

exhibited during the night at those stations. The 2.30 a.m. down mail train for Boston and the east coast, left Peterborough that morning at 2.37 a.m., or seven minutes later. It consisted of engine and tender, one mail carriage, one passenger carriage, and a break van.

The driver informed me that it was very foggy when he left that station, and that the night got worse after leaving Peterborough; that he received an all right signal at St. James Deeping station, but did not see the signalman there; that their ordinary rate of running is about 30 miles an hour, and he was running at that rate, and did not see the tail lights on the van of the coal train in front of him until he was not above 50 yards from the break van, and then he immediately shut off the steam, reversed the engine, turned on the steam the reverse way, while the fireman applied the tender break, and he whistled for the guard's break, and sanded the rails, and he thinks his speed was sensibly reduced before he ran into the van at the rear of the coal train.

The fireman confirms the driver's statement, and they agree in saying that the collision took place about 3 o'clock.

The effect of the collision was to throw the break van of the coal train off the rails and to overturn it on to its right side, and to detach it from the waggon in front and to shatter it to pieces. The unfortunate guard was found under and amongst the debris of this van quite dead, with his brains dashed out on the floor. The waggon in front of the van, but detached from it, was broken up and off the rails, but stood close to another waggon which was also just off the rails; 11 more waggons remained on the rails in three detached lots at the scene of the collision. The waggons mostly belonged to private owners, and were with dead buffers and without spring buffers, and they were coupled together by central double coupling chains.

The right-hand buffer of the mail train engine was broken and the side step knocked off and the life guard bent. The carriages also were somewhat damaged.

The fireman of the mail train engine jumped off just as the collision took place, and was a good deal hurt by falling on his shoulder. The guard of this train was not aware that anything was wrong until he was pitched to the end of his van by the shock of the collision, and was hurt in the elbow and shoulder.

He was not sensible that there had been any diminution in the speed of the train, and he had not heard any whistle for his break, although his van was only separated by two carriages from the engine. Fortunately there were no passengers in this train.

The line at this part is perfectly straight and practically level.

The two trains passed St. James Deeping station, which is $5\frac{1}{2}$ miles from the spot where the collision took place at the following times:

Printed copies of this report were sent to the company on the 11th March.

LANCASHIRE AND YORKSHIRE RAILWAY.

Sm,
Edinburgh, 2nd February 1872.
I have the honour to report, for the information of the Board of Trade, in obedience to your minute of the 15th ultimo, the result of my inquiry into the circumstances that attended a collision between an express passenger train and a goods train, at the Todmorden station of the Lancashire and Yorkshire Railway, on the 11th ultimo; 10 passengers have complained of having been injured on that occasion, but it is believed that in all cases the injuries received are slight.

The down line at Todmorden station is protected by an elevated home signal at the gable end of a goods shed, at the eastern end of the down station platform, and by a distant signal 950 yards west of this home signal.

A branch to Burnley leaves the main line about

The special train of empty coal waggons at 2.37 a.m.,
And the mail train at - - - - - 2.51 a.m.,
according to the signalman on duty, who gave all right signals to both trains.

From the times stated by the driver, fireman, and guard of the mail train, of leaving Peterborough and of the collision occurring, the mail train appeared to have been travelling at an average speed of rather more than 34 miles an hour, not by any means an excessive speed, but somewhat faster than its appointed rate, which is a little over 30 miles an hour.

I cannot say that this collision was due to the neglect of any of the company's servants in charge of these trains or employed at stations on the route from Peterborough to the place where it occurred. The immediate cause was a thick fog, and the absence of such a system of working as renders travelling on railways during such thick fogs nearly safe. I allude to the working of the traffic, with the assistance of the electric telegraph, on the absolute block system.

The Great Northern Railway Company make use of the block system on many parts of their system where their traffic is very great, and it is said to be attended with good results, but I understand that it is not considered to be requisite on those parts of their system where the traffic is light.

I conclude that this partial adherence to the old established mode of working, instead of making use of the newer and admittedly safer system, is due to the same cause that caused Peakirk and Littleworth stations to be closed at night, a dislike to incur the additional cost of keeping them open. At Littleworth station there is moreover a level crossing of a public carriage road, on which the station master informed me, that there was, at times, a good deal of traffic at night, and the porter who acts as gate-keeper and lives in the lodge or gate house, has frequently to get up in the night to open the gates for the road traffic. As Littleworth is barely two miles from the spot at which the accident occurred, it is quite possible that if this station had not been closed at night and a signalman had been employed to attend to the signals and gates, and the company's regulations had been obeyed, which directs the danger signal to be kept on for five minutes after a train goes by, the collision might not have occurred, and the unfortunate guard would not so suddenly, and apparently without any notice whatever, have lost his life.

That result however could not have been reckoned on without slightly increasing the cost of working, a serious consideration to a company which is about to pay $8\frac{3}{4}$ per cent. to its shareholders from the last half-year's receipts.

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

I have, &c.,
W. YOLLAND,
Colonel.

300 yards to the east of this home signal; the junction is protected by the usual junction and distant signals, the down distant signal being a low double disc signal, placed about 75 yards east of the Todmorden home signal. The gradient through the station is 1 in 183, falling towards the east, and the line is on a curve of 50 chains radius. The elevated down home signal can be seen for a distance of about 560 yards, and the junction down distant disc signal, a distance only of 270 yards, before they are respectively reached, owing to the curve in the line and the interference of the station buildings with the line of sight.

It is stated to have been customary for many years to work the elevated down home signal in accordance with the indications of the Burnley junction down distant disc signal, so that when a train was due to pass through Todmorden station without stopping, if

the Burnley junction down distant signal stood at "danger," both the distant and home station signals would also be kept at "danger," but in the event of a train arriving from the west, and due to stop at Todmorden station, the down distant signal would be taken off, and the down home signal lowered to "caution," to allow the train to enter and stop at the station platforms; but this practice appears to have been changed for some time past.

The signal-box does not contain any printed or written instructions on the subject, and when making the inquiry I observed the down home signal lowered to "all right," for a stopping train, when the junction down distant signal stood at "danger."

It is stated that the 4h. 0m. a.m. down goods train from Oldham Road reached Todmorden station about 10h. 15m., according to the driver, or at 10h. 11m., according to the station master, considerably after its proper time, and when it arrived the station-master told the driver to draw ahead, on to the Burnley branch down line, as the 9h. 45m. a.m. down express passenger train from Manchester to Bradford was then nearly due to run through Todmorden station without stopping. The goods train accordingly proceeded towards the junction, but the driver found that he could not go on to the Burnley branch down line as it was occupied by a coal train, and, in consequence, he was obliged to bring his train to a stand on the main down line, behind another goods train which was engaged in marshalling and shunting on the main down line, farther to the east. It was then intended that this 4h. 0m. a.m. down goods train should be shunted on to the up main line, to be out of the way of the down express train, but there was an up train from Normanton to Oldham standing on the up main line between the junction and the station, behind the up Bradford (market) express train, which was then alongside of the up platform, and thus it became impossible to shunt the 4h. 0m. a.m. down goods train to the up main line.

The station master and ticket collector both went to the west end of the station, the former to get the up line clear for the up Bradford (market) express train to proceed, and the latter to tell the shunter not to foul the down line with the pilot engine; and when the shunter had promised not to do so, the ticket collector signalled to the man at the elevated home signal-box that the down line at the west end of the station was clear. When he did this the up Bradford market express train had just left the station. The signal thus given appears to have been misunderstood by the signalman at the elevated home signal-box.

The man in this box had been six months in the company's service, and he had only been one week-day in this signal-box before the day on which the collision occurred, but he had been doing duty as relieving man for about two months on Sundays. He says that the station master had told him to be very careful, but did not tell him to work the down home signals in accordance with the Burnley junction signals; but he told him not to take off his signals without instructions from him or the foreman-porter. He says also that he had been told that when a train from Manchester was expected to stop at the station, to lower the down home signal to "caution," but had not received any instructions about non-stopping trains; that he received a signal from the ticket collector that all was clear at the western end of the station, and then he took off the down distant signal, and lowered the home signal to "caution," at which time both the down distant and home signals were at "danger" at the Burnley junction.

The statements with respect to the down home signal do not agree. The signalman, station master, and Burnley junction signalman all state that this signal was only lowered to "caution," while the driver and guard of the down express train say that it was off altogether. Practically, this is of very importance, as the drivers regard and treat "caution"

signals as if they were "all right" signals, inasmuch as at the points of greatest danger, the junctions, the distant signals can only be lowered to "caution." I strongly recommend all railway companies to get rid of this "caution" signal, and to have only two signals, "danger" and "all right" signals, represented by the arms up and arms down by day, and by red and green lights by night, as, by this means the white lights in the stations cannot then be mistaken for signal lights for trains.

The 9h. 45m. a.m. down Bradford market express train consisted, on this morning, of engine and tender, five carriages, and one van; and the driver informed me that, as he approached Todmorden station, running for a considerable distance with the steam shut off, he found both the distant and home signals off, for him to proceed through the station without stopping. The driver and guard say they were running about 30, and the station master names 30 to 40 miles an hour. The driver said there was steam rising from an engine in the yard, and on passing through the stream he observed that the junction down distant signal was on at "danger" against him, and he whistled for the guard to put on his break, reversed the engine, and turned on the steam the reverse way, while the fireman and himself sanded the rails. He and the guard think they had reduced the speed of the train to about 10 miles an hour, and the Burnley junction signalman to 16 miles an hour, when the collision took place, about 10h. 27m. a.m., a few minutes after the usual time when this train runs through the station. The tail of the goods train stood about 20 yards west of the Burnley junction signals. The train was fitted with continuous breaks on five out of the six vehicles which, with the engine and tender, made up the whole train.

The effect of the collision, which was somewhat lessened by the goods train having just begun to move ahead, was to throw off the break-van and four of the waggons of the goods train, and to somewhat damage them, and to break the buffer beam of the passenger train engine.

The collision was due to the insufficiently instructed and inexperienced signalman having taken off the down distant and home signals for the down express train to pass through the station when the main down line was blocked at the Burnley junction, and when the junction signals were both on at danger. It seemed to me that this act was due to want of knowledge, and not to neglect.

The company had recently lost an experienced signalman from this post, and were, in consequence, obliged to supply his place by an inexperienced man. The station master should, however, have taken care that he knew how to perform his duty.

The practice which had been long in operation, of lowering the down home signal to "caution" or "all right" for a stopping train to enter the station, was entirely unnecessary, as the engine would not require to pass this signal when the train stopped alongside the down platform; and, situated as the junction is, quite close upon the station, the signalman should be prevented, by mechanical locking, from taking off the down home signal, until permitted to do so, by the act of the junction signalman.

In other words, the down home signal should serve as the down distant signal for the Burnley junction, and thus an unnecessary signal might be got rid of.

It may, however, be remarked, that this collision would not, in all probability, have occurred at all, but for the want of sufficient siding accommodation at the Todmorden station.

The lines in each direction were absolutely blocked up with trains, and the work, in consequence, was done with great difficulty and increased risk.

I have, &c.,
The Secretary, W. YOLLAND,
Railway Department, Colonel,
Board of Trade,
&c. &c. &c.

Printed copies of the above report were sent to the company on the 21st February.