

The  
**VIRTUAL MUSEUM**  
of the  
**LANCASHIRE & YORKSHIRE RAILWAY**

Accident Reports.

22 May 1902

BoT Report into Accident at  
Liverpool Exchange.

(4 Pages).

Second-class carriage, No. 548.—One axle box, 2 wheel bolts, 2 step-boards, Westinghouse brake pipe, and 1 fascia panel broken; 1 coupling, 1 buffer and 1 draw-bar bent; tyres bruised.

Second-class carriage, No. 547.—One step-board broken; 1 buffer bent.

*Damage to Permanent Way.*

Ninety-seven chairs broken; 40 check chairs broken; 12 crossing chairs broken; 3 30-foot rails broken; 2 17-foot wing rails broken; 1 diamond crossing destroyed; signal rodding destroyed; 1 girder end severely injured.

Printed copies of the above Report were sent to the Company on the 11th June.

LANCASHIRE AND YORKSHIRE RAILWAY.

Railway Department, Board of Trade,  
8, Richmond Terrace, Whitehall, London, S.W.,

June 7th, 1902.

SIR, I HAVE the honour to report for the information of the Board of Trade, in compliance with your Order of the 26th May, the result of my inquiry into the causes of the collision, which occurred on the 22nd May, between a passenger train and buffer stops at Exchange Station, Liverpool, on the Lancashire and Yorkshire Railway.

In this case the 8.40 a.m. passenger train from Hall Road to Liverpool came in contact with the hydraulic buffer stops at the end of No. 10 road at the Exchange Station.

The train in question consisted of a four-wheels-coupled radial tank engine running bunker first, fitted with automatic vacuum-brake and hand-brake working the same blocks on the four coupled wheels, and of the following 14 vehicles in order named:—

					Wheels.
Third and van	...	...	...	...	6
Second-class	...	...	...	...	4
First-class	...	...	...	...	6
Third-class	...	...	...	...	6
Van	...	...	...	...	4
Two second-class	...	...	...	...	4
Three first-class	...	...	...	...	6
Three third-class	...	...	...	...	6
Third and van	...	...	...	...	6

These were fitted with the automatic vacuum-brake on all wheels except the centre pair of the six-wheeled vehicles, and the vans had the usual hand-brakes. All the brakes are stated to have been in excellent order. Eight of the carriages were fitted with short buffers.

Several passengers complained of slight injuries.

No damage was done to the engine and permanent way, but the valves of the buffer stops were injured.

Details of damage to rolling stock are given in the Appendix.

*Description.*

For incoming trains, No. 10 road in the station, which is alone concerned, is on a falling gradient of 1 in 263 for the last 11 chains to the buffer stops, and this is the length of the platforms, which are entirely covered in.

Beyond this the line is on a falling gradient of 1 in 166 for 4 chains, and beyond that practically level. Signal-box "A" is at the commencement of the 1 in 166 gradient, *i.e.*, 15 chains from the buffer stops, and cabin "B" is 11 chains further away.

At 200 feet away from the buffer stops are the points of a crossing to No. 9 road.

It was raining hard at the time of the accident, but the rails in the station being under cover would be fairly dry.

*Evidence.*

*Mr. Wood*, station-master, Liverpool, stated: When the 8.40 a.m. Hall Road to Liverpool passenger train was arriving on the west lines, on May 22nd, I was standing outside our east main line inspector's cabin, and I noticed the train as

it was going past "A" signal box, and it appeared to me to be travelling too quickly, hence I tried to attract the attention of the driver and fireman by shouting, but apparently was unable to do so as they would only have a momentary view of me as

they passed behind some coaches standing between me and the train. It was a wet morning but the rails in the station were dry. The hydraulic buffers at the end of No. 10 road were in good working order and in a proper position prior to the arrival of the train from Hall Road. From the speed of the train when I saw it passing "A" signal box, I anticipated an accident. I heard the contact of the engine with the buffers, and as speedily as possible went to the train and rendered all the assistance I could to the passengers who were injured. I asked the driver what was the matter, and he said "The wheels skidded and I ran into the buffers."

*Mr. James*, inspector, Liverpool, stated: When starting the 9.7 a.m. train to Ormskirk from No. 8 road, I saw the train due at 9.6 a.m. from Hall Road arrive in No. 10 road. When the train was near the subway, carriage examiner Holt called out that "he was running in quick." I blew my whistle, but the driver and fireman were occupied with their engine. The whole of the wheels were skidding, but the engine ran into the patent hydraulic buffers (which were out at the time) with considerable force, causing injury to a number of passengers and damage to stock. I at once summoned the ambulance and rendered all possible assistance to the most needy cases. The injuries consisted chiefly of slight concussion and bruises and shock. I went to the driver after the accident and asked him how the accident had happened and he said that "the engine had picked up her wheels and shot into the buffers," and I remarked to the driver that I thought he had come in too quickly. I asked guard Shepherd if he had noticed the train coming in at too great a speed before it entered the station, and he replied that he had not. I asked him if he had his hand-brake on and he told me he had applied the hand-brake at "B" cabin. I asked guard Dodd if he had applied his hand-brake, and he replied he was not sure as he did not recollect what had occurred after passing "B" cabin. A little more than half the train passed me before it came to a stand, and I noticed that all the wheels of that portion of the train were skidding.

*John Cottam*, signalman, Exchange "A" cabin, stated: I am 43 years of age, have been 25 years in the service, 21 years as signalman, and seven years at "A" box. I was in charge at "A" box from 6 a.m. to 2 p.m. on May 22nd, having finished at 2 p.m. on the previous day. I received the "Is line clear" for the 8.40 a.m. Hall Road to Exchange passenger train at 9.2, and acknowledged it at 9.3. Received "Train entering section" signal at 9.6., and the train arrived at my box at 9.7. There was a clear road for it and all the signals were off. I noticed the train passing my box, and it seemed to be going faster than trains usually do when passing my box, but I did not anticipate any mishap.

*George Shepherd*, guard, Liverpool, stated: I am 60 years of age, was re-engaged in the service from 15 to 17 years ago, and have been a guard nine years. On May 22nd, I was acting as assistant guard in the front van of the 8.40 a.m. passenger train, Hall Road to Liverpool, having commenced at 7.45 a.m. to work until 7.15 p.m. I had finished at 7.15 p.m. on the night before. On approaching Liverpool all the signals were off between Sandhills and Liverpool "A." On passing "B" box I put my hand-brake partly on and almost immediately noticed the driver applying the vacuum slightly. In my opinion the driver entered the station at the ordinary speed, and there was nothing in the style of running to

lead me to suppose he would not be able to stop before reaching the buffers, although I put my hand-brake hard on when the van reached the platform, as it was a wet morning. I noticed from the vacuum gauge that the driver applied the vacuum several times. I did not realise the driver had not proper control of his train, and that there was a likelihood of the engine colliding with the buffers until the engine was about three or four carriage-lengths from them, and at that time the driver had exhausted the vacuum. I called the attention of the Ormskirk guard Lyon, who was waiting to take hold of the train to work it to Crosby at 9.15 a.m. to witness that my brake was hard on. After the mishap, my attention was called to some passengers who appeared to have been injured, and I rendered what assistance I could until it was time for me to take up the working of the 9.30 a.m. Liverpool to Southport. I had no conversation with the driver at the time, but on returning into Liverpool at 11.33 a.m., and after making my statement in Mr. Nicholas's office, I spoke to the driver and we agreed that we were coming in at the usual speed up to the platform. Having set myself, when the impact took place, I did not feel any shock. It was raining hard outside, and the rails were rather damp in the station.

*John Dodd*, guard, Liverpool, stated: I am 45 years of age, have been in the service 15 years, and a guard 10 years. On May 22nd I commenced duty at 8 a.m., and travelled as passenger to Hall Road to work as guard in charge of the 8.40 a.m. Hall Road to Liverpool, having finished duty at 8 p.m. on the 21st inst. I rode in the rear van. On approaching Liverpool the whole of the signals were off for us between Sandhills and Liverpool. The train crossed Exchange Junction at the usual speed, and I cannot say when the driver applied the vacuum brake, or if he did so, as on passing the distant signal for "B" box and observing all the signals were off into the station I went to the bench and commenced to make out the driver's voucher. I did not realise anything unusual until the collision occurred, when I was thrown against the partition. I did not take particular notice of the speed on passing "B" box, but the train did not appear to be proceeding at more than the usual speed. I did not carry out the instructions for entering terminal stations, or apply the hand brake at all, as I did not consider it was necessary, taking into consideration the speed at which the train crossed Exchange Junction, and that there was a clear path into the platform. I felt very little effect of the accident at the time, and went forward in charge of the 9.30 a.m. Liverpool to Leeds, but on arrival at Sowerby Bridge became worse. I managed to work the return trip from Leeds into Liverpool at 4.15 p.m., but did not feel fit to continue. I did not notice that the wheels were skidding as we entered the station, and I did not realise that the driver was unable to stop. The first intimation I had of anything being wrong was when I was thrown against the partition between my van and the next compartment. I received a shock, and was unable to render any assistance prior to my taking charge of the 9.30 a.m. Liverpool to Leeds. I still feel a little shaken, but otherwise no worse for the accident. I tested the brake before leaving Hall Road. There were 18 or 19 inches of vacuum.

*Charles S. Holt*, carriage examiner and repairer, stated: I am 39 years of age, and have been in the Company's service 17 years. I signed on at 6.15 a.m. to work until 6.15 p.m., less 1½ hours for meals, and finished at 6.15 p.m. on the pre-

vious night. I was in the front van of the 9.30 a.m. Leeds train trying the brake, the van being in No. 8 road half way down No. 5 platform. I had just turned the brake off when I noticed the train in question coming down No. 10 road at a much greater speed than usual, much over hand brake speed. I rushed on to the platform and called out to the driver "Steady." Inspector James asked me what was wrong, and just as I pointed out the train it collided with the buffers. I immediately went over to No. 10 road to examine the vacuum brakes of the 9.6 a.m. train, and found them all on. They were holding on fully 15 minutes afterwards, and Mr. Stockton and myself released them by the wires. I examined the hand brakes on the front and rear vans later in the day, and they were both in working order. I also examined the blocks before the train left for Southport, and there were no signs of them having been heated. Just as the engine, which was running bunker first, passed me I noticed the fireman, who was looking ahead and had apparently perceived the danger, immediately turn round and apply his hand brake. I heard the wheels skid on full van 225, the fifth vehicle from the engine, but I cannot say whether any more were skidding or not.

*John Price*, carriage examiner, stated: I am 35 years of age, and have been in the Company's service 17 years. On May 22nd I signed on duty at 6 a.m. to work until 6 p.m., less 1½ hours for meals, having signed off at 6 p.m. on the previous night. I was standing in the six-foot between Nos. 9 and 10 roads about five carriage-lengths from the buffers when the train passed me. I was booking the numbers of the coaches, and I looked up after two or three coaches had passed me and thought the train was going too fast. The fireman appeared to realise the danger at the same time, for I saw him put his hand brake on. Some of the wheels were skidding.

*David Jones*, driver (Sandhills), entered service March 24th, 1880, booked driver November, 1896, 44 years of age, stated:—I signed off duty at 7.25 p.m. on Wednesday, the 21st May, and signed on again on Thursday, the 22nd May, at 7.10 a.m., to work until 10.25 a.m. I was working the 8.45 a.m. Hall Road to Liverpool with engine No. 208, which is a four-coupled radial tank engine with automatic vacuum brake on the four coupled wheels; this can also be worked by hand. I stopped at all stations from Hall Road; tickets were collected at Sandhills as usual, and we left there at 9.3 a.m., and the train had a clear road with all signals off into Exchange Station, Liver-

pool, where we arrived at 9.7 in No. 10 road. The train consisted of 14 coaches. I shut off steam when approaching "B" cabin, at which time I should be travelling at about 20 miles an hour. I applied the vacuum brake between "B" and "A" cabins, reducing the speed to about eight miles an hour. My fireman put on the hand brake when we entered the platform. I applied the power brake about three times again while running down the platform. Just as I reached the cross-over road from No. 10 to No. 9 road the fireman opened the sanders, and I then put the vacuum handle right down, applying the brake to full extent. As soon as I did this the engine wheels skidded, and we ran into the hydraulic buffer stops. I estimate the speed at this time was about four miles an hour. The rams of the hydraulic buffer stops were jammed hard up. There was no damage done to the engine, nor was either the fireman or myself injured in any way. I believe the coaches were buffer-locked in two places, but I do not know to what extent they were damaged. I had every confidence in stopping until I got over the crossing points, but I can only admit I was not entering the station at hand brake speed, and I attribute the accident to this. I did all I could when I noticed the danger, and am very sorry it has occurred. The brakes were in first class order, and I had experienced no difficulty in stopping previously.

*S. Howden*, fireman (Sandhills), entered the service June 12th, 1889, booked fireman, October 3rd, 1895, stated:—I worked with driver Jones on May 21st, and signed on again with him at 7.10 a.m. on the date of the accident. After leaving Sandhills the driver shut the regulator when approaching Exchange "B" cabin home signal, and we were coming just as usual. I applied my hand brake on entering the platform, and did not think anything was wrong until we were about three coach-lengths from the buffer stops, when I opened the sanders, as I thought we were not going to stop in time. My driver had applied the power brake at first, just as he shut off steam, and to the full extent just when passing over the points leading to No. 9 road. My driver did not tell me to open the sanders. I am sure I had my hand brake on properly. When approaching the subway I applied my hand brake still harder, and again when the driver applied the vacuum brake harder. I know we were entering the station at too high a speed to be able to pull up with the hand brake only. We had no difficulty in stopping either at Sandhills or any other station.

### Conclusion.

The evidence in this case is consistent and clear. Driver Jones admits that he was not entering the station at hand-brake speed, and the witnesses on the platform concur that the speed of the train was higher than usual, and some tried to attract the driver's attention, as they anticipated a collision with the buffer stops.

Driver Jones states he shut off steam when approaching "B" cabin, which is 26 chains from the buffer stops, when he was running at a speed of 20 miles an hour, and that he applied the vacuum-brake between "B" and "A" cabins, or about 20 chains from the buffers, reducing the speed to about eight miles an hour, and that he also applied the vacuum-brake two or three times while running down the platform, further reducing the speed. When reaching the points leading to No. 9 road, or 200 feet from the stops, he states he put the vacuum brake on to its full extent; but the wheels skidded and the momentum of the train carried it forward to the buffer stops at a speed of about four miles an hour. He states he had every confidence in stopping until the

wheels skidded. But he entered the station at too high a speed, and accordingly must bear the blame for the mishap.

The blow on impact was much reduced by the buffers being hydraulic, and no doubt the majority of the injuries were due to the fact that the passengers were mostly standing up preparing to leave the carriages on arrival at the station.

Guard Dodd, who was in charge of the train, is also to blame for not watching the speed as it was entering the station, and for not using his hand-brake, which he admits he did not apply at all.

I have, &c.,  
E. DRUITT,  
Major, R.E.

The Assistant Secretary,  
Railway Department, Board of Trade.

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## APPENDIX.

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### DAMAGE TO ROLLING STOCK.

Third-class, No. 2,480.—One bottom quarter panel broken, 4 end panels, 1 end pillar, 1 vacuum brake train pipe clip, 1 flooring board, and 1 end bottomside all broken; two buffers bent and 1 dummy plug minus.

Third-class, No. 179.—One buffer bent.

Third-class, No. 1,091.—Four buffers bent.

First-class, No. 108.—Three buffers bent.

Second-class, No. 72.—Two buffers bent and 2 middlebearers broken.

First-class, No. 358.—One headstock and 2 buffers slightly damaged, 2 buffers bent, 1 buffer block broken, 1 brake block hanger casting and

1 tie rod set screw broken, 1 buffer casting bolt minus.

First class, No. 350.—Two buffers bent.

First class, No. 361.—Two buffers bent, 1 buffer broken, 1 buffer block, 1 buffer casting broken, and body shifted.

Third class, No. 2,090.—One end panel damaged and 4 buffers bent.

Van, No. 226.—One buffer bent, 1 buffer broken, and 1 leg iron bent.

Second-class, No. 111.—Two buffers bent and body shifted.

Second-class, No. 112.—One buffer bent and body shifted.

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Printed copies of the above Report were sent to the Company on the 23rd June.

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## NORTH-BRITISH RAILWAY.

Board of Trade (Railway Department),  
8, Richmond Terrace, Whitehall, London, S.W.,  
21st June, 1902.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in accordance with the Order of the 24th May, the result of my inquiry into the causes of the collision which occurred on the 14th May, about 6.30 a.m., between a passenger train and a derailed waggon at Polmont on the North-British Railway.

In this case, an engine was propelling two cattle waggons on the up line, when the leading waggon became derailed and struck the carriages of a passenger train which at that moment was passing the spot on the down line.

The passenger train (5.30 a.m. Edinburgh to Glasgow) consisted of a four-wheels-coupled tender engine with a bogie leading, and eight six-wheeled coaches with one six-wheeled brake van. It was fitted throughout with the Westinghouse automatic brake actuating blocks on the four coupled and six tender wheels of the engine, and on 36 out of 54 of the coach wheels.

The goods engine was a six-wheels-coupled tender engine fitted with the Westinghouse and hand brakes.

The passenger train had but just started from Polmont station and its speed fortunately was therefore low, so that the results of the collision were inconsiderable.

Complaints of injury have been received from ten or twelve of the passengers.

Particulars of the damage to plant are given in the Appendix.