ in. I was informed by an officer of the locomotive department, who had seen the tyre shortly after its fracture, that on one of the surfaces of the piece first picked up there was a flaw, not perceptible externally, extending through about two thirds of the section of the tyre; this flaw was, however, by no means well defined when I examined the tyre six days after the accident. Three of the rivets were broken off; one remained entire. None of the fractures occurred at rivet holes. Three of the spokes of the wheel were broken, and about half the rim was gone. The axle was broken in two (evidently a consequence of the accident) near the centre.

The failure of this tyre was most probably caused by the existence of an original flaw in the metal, combined with the rigidity of the permanent way from the severe frost.

This accident, like the recent one near Hatfield, points to the necessity of securing tyres to wheels by a method which will prevent them from flying off in case of fracture.

I have, &c.  
The Secretary, C. S. HUTCHINSON,  
(Railway Department,) Lieut.-Col. R.E.  
Board of Trade.

Copies of this report were sent to the Great Northern and the Manchester, Sheffield, and Lincolnshire Railway Companies on the 27th February.

LANCASHIRE AND YORKSHIRE RAILWAY.

SIR, Leicester, 27th February 1871.

In compliance with the instructions contained in your minute of the 25th ult., I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the accident which occurred at Bradford station on the Lancashire and Yorkshire Railway, on the 16th ult., from a train entering the station at too great a speed, in consequence of which the engine came into violent collision with a pair of buffer stops, then mounted the end of a platform, and broke through the wall of a station building.

A person who was standing on the platform was so crushed between the engine and wall that he died in about 12 hours.

One of the Company's firemen, a passenger in the train, jumped out before the train stopped, came in contact with a switch handle (which penetrated his ribs), and died in about a week.

Four passengers in the train are stated to have received slight injuries.

Between Lowmoor and Bradford stations, a distance of 2 miles 75 chains, the line first

rises	1 in 280	for	51 chains,	
is	level	"	9	"
descends	1 in 400	"	74	" (through a tunnel),
is	level	"	10	"
descends	1 in 50	"	83	"
is	level	"	8	"

Total 2 m. 75 ch.

Bowling junction occurs at the top of the incline of 1 in 50.

On the 16th ult., at 6.35 a.m., a driver, fireman and guard, with a train consisting of a single engine with

6-foot driving wheel, outside cylinders and four wheeled tender, one 1st-class carriage, two 2nd-class carriages, and guard's-van with two 2nd-class compartments, all four carriages coupled together with Fay's continuous breaks, commenced its day's work at Bradford for Dewsbury, Wakefield, &c.

It returned to Bradford through Lowmoor at 2.32, all having gone right on this journey; left Bradford again at 2.45 for Huddersfield; reached Huddersfield at 3.40 correct time, and finally left it for Bradford at 3.50 correct time, with the guard's-van next the tender, on the journey that had its fatal termination. All went right as far as Lowmoor, up to which time the train had neither overrun nor stopped short of any station during its day's work. At Lowmoor the guard gave the driver a starting signal, nothing unusual being noticed in his manner, and the train started for Bradford at 4.42, 10 minutes late, having been detained at Mirfield junction. The driver (a man of five years' experience as such) states that he shut off steam at the usual spot about a quarter of a mile before coming to the top of the incline of 1 in 50, when his speed was from 18 to 20 miles an hour; that at the top of the incline, where both the tender and guard's breaks are usually commenced to be applied, his tender breaks were put on, but released a little afterwards as the speed was getting too slow; that at about half way down the incline (or about half a mile from the buffer stop at the station) his tender breaks being hard on, thinking his speed was too high, he turned round to see if the guard was at his break wheel, and perceived him sitting on his seat with his head down, appearing to be asleep; that he picked up a lump of coal, and threw it at the end of the van, but that this did not rouse him; that he then opened his break whistle, his

fireman at the same time throwing another piece of coal through the van window; that upon this the guard got up to the wheel, and put his hands on as if going to apply the break, but did not do so, and rather seemed to turn it off; that at this time, the distance from the buffer stops being reduced to about a quarter of a mile, he (finding no dependence was to be placed on the guard) reversed his engine, and put steam against it, the speed being from 15 to 16 miles an hour, but that the speed did not appear to decrease till the engine came into collision with a pair of buffer stops at the end of a dock in which the train was intended to draw up. The driver jumped on to the platform about 12 yards from the buffer stops, fell on his knees, and was not hurt; the fireman jumped previously on to the ground; fell down, and was slightly injured. The guard remained in his van till the accident occurred, at about 6 or 7 minutes to 5.

The fireman's statement differs from the driver's as to the usual point for applying the tender and guard's breaks, and also as to the point at which the tender breaks were put on on the present occasion; this not having been done, according to him, until rather more than half way down the incline (the usual point for the application of both breaks), after which they were not released at all, and that though he used sand to the tender wheels the speed seemed rather to increase than diminish; the fireman's statement otherwise corroborates that of the driver.

The engine, after striking the buffer stops (which were of massive construction), knocked them away, mounted on a piece of pavement 9 ft. wide, connecting two platforms (one on each side of the dock), crossed it, and stopped with its front embedded in the wall and window of a porter's room, into which window the person who was killed was looking. The trailing wheels of the engine remained on the rails, likewise those of the tender and of the rest of the train. The left cylinder, left frame plate, and buffer beam of the engine were broken; and one carriage had the end of its framing injured.

A carriage inspector, who was standing on the platform 35 yards from the buffer stops, heard the engine whistling, and saw the train pass him at a speed of 15 to 16 miles an hour. The engine was reversed, with steam on, the tender breaks applied, but not the guard's breaks. He saw the guard Hill standing at his wheel motionless. He followed the train, and jumped into the van directly it stopped. Hill was still standing by the wheel, and he said to him, "Whatever have you been doing to come in like this?" Hill replied, "I don't know." He then tried the wheel, which was turned off, and found that it worked perfectly. (The van indeed was used again the same evening.) The inspector did not think the guard was the worse for drink, nor did he smell him of spirits, but said that he looked amazed. He had known him for seven or eight years, for the

last 13 months as passenger guard working in and out of Bradford, during which period he had made no mistake; he also informed me that about two years ago Hill had fallen from the station clock, since which time he had not been (according to the inspector) quite right in his head.

Directly after the accident Hill went up to the driver, and wanted to know what was the matter. The driver said, "You see what is the matter." Upon this Hill replied that he could not move his break wheel. The driver's impression was that Hill appeared peculiar, but not the worse for the liquor; that he did not smell of spirits, and appeared to walk steadily. He had worked with him three months previously, when he had made no mistake.

Sometime (half to three quarters of an hour) after the accident the fireman saw Hill, who went on to the foot plate of the engine, and wanted to know what was the matter. The fireman said that he did not smell of spirits, but seemed "beerified," and could not walk steady; that he accused Hill of having been asleep, which he did not deny, but said that he knew nothing about the accident.

Hill is about 25 years of age; had been a passenger guard about 13 months; had been recently ill with an abscess in his thigh, but had returned to duty the week before the accident. Nothing had been observed wrong with him during the previous part of the day, nor was there any misconduct recorded against him.

He was not brought before me for examination. He has been found guilty of manslaughter by a coroner's jury, and will therefore be tried at the forthcoming assizes.

There is no question but that this accident was caused by the failure of guard Hill to apply his breaks in descending the Bradford incline, after being warned to do so by the driver of his train. As to whether this failure was caused by drink or illness I have not sufficient evidence before me to determine.

This accident, like the one at Accrington in 1869, and many others, points to the great desideratum yet to be accomplished as regards continuous breaks, viz., the devising of some simple means by which the power of applying them may be placed in the hands of the driver as well as of the guard. Until this is done, all practicable mechanical means for the prevention of such accidents as the present will not have been tried.

Although there is nothing to show that in the present instance the driver was proceeding at a higher speed than was usual or justifiable, it appears to me that it would be only a wise precaution to order all drivers to stop dead on the level space south of Bowling junction before entering on the incline of 1 in 50.

I have, &c.

*The Secretary,*  
(*Railway Department,*)  
*Board of Trade.*

C. S. HUTCHINSON,  
*Lieut.-Col. R.E.*

Copies of this report sent to the company on the 16th March.

## LANCASHIRE AND YORKSHIRE RAILWAY.

*Railway Department,*  
*Board of Trade,*  
28th February 1871.

Sir,

In compliance with the instructions contained in your minute of the 31st ultimo, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the collision which occurred on the 26th ult., near Bradford station, on the Lancashire and Yorkshire Railway, between a passenger train belonging to that company and a salt-van in a goods train belonging to the London and North-western Railway Company, which van had left the rails.

One passenger died of injuries received, and another was hurt, but not seriously.

A goods train, belonging to the London and North-

western Railway Company, arrived at Bradford good's yard from Heaton Lodge, at 10.15 a.m., (an hour late,) on the 26th ult., and left it again at 10.45 a.m. for the mineral yard at Broomfield, about a quarter of a mile south of Bradford station. It consisted of engine and tender, a waggon of straw, two loaded salt waggons, and a break-van. The three loaded waggons, which were intended for Broomfield yard, might have been left there when the train passed the yard on its way into Bradford; but the signals having been off for it to proceed into Bradford, the driver preferred running through, and dropping the waggons as he returned.

Just after passing a signal cabin 280 yards south of the platform, and entering a short tunnel where there is a cross-over road (with facing points), between the