

the train passed through the points or not, because, he says, he was taking his dinner at the time.

The signalman produced his book, in which he entered in pencil "Bury, 11.34," and stated that he made this entry before the accident and while the train was passing his cabin. The signalman and the relieving man had been in the cabin from 8 o'clock until 11.34 a.m., when the accident occurred. According to the signalman, during those three hours and a half, the relieving man asked him from time to time what levers he should pull over for the different trains, and when instructed by the signalman he pulled the different levers over. That system of working went on for several of the goods trains up to the time of the accident; but the signalman states that he himself worked the signals for the passenger trains,—there being no points to work for those trains. The signalman states, also positively,—in contradiction, it will be observed, to the evidence of the relieving man on their being separately cross-examined—that he did everything that related to the particular train to which the accident occurred; that he worked the telegraph block-instrument and the needle-instrument, as well as the signal-lever, for that train; that the relieving man was getting his dinner at the time, and had begun his dinner about five minutes before the telegraph-signals were made for the train; and that the relieving man must have seen him throw his signal to danger after the accident, because he called out to him before doing so, "Joe, there is a carriage off the line." The signalman adds that the relieving man got up while he was throwing the signal on, but that he did not tell him that he had turned the signal on, and that he did not afterwards say anything to the relieving man, or have any conversation with him on the subject of turning the signal to danger after the accident; as well as that his levers had always worked properly since he had been in the cabin.

I have thought it right thus to quote, in the desultory manner in which it was given, the principal points resulting from the cross-examination of the above witnesses. The disagreement which will be observed on material subjects is an indication that their statements are not reliable. But there were other witnesses to the accident. There was an engine-driver standing on a pilot-engine, about 70 yards on the east of the facing-points, on the down line; and there was a shunter about 70 yards from the facing points on the west, waiting to attach wagons in the siding to the pilot-engine; while the pilot-engine was waiting until after the passenger train from Bury had passed to cross over from the down main line to the up main line, and pass through the facing-points into the loop sidings. These men saw the passenger train run past as they thought at a speed of about 12 miles an hour. The engine-driver believed that the carriage was the first to leave the rails, but the shunter was not able to say which vehicle first left the rails, though they both noticed that the carriage-truck was the first to tumble over on its side. The engine-driver had told the signalman, in passing to the down line, previously to the arrival of the Bury train, that he wanted to go into the loop sidings; and the signal-

man made a motion with his hand which was meant to say "stop till the train has passed." The engine-driver also saw the signalman lower his home-signal for the Bury train, but he did not observe when the signal was again turned to danger. The shunter did not see it lowered or turned to danger. The engine-driver noticed a mark on the check-rail, and a track on the ballast, as of a vehicle having left the loop-line at that point, and the shunter noticed the same thing. A foreman in the locomotive department and an assistant foreman in the permanent way department speak to the same mark on the check-rail and track in the ballast.

In examining the third-class carriage and the carriage truck, I found that the axles of the former were both slightly bent, no doubt as the result of the accident, and that the rear trailing axle-guard of the latter had also been bent. The play in the axle-brasses of the carriage was very slight,—only about  $\frac{1}{16}$ th of an inch,—as they were nearly new. One pair of wheels had been knocked from under it in the course of the accident. The play in the axle-brasses of the carriage-truck was excessive, amounting to from  $\frac{1}{8}$ ths to  $\frac{3}{8}$ ths of an inch. The wheels of both vehicles were in good working order.

Judging from the marks above described and shown on the diagram, from the evidence as to how this accident occurred, from the conflicting statements of the signalman and the relieving man in the cabin, and from all the circumstances of the case, it would appear that the signalman must have turned his home-signal to danger, and pulled over his facing-points, before the whole of the Bury train had passed through them. By doing so, he no doubt caused certain of the wheels at the tail of the train to run along the loop line, whilst the remaining wheels of the train ran along the main line; the carriage-truck, the third-class carriage next in front of it, and the trailing wheels of the third-class carriage in front of that one, were thus thrown off the rails of the main line; and the carriage-truck and one third-class carriage fell on their sides in the position shown in the diagram. It will have been observed that a pilot-engine was waiting to pass through the facing-points along the loop-line as soon as the Bury train had gone by; and that the next operation of the signalman, after the passage of the Bury train, would have been to pull over either the points of the loop-line or those of the cross-over road between the down and the up main lines.

A locking-bar in front of the facing-points, would in this instance have been very valuable as a means of preventing such a mistake on the part of the signalman. When the points had once been set for the train, and the train had entered upon them, the wheels, resting upon the locking-bar, would then have prevented the signalman from moving it or from altering the points until the whole of the train had passed them.

I have, &c.,  
H. W. TYLER.

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

Printed copies of the above report were sent to the Company on the 12th September.

## LANCASHIRE AND YORKSHIRE RAILWAY.

SIR,

*Furness Abbey, 28th January 1874.*

In compliance with the instructions contained in your minute of the 16th August 1873, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances which attended the collision that occurred on the 13th of that month at Burnley station, of the Lancashire and Yorkshire Railway.

Three passengers are reported to have been slightly shaken.

Burnley station is approached from the north on a falling gradient of 1 in 150. The passenger station is situated at the east side of the railway. It is a one sided station, and is placed on a loop line, which joins the main up and down lines at the north as well as at the south end of the station. The junction-signals

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and points of this loop line are worked by signalmen, who are stationed in raised cabins that are placed opposite to the north and south junctions. The loop line, which is a single line about a quarter of a mile long, is worked on the block telegraph principle.

On the day in question, the 10 a.m. passenger train from Colne to Preston consisted of an engine and tender, a horse-box, a guard's van, with a guard and three coaches. It left Colne at its proper time, and after stopping at the two intermediate stations, it reached the loop line junction at the north side of Burnley station at 10.15 a.m.

The distant-signal was at danger as the train approached, but it was lowered as soon as the engine-driver whistled for it.

This man stated that he gave one long whistle, to let the signalman at the Burnley north junction know that he wanted to go on to the platform loop line. He affirmed that the junction home-signal for the loop line was lowered, but that when the passenger train was about 70 or 80 yards from the north junction, the home-signal for the loop line was put up to danger, and the junction home-signal for the main line was lowered. The passenger train was running at a speed of 7 or 8 miles an hour at the time. As soon as the engine-driver perceived that his train was running on to the main line, instead of going on to the loop line, he reversed his engine, whistled for the guard's breaks, and the fireman applied the tender-break, but the train was not stopped before it struck some empty goods waggons that were standing on the main line, inside the junction and clear of the loop line.

The speed of the passenger train had been checked to about 3 or 4 miles an hour at the time of the

collision. No vehicles of either train were damaged or left the rails.

The signalman on duty stated that he forgot to alter the points for the passenger train. The normal position of these junction points is to stand right for the main line, and it is not practicable to lower the signal for the loop line while the points are right for the main line.

The main and loop line signals are fixed one above the other on the same post; and the engine-driver of the passenger train, who was a spare engine-driver, and who was in the habit of driving goods trains, which always pass Burnley station on the main line, as well as passenger trains, that always pass the station on the loop line, does not appear to have observed that the main line signal was lowered for him instead of the passenger or loop line signal, which was the signal that he wanted.

The accident was caused by the signalman on duty at Burnley north junction, not placing the points and signals right for the passenger train before it arrived, and by the engine-driver of the passenger train failing to observe that the points were wrong, and that the wrong signal was given to him.

The signalman candidly confessed his mistake. He has since left the company's service, but the engine-driver endeavoured to excuse himself, by stating that the signals were changed at the last moment.

I do not think that this was the case.

I have, &c.,  
F. H. RICH,  
Colonel, R.E.

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

Printed copies of the above report were sent to the Company on the 14th February.

## LANCASHIRE AND YORKSHIRE RAILWAY.

SIR,

*Manchester, 29th August 1873.*

In compliance with the instructions contained in your minute of the 23rd instant, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances which attended the collision that occurred on the 18th instant at the Newtown siding on the Lancashire and Yorkshire Railway.

In this case a train of empty carriages was being shunted across the down main line from Manchester to Miles Platting, when it was run into by the 3.50 p.m. passenger train from the Victoria station, Manchester, for Leeds. A first-class carriage was smashed to pieces, and several other carriages in the empty carriage-train were more or less damaged. The engine and tender of the passenger train, as well as all the vehicles of that train, remained on the rails. No damage was done to the passenger train, except the fracture of a buffer-plank of the engine. No person was injured.

The Newtown sidings are about half a mile from the Victoria station at Manchester, and are situated on a steep incline between that station and Miles Platting. There is a signal-cabin at half a mile from the Victoria station, and opposite to it there is a through-crossing, with slip-points connecting the Newtown sidings with the up and down main lines.

The Newtown signal-cabin, which is No. 2 block-cabin from the Victoria station, has within the last six months been fitted up by Messrs. Saxby and Farmer with locking-apparatus, and with their latest improvements. The cabin is also supplied with Mr. Preece's telegraph-apparatus, and this portion of railway is worked on the block system. For the protection of the cross-over road, there are a home-signal, 50 yards from the cabin, and a distant-signal,

about 530 yards from the south of the cabin. The gradient being so steep, the telegraph-instruments are used, and the block system is in force, to No. 3 block cabin only, but the ordinary signals are relied upon, without the assistance of the block-telegraph apparatus, towards No. 1 cabin, when the through-crossing is employed. As the through-crossing fouls the down main line inside of the home-signal, it is considered that without infringing the rules of the block system a train may be allowed to shunt from the sidings across the down main line to the up main line, opposite to the signal-cabin; and it is believed to be the less necessary to use the block instruments in this case because the Newtown cabin is approached from the Victoria station on a rising gradient, as already stated, of 1 in 50. The distant-signal is well seen by an engine-driver leaving the Victoria station, but the home-signal for the Newtown cabin is not well seen by an approaching engine-driver. The arm is partially obscured by telegraph-wires, posts, carriers, and conductors, which obstruct the view of it even on a clear day.

The 3.50 p.m. passenger train left the Victoria station at 4.8 p.m., 18 minutes late, on the day in question, consisting of engine and tender, eight passenger carriages, two break-vans, a horse-box, a carriage-truck, and a pilot engine and tender, which was assisting by pushing it up the incline. This train had been delayed in starting, in consequence of the late arrival from Liverpool of a through train which was due to precede it to Leeds. When it left the Victoria station the engine-driver found the distant-signal from the Newton sidings cabin at caution, to which only that signal is lowered. He states he had no occasion to whistle for it because he found it at caution the moment he sighted it. He also