

station. When the shunter had put on the down distant signal to "danger" he walked a short distance (10 yards) towards Rochdale, stopped and stood there for a minute or better, with his back to the west, and then turned about, and walked towards the signalman's cabin; and when he had got close to it he saw the down train approaching, about 50 yards from him, and at this time the wheels of the first of the two waggons were just passing the points to cross from the up main line, across the down main line, and thence into the coal yard. The collision immediately followed, and is said to have taken place about 10 h. 44½ m. The engine of the down train came in contact with the leading coal waggon, knocked it off the road and shattered it to pieces, and threw the other coal waggon also off the line.

The engine was thrown off the rails to the left, ran about 50 yards, and fell over on its left side. Five carriages and a break van were also thrown off the rails, and the engine and four carriages were a good deal damaged, to the extent, it is estimated, of about 200*l*.

The train which had run into the coal waggons was the down mail train, appointed to leave Manchester at 10 h. 15 m. a.m. It consisted of engine and tender, and seven vehicles, with one set of continuous breaks worked from the guard's break van, the last vehicle but one in the train.

The driver and fireman of this train both state that the down signals were all at "all right" as they approached Rochdale station, and that when they were about 50 yards from the crossing at the Milkstone sidings they observed the waggons coming across from the up line, at which time they were running about 15 miles an hour. The driver then sounded the whistle for the guard's breaks, and the fireman put on the tender break, but it was too late to arrest the progress of the train. The guard of this train did not observe the distant signal until after the collision, and then it was on at "danger."

The mail train is due at Rochdale at 10 h. 45 m., and it was running to its proper time, and the collision occurred exactly at the time when the mail train was due at that spot. No blame attaches to the driver and fireman of the goods train for pushing the waggons back in obedience to the signal from the goods guard, as they did not know, when they backed the train, whether the coal waggons were about to be put into the sidings south of the main lines, or pushed across to the coal yard north of the main lines; but the guard of the goods train admits that "according

"to the regulations he should have looked to see that the distant signal was on before the waggons were pushed across the down main line, but it is not the usual thing to do it." And the signalman on duty informed me, "that a train does not always keep to its proper time, and I hold that I am justified in fouling a main line, by crossing waggons from one line to another when a mail train is due, provided the crossing is protected by my distant signal being on, and I can see that nothing is then approaching."

Strange to say, the company's book of regulations does not prohibit shunting even when a train is actually due to pass the place and on the line where the shunt is to be made. It is not, therefore, in my opinion, surprising that, with such regulations and such servants, who are responsible for the safe working, that collisions do occur on the Lancashire and Yorkshire railway.

I am altogether unable to reconcile the conflicting statements as to the distant signal. Whether it was on or not when the mail train passed it seems very doubtful; but I am rather inclined to think it might have been put on immediately after the mail train engine passed it.

Rochdale station requires to be re-arranged in order to provide for the public safety. Raised signal huts should be put up at the eastern and western ends of the station, and, possibly, a third in the centre. And as I understand that the directors of the Lancashire and Yorkshire Railway Company have authorized the line between Manchester and Rochdale to be worked on the absolute block system, I trust that it will be done in a complete manner, so that the line shall be wholly under the control of the signalmen at the telegraph stations; and that the points and signals shall be so arranged and interlocked that no engine or train can come out of a siding on to the running line without the consent of a signalman. Further, that no two trains should be permitted to approach a junction telegraph station from a main line and a branch line at one and the same time. I believe it to be far better to have nothing to do with the absolute block system for working traffic than to introduce it nominally, without placing the entire control in the hands of the signalmen.

I have, &c.,

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

W. YOLLAND,
Colonel.

Printed copies of this report were sent to the company on the 9th August.

LANCASHIRE AND YORKSHIRE RAILWAY.

Leeds,

17th September 1870.

SIR,

IN compliance with the instructions contained in your minute of the 14th instant, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances connected with the accident which occurred on the 13th instant in Upholland tunnel near Wigan on the Lancashire and Yorkshire Railway, through an express train from Liverpool to Manchester running off the line.

As the result of this accident, two passengers were unfortunately killed, another had his arm broken and head cut, and one or two others were shaken and bruised.

Upholland tunnel lies about 4½ miles on the west or Liverpool side of Wigan, Pimbo Lane station being about 300 yards west of its western end, and Upholland signal station and watering place for goods trains being about the same distance east of its eastern end. The tunnel is 955 yards long, and

the traffic through it is worked on the absolute block system, for which purpose there are telegraphic instruments at Pimbo Lane and Upholland stations. As an additional precaution, there are self-acting treadle signals at each end of the tunnel. These are put to danger when an engine passes over them before entering the tunnel, a bell being at the same time rung at the station at the other end of the tunnel. As soon as the engine or train, after emerging from the tunnel, has passed beyond the block station, the treadle signal is taken off by the signalman, and the line unblocked.

The line rises in approaching from the westward at a 1 out 1 in 390 up to the centre of the tunnel, whence it falls eastward at about the same rate, as far as Upholland signal station. The line through the tunnel is straight. The permanent way consists of double-headed rails weighing 80 lbs. to the yard, secured by outside keys and cast iron chairs weighing 48 lbs. each; these latter being spiked to rectangular sleepers, 10 in. × 5 in., laid at an

average central interval of 3 ft. The rails are fished at the joints.

Before breakfast on the morning of the 13th, a foreman platelayer named Ball, who had been for 6 years in charge of 2 miles of the line including Upholland tunnel, informed his gang, consisting of three men, that if the weather continued wet they would go into the tunnel to turn a rail. This rail was an outside one on the up line from Liverpool to Wigan, 380 yards from the west end of the tunnel, which rail Ball had on the previous morning observed to be badly crushed both inside and outside near its eastern end. Two of the gang, who had left their work on the previous afternoon to go to a public house, again went away a short time before the breakfast hour, and did not return. Nevertheless, after breakfast, (the weather continuing very wet), Ball said to his remaining man, Melling, who had been a platelayer for 8 years, "We'll take tools into tunnel, and turn rail," to which Melling states that he offered no remonstrance. At about 9 o'clock they accordingly entered the tunnel from the Upholland end, taking with them their tools and two naphtha lamps; went straight to the rail, of which they loosened the wedges, took out all the fish plate bolts, with the exception of one at each end, and chipped off as much of the crushed edge of the top table of the rail as they judged necessary to enable them to replace it without difficulty after turning it. Ball then left Melling in the tunnel, and went to Pimbo station, to see the inspector of the permanent way, who he thought would be arriving there by a train from Wigan due at 10.23, and to whom he wished to report the conduct of the two absent platelayers. The inspector, however, did not arrive, and Ball returned into the tunnel, with the intention, he states, of turning the rail after the express train from Liverpool due at about 11.30 had passed. A special goods train was, however, at this time just approaching, and Ball said to Melling, "After the goods is passed we'll turn the rail." Melling made no reply to this, and Ball states that, knowing the practice of the goods trains to stop at Upholland for the purpose of their engines taking water, he thought he would have a full ten minutes for doing his work, and would be during this time under the protection of the block signals at the Pimbo end of the tunnel, which would not be taken off until the goods train had left Upholland signal station; he also states that he did not look at his watch to see how long he had before the up express was due, but judged that there was at least ten minutes, as the down express from Manchester (due at 11.20) had not yet passed. As soon, accordingly, as the goods train had passed, (which from the entry in the signalman's book must have been at about 11.21 or 11.22,) Ball and his mate commenced turning the rail; they each released one of the two remaining fish-plate bolts, got the rail out without difficulty, and placed it bottom up on the top of the chairs ready to refix; they then, however, found that sufficient of the crushed surface at the Upholland end had not been removed to enable it to drop readily into the chairs at that end, and while they were hammering at it to try and force it down they saw the up express train approaching Pimbo Laue station. Ball upon this seized his lamp, and ran towards the mouth of the tunnel, waving it as he went. It was blown out when he had run about 200 yards, but he still went on until the train passed him about 100 yards inside the mouth of the tunnel, he shouting to the driver and fireman. Melling continued hammering at the rail till he saw that Ball's lamp had gone out, when he also ran towards the train, waving his. He, however, had not got back more than 40 yards when his lamp was also blown out; almost immediately after this the train passed him, he shout-

ing to the driver as it did so. Both men declare that they were so intent upon their work that they neither saw nor heard the treadle signal being taken off after the goods train had left Upholland.

The express train, which consisted of engine and tender, two third-class carriages, one second-class, one first-class, one second-class, and a guard's van, the last four vehicles coupled together with continuous breaks, had left Liverpool for Wigan and Manchester at 11 a.m., correct time, and was running to time, at a speed of probably from 30 to 35 miles an hour. On approaching the tunnel the signals were right for the train to proceed through it, and the fireman, who was standing on the right side of the foot plate, states that as they entered the tunnel he saw some platelayers move from the up to the down line, to get out of their way, as he thought, and the driver states that he saw the lights of men working in the tunnel; no one, however, acknowledges to have heard the platelayers shout, or seen them waving their lamps, though the driver and guard both state that they saw the treadle signal fly to danger after the engine had passed it. On reaching the gap in the outside rail, the engine gave some jumps, ran with its left wheel against the west end of the outside rail east of the gap, broke two pieces off this rail, mounted the remaining portion of it, and then ran into the left side of the tunnel, along which it continued to graze, until it and the tender, which remained coupled to it, came to rest in about 105 yards from the gap, both leaning against the side of the tunnel. The driver and fireman remained at their posts, the former holding on to the regulator, and managing to get the steam shut off, and the latter clinging to the hand railing. They were neither of them injured. The couplings between the tender and first carriage gave way, but the rest of the couplings all remained good, and the train came to rest with an interval of about 15 yards between the first carriage and the tender; all the vehicles were off the road, and were leaning over against the left side of the tunnel. The first carriage was much crushed, and it was in it that the unfortunate passengers were killed. The rest of the carriages were not seriously damaged, and the principal injury to the engine consisted in the fracture of the left cylinder. The loose rail was found lying along the inside of the chairs, not at all injured. The damage to the permanent way consisted in one rail and fourteen chairs being broken, one rail bent, and in about 50 sleepers being split or otherwise destroyed.

This accident was caused by the act of Ball, the foreman of platelayers, in proceeding to turn a rail without attending to the rules of the Lancashire and Yorkshire Railway Company, specially applicable to that operation; these rules state, 1st, that such a thing is not to be done within 15 minutes of a train being due; nor, 2nd, without a man being sent back 880 yards with a red flag and two fog signals, and that fixed signals are not to be looked upon as protecting the operation; these rules having been all completely neglected on the present occasion. Had the turning of the rail been a matter of any great urgency (which does not appear to have been the case, but to have been done because the weather was unfavourable for outdoor work), Ball should have obtained the assistance which he needed, in the absence of two of his gang, to carry out the precautions required by the rules of the company, before proceeding to execute so dangerous a piece of work.

It would be desirable that Pimbo station should be supplied with home signals, it having at present only distant ones.

I remain, &c.,
The Secretary
(Railway Department),
Board of Trade.

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