LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade,
(Railway Department),
Whitehall, 6th June 1864.

SIR,

I AM directed by the Lords of the Committee of Privy Council for Trade to transmit to you, for the consideration of the Directors of the Lancashire and Yorkshire Railway Company, the enclosed copy of the report made by Captain Tyler, R.E., the officer appointed by their Lordships to inquire into the circumstances connected with the accident that occurred to a passenger train near the Castleford Station on the 5th April last.

I am, &c.
JAMES BOOTH.

The Secretary to the
Lancashire and Yorkshire
Railway Company.

Hampton Court,
31st May 1864.

SIR,

IN compliance with the instructions contained in your minute of the 14th ultimo, I have the honor 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 5th ultimo, near the Castleford station of the Lancashire and Yorkshire Railway.

This station is about four miles to the north-west of Pontefract, on the line from Knottingley to Leeds. There was a horse fair at Doncaster on the day in question, and the passenger train which should have reached Knottingley from that place at 3·53 p.m. did not arrive until 4·24, in consequence of delay in attaching extra horse-boxes. The train, therefore, which left Goole at 3·15, and reached Knottingley at 3·55, had to wait at Knottingley till 4·34, and then started, 29 minutes late, for Pontefract. It left Pontefract again at 4·40. by Doncaster time, or 4·42 by Knottingley time, instead of 4·10.

It consisted of an engine and tender, a break van, and three passenger carriages. The engine-driver proceeded towards Castleford, the first station at which he was due to stop on his way to Leeds, at a speed of 30 to 35 miles an hour by his own account, or of 40 to 50 miles an hour according to the evidence of the guard. He was travelling along a straight line, and on a gradient falling 1 in 876 towards Leeds. Soon after passing the Carr Lane level crossing, he found that his engine was off the rails. He shut off his steam, and told his fireman to apply the tender break. He felt his engine jolting over the sleepers, and crossing both lines of rails; but he remembered nothing more until he found himself afterwards in a room at the Pontefract station.

The guard was standing up in his break-van, which was provided with an elevated window, and was steadying himself by his break handle as he looked out of that window towards the front. He saw the engine, which had previously been going very steadily, give a jump—as he describes it—a few yards before it reached the Carr Lane crossing; and this appeared to him to cause it to oscillate for a short distance, until it broke away, and left the rails.

On a subsequent inspection of the spot, by the officers and servants of the company, it appeared that a joint-chair, and two other chairs, one on each side of it, had been pushed outwards on the sleepers a few yards on the Pontefract side of the level crossing;—that the road was undisturbed for 55 yards forward from that point;—that a rail was then thrown out of the line to the extent of from 6 to 12 inches on the left, and the opposite rail, according to one witness, was pushed slightly outwards on the right;—and that the line was then torn up for 110 yards forward.

The engine and tender had passed the first point of disturbance without leaving the rails, but had been thrown off the line, as well as the carriages and van, at the second point where the rail was thrown out to the left. After running for 110 yards over the sleepers and ballast on the left of the line, they diverged to the right. The engine turned completely over and half round, in crossing both lines of rails; and it came to a stand on its wheels on the north slope of the embankment, 11 feet high, which occurs at this part of the line. It was found lying with its buffer plank in the hedge at the foot of the slope, and nearly at right angles to the hedge. The tank was knocked off the tender and was very much damaged. The framing of the tender lay, wheels uppermost, behind the engine, and nearly at the the top of the slope. The break van stood across the rails, much broken, with the elevated portion detached from it. The carriages stood on their wheels on the slope, on the left of the line on which they had been travelling.

The engine-driver escaped with some severe bruises; but the fireman, unfortunately, had both his legs broken, and lies in a precarious state; and the guard had one rib fractured and three displaced. Of the passengers, one is suffering from a broken thigh, and others must, no doubt, have been much injured.

The engine, No. 87, was a ***single*** engine, with driving wheels 5 ft. 6 in. in diameter, and ***outside*** cylinders, 15 in. diameter, with a stroke of 21 in. The driving wheels carried 10 tons; the leading wheels, 3 ft. 6 in. in diameter, carried 8 tons; and the trailing wheels, also 3 ft 6 in. in diameter, carried 5 tons. The driving and leading axles were 5 ft. 2in., and the driving and trailing axles 7 ft. 10 in. asunder. It was found after the accident that the funnel was bent back upon the boiler; that the dome and safety-valves were bent, and one safety-valve was blown away; that the top plate of the left leading spring was broken; that the hind spring, which rested on the trailing axle transversely to the engine, was broken to pieces; and that the trailing axle was bent near the centre, about a quarter of an inch out of the straight line. The engine-driver perceived nothing amiss with the engine until it left the rails, and these several items of damage appear to have been received, and may well have been received, in running across the sleepers, in turning over, and in falling down the slope of the embankment.

The permanent way is laid with rails of the I section, 15 ft. long, and weighing 80 lbs. to the lineal yard. The joints of the rails are not fished. The chairs, of cast-iron, weigh 39 lbs. each, and contain 3 holes for trenails, by which they are fastened to transverse sleepers. The sleepers are 2 ft. 6 in. apart from centre to centre. This line is upwards of 14 years old, and the portion of it which I walked over on the 20th instant, about a mile long, between Castleford station and the site of the accident, was in bad condition. Many of the sleepers wanted renewal. A large proportion of the chairs were insecurely fastened to the sleepers. The trenails were frequently useless, sometimes from decay, and sometimes from fracture. Some chairs had no fastening in any one of their three trenail holes, and some trenails which appeared at first sight to be sound, were broken at the bottom of the chair, and could be drawn out with the finger and thumb. New trenails had been inserted in places, many of them subsequently to the accident; and iron spikes had been inserted here and there; but no care had been taken generally to provide ferules or other means of compensating for the difference in diameter between the iron spikes and the trenail holes. The line was, indeed, much in the same state as I have seen many other lines on which wooden fastenings have been employed; and was quite in a condition in which an accident of this description might be anticipated.

There can be no doubt as to the cause of the accident. The ***outside*** cylinder engine, not of the

steadiest class, was travelling at high speed, though not so as to cause any risk apparently of bursting a sound permanent way. It came upon a weak portion of the road before it reached the Carr Lane level crossing, where the fastenings of three chairs gave way. It thus acquired some additional oscillation, and it reached, 55 yards further in advance, another weak portion of line, before it recovered itself. The fastenings again gave way; the engine and the whole train left the rails; and the results followed which I above described.

This is a class of accident on which I have of late years had very frequently to report. By far the the greater number of accidents that have arisen from defects of permanent way have been caused, as in this case, by the failure of trenail fastenings; and accidents will no doubt continue to occur from the same cause as long as this description of fastening is allowed to remain, particularly in old roads. I would take this opportunity of strongly recommending the Directors of the Lancashire and Yorkshire Company to cause an iron spike to be inserted in every trenail that now remains on their line; and it is most important that the same measures should be adopted on all other lines in the kingdom on which trenail fastenings still continue to be employed.

I have, &c.

H. W. TYLER,
Capt. R.E.

To The Secretary
Railway Department,
Board of Trade.

LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade
(Railway Department),
Whitehall, 12th July 1864.

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 Captain Tyler, R.E., the officer appointed by my Lords to enquire into the circumstances connected with the collision which occurred at the Bamber Bridge station on the 21st ultimo.

I am, &c.

JAMES BOOTH.

The Secretary of the
Lancashire and Yorkshire
Railway Company.

SIR, *Chester, 6th July* 1864.

IN compliance with the instructions contained in your minute of the 27th ultimo, 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 21st ultimo, near Bamber Bridge, on the Lancashire and Yorkshire Railway.

This station is a few miles to the south of Preston, and a quarter of a mile to the east of the Bamber Bridge Junction, at which the lines from Liverpool and Blackburn meet.

As the 4·5 p.m. passenger train from Preston to Blackburn was approaching it in due course, about 4·20 on the afternoon in question, the engine-driver suddenly saw a goods engine which had been shunting on the down line cross over towards the up line, on which he was travelling. The passenger train consisted of an engine and tender, two first-class and two second-class carriages, and two break vans, in charge of two guards. Each carriage was provided with a break, there having been two sets of Newall's continuous breaks in the train. It was drawing up to stop at the station, and was proceeding at a speed of about 10 miles an hour, when the goods engine thus approached it along a cross-over road the furthest extremity of which is 120 yards from the station platforms.

The two engines met with some degree of violence, and the goods engine was thrown off the rails, though not clear of the up line. The sides of the four first carriages of the passenger train struck it in succession, and these carriages were also thrown off the rails, and were more or less damaged, a pair of wheels having been forced from under one of them. Only two passengers appear fortunately to have suffered from the effects of the collision.

The coal train to which the goods engine had been attached left Ormskirk punctually at 2·55 for Bamber Bridge and intermediate stations, and reached Bamber Bridge about 4·20, consisting of an engine and tender, five loaded waggons, and a break-van. The engine was intended, after depositing the loaded waggons in the goods yard, to return with empty waggons to Ormskirk.

As soon as this train reached Bamber Bridge, it was shunted from the up to the down line, along the cross-over road previously referred to. The goods sidings, three in number, are all on the south or *down* side, and are connected with the down line by a pair of points about 40 yards further from the station than the points leading to the cross-over road, and with each other by two other pairs of points on the station side of the main line points. The loaded waggons were ultimately to be placed in No. 3 siding, furthest from the main lines; but they could not be turned at once into that siding, because it was occupied by the empty waggons which were to return to Ormskirk; and the guard determined, therefore, to turn them first into No. 1 siding, nearest to the main line. As the most convenient mode of effecting this, and of disengaging the engine from the front of the waggons, he adopted the operation called fly-shunting. He caused the engine to run at sufficient speed towards the points leading to the siding (which now became *facing* points), and therefore, also, towards those of the cross-over road; and, sitting at the back of the tender, he uncoupled the waggons from it by hand, as the engine driver shut off steam, and the engine temporarily slackened speed, at the proper moment. The engine-driver then turned on his steam again, and a goods porter, who stood at the siding points, after allowing the engine to run through on the down line, turned the waggons into the sidings; and the guard himself, jumping down from the tender, and running across in front of the waggons, turned them as they passed him through the proper points into the front siding.

The goods engine would thus have passed the cross-over road points safely, and would have proceeded along the down line without getting in the way of the passenger train, if it had not been for the interference of a foreman platelayer who happened to be standing close to the lever by which those points were worked. This man had been putting in a new crossing, and had just completed his work. He was about to leave the spot to go over his "own length," which was on the other side of the Preston Junction, when he heard, or believes that he heard, some one say, "Turn them across." He has no idea from whom this instruction came, but he pushed the lever of the cross-over road points over, and turned the goods engine across to the up line as the passenger train was approaching; and he thus caused the collision which I have described. He was not aware that the passenger train was coming up, and the goods engine and coal waggons, which were between him and that train, would no doubt have obscured it from his view.

There is no doubt that this foreman platelayer, Jeremiah Hodgson, who had been for 18 years on the same section of railway, and was for 12 years pre-