

Please refer to ... office.

LONDON MIDLAND AND SCOTTISH RAILWAY.

Ministry of Transport,
4, Whitehall Gardens,
London, S.W.1.

11th April, 1935.

SIR,

I have the honour to report, for the information of the Minister of Transport, in accordance with the Order of 24th January, 1935, the result of my Inquiry into the accident which occurred at about 6.26 p.m. on January 18th at Moses Gate, near Bolton, on the London Midland and Scottish Railway (former L. & Y. section).

The 6.5 p.m. down passenger train from Manchester (Victoria) to Bolton, while running under clear signals at about 25 miles an hour, collided with the rear of a train of empty coaches, which was stationary on the Down Main line about 100 yards beyond the Moses Gate down starting signal. Minor injuries or shock were sustained by 23 passengers, and complaints of shock were subsequently received from a further nine; first aid was promptly rendered by the Police to two of the injured, who were able to proceed to their homes afterwards. The fireman and guard of the passenger train also sustained minor injuries and shock.

The empty stock train consisted of four bogie coaches, drawn by 2-4-2 type tank engine No. 10811, running chimney first. The overall length of the engine and train was about 268 feet, the total weight being about 155 tons. The 6.5 p.m. passenger train was composed of five bogie coaches, drawn by 2-4-2 type tank engine No. 10709, running bunker first, and weighting in full working order about 56 tons. The overall length of the engine and train was about 332 feet, the total weight being about 200 tons. The vacuum brake was in operation on all wheels of the coaches of both trains and on the coupled wheels of the engines, the brake power, with 20 inches of vacuum, being about 78 per cent. in the case of the empty stock train, and 90 per cent. in the case of the passenger train. Both engines had left hand drive.

Damage to the engine of the passenger train was confined to the bunker, and to the rear buffer beam (leading at the time of the accident) and rear end of the frames, which were bent. The leading coach of this train had its head-stocks damaged, and the fifth, or rear, coach had an axlebox broken; elsewhere in the train the damage was trifling. This train had shock-absorbing buffers on all vehicles except the leading one.

The empty stock train suffered more severely. Its two leading coaches had their headstocks and buffers damaged, and telescoping took place between the third and fourth coaches, the underframe of the fourth mounting that of the third and penetrating it for some 30 feet. In addition to the damage so caused, the rear end of the fourth coach was badly smashed, and the body demolished for about 9 feet, by the bunker of the passenger train engine. The vehicles of this train had ordinary buffers and, in the case of the three rear coaches, steel underframes; the underframe of the leading coach was of composite construction.

The night was dark, but visibility was good.

Description.

At Moses Gate the general direction of the line from Manchester to Bolton is from east to west, this being the down direction. The gradient rises for down trains, varying between 1 in 280 and 1 in 237. On the Manchester side of Moses Gate signal box the line is double, but in the Bolton direction there are up and down goods loops, worked on the permissive system, to the north and south respectively of the up and down main lines. The connections between the main lines and the loops are immediately outside the signal box, which is on the north side of the line; east of it there are sidings on either side of the main lines. There is also a group of carriage sidings, on the south side of the line, opposite to the box, to which access is obtained through a trailing connection in the down loop, about 260 yards west of the box, close to Green Lane overbridge; this overbridge has two spans, with a pier between the up and down main lines.

A diagram of the layout, showing the points and signals concerned, and approximate distances, is attached to this Report, from which it will be seen that one arm (No. 6) of each of the miniature semaphore signals controlling exit from the sidings on the up side, east of the signal box, applies to movements to both the down main line and the down loop. The position of the down starting signal (No. 4), between the up and down main lines, and of the backing signals at the carriage sidings points, between the down main line and the down loop, should also be noted. A gentle curve, right handed for down trains, and the girders of Green Lane overbridge, make it difficult to determine from the signal box on which line a train west of the bridge is standing. The carriage sidings lie roughly parallel with the down loop, the intervening space being some 10 yards. The nearest signal box to Moses Gate in the Manchester direction is that at Kearsley, about three miles distant. There are three intervening stations, at Kearsley, Farnworth, and Moses Gate, the running time for the section being about three minutes for non-stopping and eight minutes for stopping trains.

Report.

The empty carriage train was propelled from Bolton to Moses Gate, on the up loop, in order that it might be stabled for the night in the carriage sidings, and entered the up sidings preparatory to crossing over to the down side of the line. When this movement took place, the train ran forward along the down main line instead of along the down loop, as was intended. It came to a stand with its rear end a short distance beyond Green Lane overbridge, but in the meantime the signals had been lowered for the 6.5 p.m. passenger train, and the collision occurred before the guard reached the signal box to inform the signaller that the down main line was obstructed.

The driver of the empty stock train, R. W. Pettit, said that he had worked it on several previous occasions, but that as its speed was low when he passed the signal box after leaving the up sidings he did not notice the absence of the jolt which would have occurred if the train had been diverted from the main line through the facing crossover (No. 27). He was driving from the left hand side of the footplate, but did not realise, in the darkness, that instead of the space between the loop and the carriage sidings, there was a line of rails immediately on his left. He could not recollect whether he had seen the down starting signal or not, but added that he was not looking for it, as he thought that he was not on the line to which it applied. He stated that he began to look out of the cab, towards the rear of his train, when he reached Green Lane overbridge, expecting to receive a lamp signal from the guard to indicate that the train was clear of the carriage siding points, that he then noticed that the abutment of the bridge was further from him than it should have been, and realised for the first time that his train was on the down main line.

Pettit said that he then applied the brake at once, and sent his fireman back as soon as the train stopped to ascertain if the guard was carrying out Rule 55. It did not occur to him to attract the signaller's attention by a series of "pops" on the whistle. He thought that his train had been stationary for about three minutes and that the brake had been partly released by the action of the small ejector when he saw the 6.5 p.m. passenger train approaching; he then jumped from the footplate.

With regard to the signals controlling exit from the up sidings, Pettit explained that though he had been working on the former Lancashire and Yorkshire section for seven or eight years, he had never shunted from the up sidings to the up loop or to the ballast siding, and consequently had never seen No. 7 signal lowered. He added that he had always run from the up sidings to the down loop, and never to the down main line, and that until after the accident he had always thought that No. 6 signal, which was lowered for him on this occasion, led to the down loop, and No. 7 to the down main line.

Pettit's fireman, S. Baron, had commenced to fire shortly after leaving the up sidings and was so engaged until just before the train stopped; he did not notice Green Lane overbridge as the engine passed below it and was unaware that the train was not on the down loop until Pettit drew his attention to it. He said that he went back to the rear of the train without delay, taking with him an enginemans' handlamp, which was already lit, but which was not provided with a

red glass. When he reached the van the guard was not there; as he could hear the 6.5 p.m. passenger train starting from Moses Gate station (about 1,000 yards away) he shouted to Pettit, from the left hand side of the train, hoping to get him to draw ahead, but without effect. Baron then took off the tail lamp, which was burning well, and ran along the down main line towards the approaching train, waving this lamp; he had travelled some 80 yards, to the Moses Gate side of the overbridge, when he met the train, and stepped aside into the space between the down loop and the down main line. He thought that it passed him at about 30 miles an hour.

F. Sellars, who is a porter employed at Bolton, was acting as guard of the empty stock train. He had not been passed as a guard, but received instructions from an inspector to take charge of the stabling of the empty coaches, a duty with which he was familiar. When the train was near Green Lane overbridge he lowered the left hand window of the van to look out for the carriage siding connection, and said that the light of a street lamp enabled him to see the down loop alongside the line on which the train was running; he realised that a mistake had been made, and applied the vacuum brake. Thinking that the signalman might have been under the impression that the empty train was to run to Bolton he started to walk back to the box as soon as it stopped, taking with him his handlamp, which was showing a white light; he had no detonators. He stated that he walked along a path on the north side of the up loop for safety, and shouted to the signalman when he was about halfway to the box, but received no reply. He then saw the 6.5 p.m. passenger train approaching about 100 yards away, but had not heard it leaving the station. As there were signal wires in the way he did not cross to the down main line, but waved his lamp, which he had changed to red, from where he was.

Sellars said that he had been trained as a shunter, and had been in charge of carriage shunting movements at times during the past two years. He explained that when stabling trains at Moses Gate at night it was his custom, after the train had come to a stand on the loop, and while walking back to verify the position of the hand worked points in the sidings, to wave a white light to inform the signalman that the carriage siding points in the loop could be turned for the train to set back.

The driver of the 6.5 p.m. passenger train, J. Houghton, saw nothing of the stationary vehicles until the collision was imminent. His train had been brought almost to a stand at the Moses Gate outer home signal, but he said that when starting from the station he could see that the inner home and the starting signal had both been lowered for him; as his engine was running bunker first he was on the right hand side of the footplate, in the direction of travel. When approaching Green Lane overbridge he could see that the Burnden Junction distant signal, some two or three hundred yards beyond it, had also been lowered for his train, but this last signal then unexpectedly disappeared, and on looking round the side of the cab he could just distinguish a dark mass ahead; he thought that he was a few yards west of the bridge when he noticed this. He managed to close the regulator and to apply the brake before the collision occurred, but had no time to reverse, and thought that his speed at the time was about 22 miles an hour.

Houghton said that he did not see the red light displayed by porter Sellars from the up side of the line, but that when nearing the overbridge he saw a moving red light ahead. Owing to the slight curve it did not appear to him to be on the down main line, and he concluded that someone was removing a tail lamp from a train of carriages standing on the down loop, preparatory to shunting them back into the sidings; he added that he had often seen this being done previously, and thought that if the tail lamp had not been removed from the stationary train he would have appreciated its significance.

His fireman, J. Axford, had started to fire when the train left Moses Gate station, and then commenced to sweep the footplate, as the enginemmen were due to be relieved at Bolton, the next station; he was so engaged when the collision took place and said that he had seen no hand signals from the ground. When going forward to protect the train, immediately after the accident, he noticed that the Burnden Junction distant signal was "off."

The signalman on duty at Moses Gate was Thomas Knowles, who had been stationed there for over 30 years. He said that the box was a fairly busy one, and that the movement of empty trains from the up loop to the carriage sidings

was a common occurrence. He stated that the empty train in question had arrived on the up loop at 6.12 p.m. but was kept waiting in the up sidings until 6.22 p.m. for an opportunity to cross to the down side. In the meantime trains on the up main line had passed at 6.12 p.m., 6.15 p.m. and 6.22 p.m. In the down direction a passenger train passed at 6.14 p.m. and was followed, at 6.19 p.m., by a coal train, which was sent forward on the down loop. Knowles said that, in accordance with his usual practice, he restored the facing points (No. 27) to normal after the passage of the coal train and he could not account for his failure to reverse them again preparatory to letting the empty stock train out of the up sidings, three minutes later.

He had accepted the 6.5 p.m. down passenger train at 6.20 p.m., and received the Train Entering Section signal immediately afterwards, but the time taken by a stopping train to traverse the section was sufficient to allow the crossing movement to be made; in this connection he explained that as a distance of nearly 600 yards separates the inner and outer home signals, it was quite in order to initiate this movement under the protection of the last named signal. As the passenger train had been accepted by Burnden Junction, the box ahead, he lowered his signals for it shortly after the empty stock train reached, as he thought, the down loop; he could not explain his failure to realise that it had not been necessary to restore No. 27 facing points to normal behind it, adding that he was not hurried in any way, and had no outside worries to account for his lapse.

Knowles was entering up his train register when the empty stock train passed the signal box, and, on seeing its tail lamp shortly afterwards, did not realise that it was on the down main line. He saw porter Sellars' white light moving in the distance, probably as the latter was descending from the van, and thinking that this was the signal that the train was ready to set back, reversed the carriage siding points and lowered the appropriate signal. He heard Sellars shouting later, but could not make out what he said, and concluded that he was coming to tell him that the carriage siding points were not fitting properly; he did not see the attempt which Sellars made to stop the passenger train by waving a red light.

Conclusion.

It is clear that the cause of this accident was the failure of signalman Knowles to set the road correctly before allowing the empty stock train to leave the up sidings, but it is difficult to account for this lapse on his part: he frankly acknowledged his responsibility and expressed his sincere regret. He is a man of 59, with nearly 41 years service, during 37 of which he has been a signalman: his record is a very good one.

At the same time, I am of opinion that the actions of driver Pettit are open to serious criticism. He appears to have been slow in stopping the empty stock train when he realised, at Green Lane overbridge, that it was not on the down loop, for he cannot have been running fast at the time and his engine was some 190 yards beyond the bridge when the train came to a stand; had he stopped at once, porter Sellars might have reached the signal box before it was too late to stop the passenger train. Moreover, the lowering of the Burnden Junction distant signal, which was clearly visible ahead of him, should have warned him that another train was approaching, and even when he saw the headlights of that train he did not endeavour to lessen the impact by starting his own, but left the footplate without fully releasing the brake. Therefore I am unable to avoid the conclusion that greater alertness on his part would have minimised the force of the collision, or possibly prevented it entirely. He also admitted that he had been in ignorance of the significance of the two arms on the signals controlling exit from the up sidings, though he had been working on the Lancashire and Yorkshire section for seven or eight years, and had last signed the Route Card for the Manchester-Bolton line on 5th January, 1935.

I do not think that the actions of porter Sellars and of fireman Baron can be criticised. The former was at the time, in effect, a shunter in charge of a rather prolonged shunting movement, and it would scarcely be reasonable to expect him to be in possession of the full equipment of a guard for this: his action in taking the most direct route to the signal box, to tell the signalman that a mistake had been made, was a natural one. Similarly, I consider that Baron was doing his

best to avert the collision which he saw to be imminent when he provided himself with the only available danger signal, the tail lamp of the empty stock train—I refer to this point below.

Remarks and Recommendations.

The arrangement of the signals at the exit from the up sidings, whereby the same arm (No. 6) leads either to the down loop or to the down main line, depending upon the position of the facing points ahead, is not altogether a desirable one, especially as other signals having a similar function, such as that at the exit from the down sidings, are provided with separate arms for each of the two paths available. No recent alteration has been made to the signals in question: indeed signalman Knowles informed me that their two arms (Nos. 6 and 7) had had their present significance ever since he had been at Moses Gate, that is to say for some 30 years. But it appears likely that the provision of an additional arm at each signal location, or alternatively of separate interlocked levers in the frame to work the top arms, depending on whether No. 27 points are normal or reversed, might have prevented this accident; in this connection it should be borne in mind that at present No. 6 arm is a "right away" signal when the points are set for the down loop, and that it leads up to the starting signal (No. 4) when No. 27 points are normal. I therefore recommend that the Company should be asked to consider an alteration of the signalling on the lines suggested above.

With reference to fireman Baron's attempt to stop the passenger train, it seems desirable that enginemmen should be able to show a danger signal to drivers of other trains when performing protective duties at night. The pattern of handlamp supplied in this instance was not capable of showing a red light, and I think that the Company should be asked to consider this point.

A further point arises in connection with the practice of removing the tail lamp from a train about to enter the carriage sidings before it leaves the down loop, which driver Houghton stated to be a common one. If this is the case, I am of opinion that instructions should be issued prohibiting it, inasmuch as the down loop is worked permissively, and the absence of a tail lamp from vehicles standing upon it at night introduces a wholly unnecessary risk.

I have the honour to be,

Sir,

Your obedient Servant,

E. WOODHOUSE.

Lieut.-Colonel.

The Secretary,
Ministry of Transport.

MOSES GATE L.M.S. RLY.

Accident on 18.1.35.

