

LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade, Railway Department,
8, Richmond Terrace, Whitehall, London, S.W.,
31st December, 1908.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 3rd November, the result of my inquiry into the causes of the collision, which occurred on the 31st October, between a goods train and an empty passenger train at Royton on the Lancashire and Yorkshire Railway.

In this case the 11.50 p.m. special goods train from Aintree to Royton ran into the buffer stops at the end of the down loop line and the tender fell over on to one of the carriages which were being backed slowly into the station to form the 5.35 a.m. passenger train to Manchester.

The fireman of the goods train was killed and the driver severely injured.

The guard of the passenger train was also slightly injured.

The goods train consisted of a six-wheels-coupled goods engine with a six-wheeled tender, of a total weight of 68 tons, 5 cwt., 2 qrs., fitted with the vacuum brake working blocks on all the wheels of the engine and tender, and with a hand brake for the six tender wheels, and of 49 vehicles. These were three brake vans, 43 loaded waggons, and three empty waggons. The total weight of the train was 601 tons, 10 cwt., 1 qr.

The accident occurred at 5.34 a.m., and the rails were in an exceedingly greasy condition at the time.

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

Description.

Royton is the terminus of a short branch line, and from Royton Junction, the down line, which alone is concerned in this case, is on a steep falling gradient as follows, viz.:—

From the outlet signals in the down sidings where the train in question started to the junction points is 66 yards and the gradient is 1 in 253 falling.

The down branch line to Royton continues at the same gradient for a length of six chains, then is level for a length of four chains, and then falls at 1 in 62 for a length of 53 chains.

At this point there are facing points leading to the down loop line which continues on a steep gradient alongside the down main line for another $24\frac{1}{2}$ chains to the buffer stops, which are situated at the east end of the single passenger platform.

At a point 82 yards beyond the commencement of the 1 in 62 gradient at Royton Junction is a Notice Board for goods trains to stop and pin down brakes.

Evidence taken on the 10th November.

T. Paton states: I entered the service in February, 1882, and have been a signalman about 26 years, and have been about 12 years at Royton Junction signal box. I signed on duty on October 30th at 10.0 p.m. to work until 6.0 a.m. on October 31st, and had worked the same hours the previous turn. Shortly before the special goods train, Aintree to Royton, arrived at my box, which it did at 5 a.m., Inspector Fitzpatrick rang me up on the telephone, and said "I shall have a Liverpool special coming with two or three on, I want him to pick up, and he will have about 39 waggons on for Royton. He will have nothing to do only back inside with his own train, attach, and then he will be right away. Get him into Royton as quick as you can because the trainmen are wanted at Bury as soon as possible." He also asked me if I could get the train into Royton before the passenger train from Hollinwood, and I replied "No, there is a Rochdale train due and the Royton passenger train is following closely behind, and there is not time to despatch the goods special either before or between them." After the Rochdale train had passed, the shunter called me up on the telephone and told me that the special goods train for Royton was ready, but he did not

tell me how many waggons it had on. I replied "All right, let him draw down to the outlet signal, and as soon as the Hollinwood train is clear I will let him go." After the Royton passenger train had passed at 5.25, I altered my points for the special goods to draw out of the sidings to the starting signal, but before it had been brought to a stand at the starting signal I received "Train out of section" signal from Royton for the passenger train, and had the goods train accepted. I at once lowered the starting signal, and the goods train departed at 5.30. Inspector Fitzpatrick had told me that about 39 waggons would be the composition of the train, but I booked in my train register 40. I did not count the waggons as the train passed me. The Royton signalman told me on the telephone at about 5.34 that an accident had occurred through the goods train running on to the platform, that the waggons were piled up, and that they were unable to find the driver and fireman. I immediately rang up Inspector Fitzpatrick and repeated the message to him. I again repeated the message, and asked Fitzpatrick if he had told the driver where he was going. He replied "Yes, the driver said he had been into Royton before." I said to Fitzpatrick that he had

better go down to Royton to ascertain the state of affairs, and I obtained an engine from Hartford sidings to take him. I had no conversation with the shunter after the accident. As the special goods train referred to passed my box, it was travelling at about the usual rate, and certainly not going at a greater speed than trains usually travel at when going to Royton. I knew that the engine had not stopped at the Notice Board *re* pinning down of brakes, but I thought he would bring his train to a stand further down the bank, as frequently trains which require to stop to pin down brakes are drawn far enough down to clear the junction. Had I known that the train had not stopped for the purpose of pinning down brakes, I should certainly have informed the signalman at Royton station box of the fact, but I concluded at the time that the train had stopped on the bank out of my sight, which frequently is the case. I did not hear the driver of the special goods train engine popping with his whistle.

J. Sinclair states: I have been 17 years in the Company's service, and have been a signalman 11 years. I signed on duty on October 30th at 8 p.m. to work at Royton Station signal box until 6 a.m. on October 31st, having worked the same hours on the previous turn. A special goods train, from Aintree sorting sidings to Royton, was offered to me at 5.27 a.m. I at once accepted it, and immediately received the "Train entering section" signal. It arrived between 5.32 and 5.33. Trains usually take 15 to 20 minutes coming down from the Junction. As the train approached my cabin, I saw that sparks were coming from the engine wheels nearest the chimney. The wheels were not revolving; the crank was stationary. The driver was popping the whistle, and I should think when the train passed me it was travelling at 45 miles an hour. The next thing I heard was a crash. I had turned the train into No. 1 loop line, and I left the signal box to ascertain what had actually occurred. I advised the inspector at Royton Junction sidings of the accident, and I gave him a message for the tool-van. I sent the shunter for the station master. The shunter was in my box just prior to the accident occurring; he had come to boil some water and to light his hand lamp. He left the cabin on hearing the engine popping. I had my signals off for the train to enter No. 1 loop, and the driver should have stopped at No. 16 signal which was at danger and which is about half way down the loop. I saw when the train was approaching that it was out of control, but it was travelling too quickly for anything to be done to assist in bringing it to a stand.

Ralph Hilton states: I joined the service in 1892, and have been a goods guard seven years. I signed on duty on October 30th, after 17 hours' rest, at 11.20 p.m. to work until finished on October 31st. I was instructed to work a special goods train from Aintree sorting sidings to Royton, with Engine No. 1114, Class "A," and after performing work at Hartford sidings, had two waggons for Royton. I was instructed by Inspector Fitzpatrick to travel by main line to Royton Junction and there pick up 39 waggons from No. 2 down siding. On approaching Royton Junction, I alighted from my brake van opposite the shunters' cabin, which is at the entrance to the down sidings, and the engine, with two waggons and brake van attached, ran forward to clear the points leading into the sidings. After telling the shunter to see to my train getting inside, I walked along the vehicles standing in No. 2 road to go to the rear brake van to light the side and tail lamps. After lighting the lamps, I returned to the front

of the train. I counted the vehicles when going to the brake van and also when returning. I counted the waggons in No. 2 siding which were 42 and with my two waggons and brake van, made a train of 45 vehicles. I went to the driver and told him the train consisted of 45 vehicles, and that a lot of them were coal waggons. He replied "All right." I did not mention to him about stopping at the notice board just outside the station to pin down waggon brakes, because I expected he would stop at the board without my telling him to do so. After I had spoken to the driver, he opened the engine whistle, and when the siding signal had been lowered he drew down to the outlet signal. I put the hand brake hard on in the Aintree brake van, and then walked back towards the rear brake van. On the way I saw shunter Schofield standing just outside the shunters' hut, and I told him the train had 45 waggons on. When I had got a little further down my train, I met Inspector Fitzpatrick who asked me how many waggons there were on the train, and I told him 45. He said you will be all right our tank engines take down 45. He then asked me if I knew the way into Royton and that there was a notice board just outside the station instructing that goods trains were to stop to pin down brakes. I told him that I was conversant with the road, and that I knew of the position of the notice board. I then went to the rear of my train and pinned down the brakes on two waggons next to my brake van. The brakes I applied were on the right hand side of the train looking towards the engine. So far as I know, the brakes were all right. I did not put any brakes down on the left hand side of the waggons looking towards the engine. When the driver started to leave Royton Junction sidings for Royton, I applied the hand brake in my van as tightly as possible. When I did so, the wheels began to skid and I released the brake and tried it again, but the wheels still skidded. As the speed of the train increased, I dropped some sand down the sand pipe but it had no effect. I put down several hands-full of sand and used up practically all the sand there was in the sand box. I took the hand brake off and tried it again, but the wheels continued to skid, and I then left the brake hard on. The speed of the train increased considerably, and I concluded that it was getting out of control. I afterwards heard the driver popping with the engine whistle on approaching the loop at Royton Station. When passing Royton Station signal box I heard someone shout, and I got on to the step of the brake van so as to be prepared to jump, but did not leave the van until the collision occurred when I partly jumped and was partly thrown on to the ballast without receiving any injury. I did not rejoin my brake van, but at once examined the train, and found that my engine had knocked the buffers down at the end of No. 1 loop, mounted the platform, knocking down the parachute water column, and the tender had heeled over on to the platform line against a passenger train, damaging one of the carriages. I also found that my driver (T. Ashton) had been injured, and that the fireman (W. Anderson) was missing. The latter was subsequently found amongst the debris killed. There were three ten-ton brake vans on my train, one the third vehicle from the engine, another about the centre, and one at the rear. The van in which I applied the brake before leaving Royton Junction sidings was the third vehicle from the engine. I cannot say how many turns I gave the wheel, but it usually takes about four or five turns to get a brake hard on. At the time I applied the brake I thought it was in good order. I cannot explain why the

hand brake wheel was "Full off" after the accident. I am not sure whether I put the chain on the wheel or not. There were no vacuum fitted vehicles on the train. Whilst standing in the siding at Royton Junction waiting a road, I calculated the tonnage of my train on a tonnage card and reckoned it up to 480 tons, as follows:—

	Tons.
31 coal waggons at 13 tons per waggon	400
14 goods waggons at $6\frac{1}{2}$ tons per waggon	80
45	480

I did not exchange hand signals with the engine-men on leaving Royton Junction sidings, as owing to the formation of the road, it was impossible for me to do so, the line being on a severe curve. It was my intention to pin down waggon brakes at the notice board, and when I found that the driver was not preparing to stop at the notice board I was unable to bring the train to a stand. The train passed the notice board at about eight miles per hour, and the speed afterwards increased to between 15 and 20 miles per hour. After starting from Royton Junction sidings, I did not feel any checking in the speed of the train from the front, and there was certainly no buffering up of the waggons. The train seemed to slide all the way until the collision occurred. I did not put any waggon brakes down after the accident. When I counted the waggons on my train at Royton Junction sidings, it was complete and ready to depart for Royton. I have been in charge of trains working into Royton about four times previous to this mishap. It was a very dark and misty morning, and the rails were very greasy. I thought that if I put the brakes down on two waggons it would be sufficient to check the train, when stopping at the notice board.

C. Tomlin, Victoria, states: I am 39 years of age, and have been in the service since June, 1890, a permanent passenger guard eight years. I signed on duty on October 31st at 4.30 a.m. to work until 2.30 p.m., having signed off the previous day at 1 p.m. I was in charge of the 5.10 a.m. Hollinwood to Royton passenger train which arrived in Royton at 5.27 a.m., and after the engine had run round the carriages the next trip was the 5.35 a.m. Royton to Manchester. Whilst the engine was running round I got into the rear brake van (inward journey) to extinguish the side and tail lamps. The engine had run round and had been coupled up, and I had attended to the lamps when I prepared to alight. At this time my train began to set back towards the buffers, and just as I was about to step out on to the platform I instantly heard a crash and saw a goods train approaching. I rushed to the opposite side of the van, saw the goods train engine pass my van, and something seemed to open when I was thrown out of the van on to the permanent way and was stunned.

Thomas Wood Ogden states: I am 45 years of age, entered the service in June, 1879, and have been a booked driver 14 years. I signed on duty on October 31st at 4.10 a.m. to work until 2.10 p.m. I had been off duty the previous day (Friday). I was working with engine 1442, a 10-wheeled tank engine, and worked the 5.10 a.m. Hollinwood to Royton passenger train. On arrival at Royton I stopped clear of the crossing, the engine was hooked off, and I then ran it round the coaches. I backed on to the vehicles, and my fireman coupled up ready for the 5.35 a.m. trip Royton to Victoria. After coupling up, the fireman got on to the engine framing, and I had just started to set the train back to the buffers and had gone about

two yards when I heard a crash caused by a goods train knocking the buffer stops down and colliding with the front vehicles on my train. I heard no whistling. Neither my fireman nor I was injured, and as I had seen my guard in the front van a short time prior to the mishap, I went to ascertain how he had gone on. I found him in the porters' room, suffering from a slight injury and shock. I did not examine any of the brakes on the goods train.

Edward Fitzpatrick states: I am 36 years of age, and have been in the service about 20 years. I have been a goods inspector 10 years, and was previously a goods guard at Bury. I have been inspector at Royton Junction since December, 1907, and was an inspector at Bury for nine years previous to that. I signed on duty on October 30th at 8 p.m. to work until 6 a.m. on October 31st, having signed off duty on October 30th at 6 a.m. I was in charge of Royton Junction sidings when the special goods train, 11.50 p.m. Aintree sorting sidings to Royton, arrived at Hartford sidings about 4.50 a.m. It consisted of four waggons and brake van, and after two waggons had been detached, I instructed the guard in charge to travel main line to Royton Junction and attach 39 waggons for Royton which were standing at Royton Junction in No. 2 down siding. I also instructed shunter Schofield (who was in charge of the down sidings) on the telephone that the special goods train was to attach the 39 waggons from No. 2 down siding, and then go right away to Royton, as it was required to run as early as possible engine and van Royton to Bury. I also told the signalman on duty at Royton station box what was required to be done. Shortly afterwards, I was walking down the sidings from the Hartford end to the Royton Junction end, and met the guard walking towards the rear brake van of the train standing in No. 2 siding. I asked him if he knew his way into Royton, and he answered "Yes." I then asked him if the driver also knew the road, and he replied that the driver had worked trains into Royton on many occasions. I then drew the guard's attention to there being a notice board outside the station at which trains were to stop to pin down brakes, and he gave me to understand that he knew exactly what was required to be done. I saw the train depart, but did not notice anything unusual and I did not observe any waggon brake blocks rubbing. Shortly after the train had departed signalman Paton of Royton Junction station box rang me up on the telephone, and told me that the train had knocked down the buffers at Royton Station and waggons were piled up. He also said that one of the engine-men was injured and the other was missing. I at once obtained a pilot engine from Hartford sidings to take me to the scene of the accident, and I arrived at Royton Station about 5.45 a.m. I immediately tried to find the fireman, and instructed goods guard Cottom to dispose of the waggons at the rear of the train which had kept on the rails. I examined the brake blocks on the rear brake van and found that they were hard on, but I did not examine the waggon brakes. Guard Hilton told me that his train had not stopped at the notice board. I did not know the weight of the train and made no calculation as to the weight of the train. It was my duty to see that the engine did not take more than 480 tons down to Royton. I gave the shunter, guard, and pointsman instructions and could not be everywhere myself. When Schofield told me that the train had 50 waggons on, it was moving away and I could not have stopped it. Had I known the train was 600 tons I should not have let the train go.

Joseph Schofield states: I am 31 years of age, and have been in the service about 11 years. I was a booked guard about two years, and was reduced to a shunter's position about six weeks ago owing to depression in trade. I was previously emergency guard at Shaw about six years, and shall have been at Royton Junction two years in December next. I signed on duty on October 31st at 2.0 a.m. to work as shunter in the down sidings at Royton Junction for ten hours, having signed off the previous day at 12.0 noon. Prior to the arrival of the special goods train, Aintree sorting sidings to Royton, I asked Inspector Fitzpatrick what service there was for the Royton waggons, and he replied "Take the Royton waggons off the Brewery Sidings to Milnrow train, and put them on the Royton waggons already set in No. 2 down siding, as a special goods train from Liverpool is coming, which will probably be worked by a coal engine, and it can easily take 50 waggons or more into Royton." There were 39 waggons and a brake van set in No. 2 siding, and I shunted the Royton waggons from the Milnrow train on to them, but did not keep count of the vehicles detached by the Milnrow train. I think there were 6 or 7. When the special goods train arrived, the guard alighted at my cabin, and his engine with two waggons and brake van attached, ran forward to clear the points leading into the down sidings. I told the guard that he was to pick up the waggons in No. 2 siding, and that if he would go and light the lamps on the brake van, which was in the rear, I would attend to the lamps on his brake van and couple up the train. We did so, and after coupling up, I was walking towards the rear when I met the guard at about the eighth waggon from the engine, and he told me his train had been made up into about 50 vehicles. I did not know, from my own counting of the waggons, how many the train had to pick up, but I accepted the statement of the guard as being correct, and entered this number in my book. I noticed when the special arrived that it was not being worked by a coal engine, but by Class "A" engine, but I did not think 50 vehicles were too many for it to take to Royton. Whilst the train was waiting for a road, I told Inspector Fitzpatrick that the guard had said he had 50 vehicles on the train, and the Inspector said that the load was too much, but he did not tell me to reduce it. I did not make any calculation as to the tonnage of the train, because I expected the guard would do so. I was afterwards able to remember that the train had about 50 waggons on, made up as follows:—

- 2 waggons and brake van brought in by the special goods train.
- 39 waggons from Royton Junction sidings.
- 1 brake van from Hartford end of the sidings.
- 2 goods waggons from the Brewery sidings train.
- 5 or 6 coal waggons from the Brewery sidings train.

I had no conversation with the trainmen as to the train stopping at the notice board to pin down waggon brakes, and when the train departed I did not notice it get up an unusual speed. It went out pretty sharp. I did not apply any waggon brakes, nor did I see any put down by anyone. As the train departed I was in the shunters' cabin, but I did not hear any rubbing of the brake blocks, any grinding noise, skidding of the wheels, or any hand levers jumping. Shortly after the train had departed, I was informed by Inspector Fitzpatrick that the train had run away and a serious accident had occurred in Royton Station. He instructed me to tell Inspector Loftus, who was due on duty at 6.0 a.m., to send messages to the officials concerned. I sent a

telegram demanding the tool van, and then walked down to Royton Station. On arrival, I heard that the fireman was missing, and I at once endeavoured to find him, but was unsuccessful. When I got to the scene of the accident, part of the train had been taken off and disposed of in the sidings, so that I cannot say whether or not any of the waggon brakes were pinned down. After trying for some time to find the fireman, I was sent by Inspector Fitzpatrick to relieve a goods guard. I have worked trains into Royton, but always stopped to pin down brakes. The guard said to me that there were 50 waggons on the train and not 45. I thought the guard was in charge of the train and that my responsibility ceased when he took it over. By Fitzpatrick saying the load was too much I think he meant the train was too long and not too heavy. Had the Inspector been away I should not have stopped the train.

John Phillips states: I am 23 years of age, and have been in the service since February, 1908. I signed on duty as shunter at Royton Station on October 30th at 8 p.m. to work until 6 a.m. October 31st, and had worked the same hours the previous day. Inspector Fitzpatrick at Royton Junction rang me up on the telephone at about 5 a.m., and said he had an engine with 40 odd waggons on; he has to be at Bury at 6.30 a.m. I told him that I would do all I could. At about 5.20 a.m. I went into the signalman's box at Royton Station to ask for a match to light my hand lamp. I came out of the cabin as the train was coming round the curve, and I heard the driver popping. I ran to meet the train with the intention of putting waggon brakes down, but the train was running as quickly as any passenger train does when entering the station. I tried to drop a coal waggon brake but failed owing to the speed, and the whole of the train passed me. As the brake van was passing, I saw the guard inside of his van looking out of the window on the main line side. At this time I was near the bridge at the signal box, and I followed the train down the loop line. I heard a crash and signalman J. Sinclair, on duty at Royton Station box, asked me to go and look if the main line was blocked. I found the main line blocked, and then telephoned from the goods sidings to the station box what had occurred. I did not examine the brake of the rear van on the train, but I noticed whilst running along the right hand side of the train towards the engine that several waggon brakes were pinned down. They were on the main line side, and I did not look at any brakes on the left hand side of the train. The waggon brakes I noticed pinned down were next to the brake van, and I did not lift any of the brakes, neither did I drop any brakes. When I arrived at the train, the guard was in his van, and he had not had time to put any waggon brakes down. As the train was approaching, I saw some fire flying from the front wheels of the train, but none at the rear. We got an engine from Royton Junction, and after backing it on to the train goods guard Cottom removed 24 vehicles whilst I turned off the water at the column. Immediately in front of the 24 waggons referred to were a waggon and ten-ton brake van off the rails. After the tool van had arrived, and these two vehicles had been re-railed, we removed another 12 vehicles including the two which had been off the road.

F. C. Cottom states: I am 36 years of age, entered the service February, 1897, and have been a goods guard six years. I signed on duty on October 30th at 9.20 p.m. to work until 7.20 a.m. October 31st. I had signed off duty previously

at 5.15 a.m. When I was working at Hartford sidings with the Royton Junction continuous pilot at about 5.35 a.m. October 31st, inspector Fitzpatrick told me to leave the work I had in hand and take my engine to Royton, picking him up on the way. I did so, and arrived at the scene of the accident at Royton at 5.50 a.m. I examined the special goods train from Aintree, and found the brake in the rear guard's van was hard on. I also found about 10 waggon brakes pinned down next to this van. The brakes were pinned down on the left hand side of the train looking towards the engine. I had to take out the pins before I could lift the brakes. I remarked to inspector Fitzpatrick "It is very queer the train has run away with so many brakes pinned down and the guard's brake also hard on." I did not feel any of the brake blocks, and I did not notice any sign of heat about them. In accordance with inspector Fitzpatrick's orders, I disposed of the waggons at the rear of the train which were on the rails. I made two shunts with 13 and 10 waggons respectively.

Mr. Warren, locomotive foreman, Aintree shed, states: Engine No. 1114 was booked to work the 11.50 p.m. special goods train Aintree sorting sidings to Royton on October 30th. It had ordinary dry sanders. Prior to this date, the engine had worked the 1 a.m. cattle special from Aintree sorting sidings to Normanton on October 28th, and returned with the 10 p.m., from Normanton to Bolton. On October 25th, 26th, and 27th, it was standing in the shed for boiler washing out, &c. It worked on October 23rd and 24th. On October 30th, the engine was worked during the day by acting driver T. Rimmer, of Sandhills, who finished at Aintree, and the only repairs he reported against the engine was "Tool box catch." The engine and tender brakes were reported for taking up on October 25th, and this was attended to on the same day by fitter D. Johnson. The engine sanders and brakes were in good condition before leaving the shed on the night of October 30th. I made a special examination of the engine firebox and engine tyres on October 27th. Nothing has been reported against the engine sanders during the last ten days of the month of October. Driver T. Ashton is 46 years of age, entered the service August 28th, 1883, and has been a booked driver since February 10th, 1905. On October 30th, he signed on duty at 11 p.m., and prior to this he had had 15 hours and 30 minutes rest. Cleaner W. Anderson, who was booked to fire for driver Ashton, was 20 $\frac{3}{4}$ years of age, entered the service December 2nd, 1904, and had been firing regularly since February 8th, 1907. He had previously to February, 1907, fired 173 times.

D. Johnson, fitter, Aintree Locomotive Shed, states: I attended to engine No. 1114 on October 25th. I adjusted the engine brake and the tender brake, and left them in thorough working order. I signed these repairs off in the book when I had completed them.

Mr. F. W. Attock, Locomotive Department, Horwich Works, states: I went to engine No. 1114 with Mr. Jones (of Horwich Works) about 11.30 a.m. on the day of the accident, and before the engine was lifted from against the footplate. I saw the engine was in full back gear, the reversing screw being in that position. The left hand front sand box was half full of dry sand, and in good working order, except that the end of the pipe had been crushed by being jammed against the leading engine wheels in the collision. The right hand front sand box was

three-quarters full of dry sand. The sand would not run out of the pipe so I had the valve taken off by fitter Pinder, of Newton Heath shed, and on examination of the valve a small quantity of wet sand was found to be blocking one of the ports. The sand lever rods were all coupled up. All the engine wheels showed distinct signs of skidding. The engine brake gear appeared to be in thorough working order except where broken by the collision. Engine No. 1114 is a six-wheels-coupled tender goods engine with vacuum brake fitted to all engine and tender wheels.

Mr. Crough, Carriage and Waggon Department, Newton Heath, states: I have examined carefully all the wheels from under the rear brake van No. 23422, the front brake van No. 24431, waggons Nos. 11960 and 5118, said to have been next to the rear brake van. I found distinct marks of recent skidding on the wheels from brake van No. 23422, no flats on the wheels from under waggons Nos. 11960 and 5118, and no sign of heating on the blocks. Brake van No. 24431 was badly smashed in the accident, but the hand brake wheel and pillar were intact when I examined them at 4.43 p.m. on the afternoon of October 31st at Royton, and I found the nut three threads from the top of the screw, and the brake is "Full off" in that position. The wheels from under this brake van show small flats apparently of old origin. All the brake blocks were good ones, though the wooden block under waggon No. 11960 had been wearing in the wheel flange. There was practically no sand in the front box of brake van No. 23422.

Richard Hayward, goods guard, Miles Platting, states: I am 56 years of age, and re-entered the service in 1881, since which date I have been a goods guard. I signed on duty on October 31st at 2.50 a.m. to work until 1.0 p.m., having signed off the previous day at 1.50 p.m. I was working the 3.20 a.m. Brewery siding to Milnrow goods train and arrived at Royton Junction at 4.40 a.m. I detached two waggons of goods (one containing sundries from Oldham Road, and one van ex-Philips Park) and five waggons of coal, all for Royton. At this time, a special goods train from Liverpool arrived, and was made up into a train for Royton, and my waggons were put on to it. As the special goods train was waiting to depart from Royton Junction down sidings, I was in the shunters' cabin, and inspector Fitzpatrick and shunter Schofield were also there. A conversation ensued, and inspector Fitzpatrick asked shunter Schofield how many waggons the Aintree special had on, and Schofield answered "50". The inspector then told the shunter that the train had too many waggons on, and the shunter replied "then it had better not go into Royton with so many waggons, as the trainmen are strangers, and one of the men has only been into Royton once before". Whether he referred to the driver or the guard, I do not know. The inspector did not make any reply, and walked out of the cabin. I am quite positive that at this time the Aintree to Royton special was waiting in the sidings at Royton Junction for the passage of the 5.10 a.m. Hollinwood to Royton train. Shunter Schofield also said that the trainmen had plenty of brake power at their disposal. I am quite certain that this is the conversation which took place between inspector Fitzpatrick and shunter Schofield. The remarks about 39 waggons being attached were not made in my presence. The only number mentioned was 50. I heard of the accident before I had completed work with my train at Royton Junction.

Evidence taken on December 22nd.

T. C. Ashton states : I have been in the Company's service 25 years and a driver 15 years. I came on duty on the night of November 29th at 11 p.m. I signed on at Aintree and was instructed to work a special goods train to Royton. I was working with an "A" class six-wheels-coupled tender engine with the vacuum brake fitted on all six wheels of the engine and tender. There was also a hand brake on the tender wheels. The brakes were in good order and I had 23 inches of vacuum registered all the way to Royton. The engine was also fitted with hand working sanders and I had plenty of dry sand. On the journey to Royton I had no trouble at all with the engine sanders, in fact, I had never had a nicer trip. The engine, however, slipped between Dean Lane and Hollinwood and I was put inside at Hollinwood for traffic purposes. I then examined my sanders and I found them blocked up, and I at once put them in thorough working order. The sanders were blocked owing to wet sand being in the valves owing to the very dirty weather during the journey. The wet had made its way backwards in the pipes to the valves. I arrived at Royton Junction at 5 a.m., after doing work at Hartford siding. My train was then composed of two waggons and van. The instructions I received from the guard were to back inside on the top of 38 more vehicles which required to be taken to Royton, and that I was afterwards to travel engine and van to Bury to work a train to Liverpool. These were all the instructions I received. I drew forward over the points leading to the sidings and then set back with the two waggons and van and picked up the other vehicles. After the train had been made complete I was kept at the signal about 8 minutes. The guard came round the train and I asked him how many waggons we had on and he said about 50. This was all the conversation we had and he did not say anything about the weight of the train. I am quite sure that he said 50, and not 45 waggons. I am also quite positive that he did not tell me there were a lot of coal waggons. During this time my train was stood with the engine at the outlet signal, which is close to the junction. I had no conversation with the shunter or the inspector, but I overheard some conversation between the inspector and the guard a short time previous, when the inspector said that my train was to back on to 38 more waggons. This was all I heard. When the signal was lowered I started to depart for Royton. I knew about the stop board where brakes should be pinned down, because I am very well acquainted with the place and I intended to stop at the board, and when about half way along the platform I applied the hand brake, but the tender wheels commenced skidding. I at once told my fireman to open the front sanders, which he did, and I then applied the hand brake again. I applied the hand brake so as to buffer up the waggons, and not to stop the train. I intended to bring the train to a stand by the use of the vacuum brake afterwards. As the applying of the hand-brake did not seem to have any effect, and I could not feel any buffering up of the waggons, I told my mate to put sand down the footplate sanders, which is the

hand sander, and I then applied the vacuum brake with both sanders open, but the engine and tender wheels skidded. At this time I was near the notice board. I had examined the sanders whilst standing waiting a road at Royton Junction, and before starting I saw that they were in good working order. When I passed the notice board my train would be travelling at about seven miles an hour, and after that it slipped all the way down the bank to Royton with the exception of about 40 yards, when, on my reversing the engine, I found the speed of the train was reduced considerably, but the engine wheels again began to skid, and then the train slipped until my engine hit the buffer stops. When I reversed the engine my train was about half way between the notice board and the station signal-box. I kept the engine reversed all the time afterwards until the accident occurred. From the outlet signal of the sidings I had only to travel a short distance before getting on to the falling gradient. The rails were very greasy that morning. I tried to buffer up the waggons when half way along Royton Junction Station platform, which is very soon after starting. Up to applying my hand brake I was travelling at about three or five miles an hour. My train was just moving. I think the weight of the train prevented my stopping at the notice board. After once starting I did not feel the waggons buffer up. If the notice board was further back I should then have to stop at the platform and I could not have pinned down brakes on the platform side of the train. The instructions are to stop at the board and for the fireman to get off the engine and pin down brakes. There are no instructions about going as far forward as one can so as to clear the Junction. I have nothing to do with the weight of the train, or about taking certain weights. I am only told by the guard the number I am taking. I am accustomed to taking trains into Royton. I have been down many times. I have taken 45 waggons down with a coal engine, but this class has much more brake power. I have taken about 20 or 25 with an "A" class engine. I do not think I have taken more. When I was told on the morning of November 30th, that there were 50 waggons, it did not strike me that they were too many, as I did not know whether they were loaded or empties. I think 25 loaded waggons is enough with an "A" class engine. The load of 25 waggons would be about 400 tons. I think my sanders were working and in good order when going down the incline from Royton Junction to Royton. I could not see from the footplate whether they were working or not, it was dark at the time. I did not go on to the framing to look if the sanders were working. Coming out of the siding, the line is on a curve until you get to the top of the incline, and the engine and waggon wheels bind on the rails. This binding would have a retarding influence so far as the speed of the train was concerned, and in consequence of the curve, the train would take more pulling. I should think I passed Royton Station box at about 14 or 15 miles per hour, and that would be about the speed the train was travelling when it collided with the buffer stops.

Conclusion.

The circumstances attending this accident were as follows, viz. :

The special goods train arrived at Royton Junction at 5 a.m. and then consisted only of a class "A" goods engine and tender (a six-wheels-coupled engine and six-wheeled tender of a total weight of 68 or 69 tons), two waggons and a 10-ton brake-van.

Driver T. Ashton and acting fireman W. Anderson were on the engine, and goods guard R. Hilton was in charge of the train. Hilton had been instructed before leaving Hartford Sidings (less than half a mile away) by E. Fitzpatrick, the inspector in charge of Hartford and Royton Junction Sidings, to pick up 39 waggons in the latter sidings and take them on to Royton.

There were 46 vehicles waiting in No. 2 siding to be taken to Royton, and after the special train had backed into the siding they were connected, and after a total delay of about half an hour waiting for a passenger train to precede it, it started for Royton.

At a distance of 286 yards from the outlet signal in the sidings, the down line to Royton commences to fall at a gradient of 1 in 62, and the line is on a steep gradient the whole way to the terminus. At a point 82 yards beyond the commencement of the 1 in 62 gradient is a notice board for goods trains to stop and brakes to be pinned down. Driver Ashton was fully aware of this notice board and says he intended to stop at it, and that he personally applied the hand brake on the tender when about halfway along Royton Junction platform, or 120 yards from the top of the gradient, in order to buffer up the waggons and so stop by means of the vacuum brake at the board. Ashton states that when he applied the hand brake to the tender wheels they skidded, so he released the brake and told the fireman to open the front sanders, which was done. He then applied the hand brake again, but he states it had no effect, so he told the fireman to put sand down the footplate sanders, and he then applied the vacuum brake with both sanders open, but the wheels of both engine and tender skidded. By this time he had reached the notice board for pinning down brakes and passed it at about 7 miles an hour.

He describes in his evidence the steps he took to try and reduce the speed, but, with a heavy load and greasy rails on such a steep gradient, the speed increased, and so the train quite unbraked with the exception of the van and two rear waggons, pushed the engine down until it collided with the buffer stops at the end of the down loop line. These were carried away, and the engine mounted the platform and the tender fell over on to the leading vehicle of an empty passenger train which was just then being slowly backed into the station.

After the accident the engine was found to be in full back gear; the left hand front sand box was half full of dry sand and in good working order. The right hand front sand box was three-quarters full of dry sand, but one of the ports was found to be blocked by a small quantity of wet sand, so the sand would not run out. From this it would appear probable, though Ashton states he examined his sanders while waiting at Royton Junction and saw they were working, that only the left hand one was working while the train was going down the incline to Royton.

As to the number of waggons taken on, Guard Hilton says that on arrival at Royton Junction he left his van and told J. Schofield the shunter in charge of the siding to see his train back inside the sidings on to the waggons, and then walked along the vehicles standing in No. 2 road to go to the rear brake van to light the side and tail lamps. Hilton states he counted these vehicles both when going to the brake van and when returning to the front of the train, and made the number 42 which with the three already on his train made a total of 45. He states he went to the driver and told him the train consisted of 45 vehicles and that a lot of them were coal waggons.

He states he then put the hand brake hard on in the leading brake van (3rd vehicle from the engine) but this was found not to be applied when the van was examined after the collision. He then walked back towards the rear brake van. On his way he says he met first Shunter Schofield just outside the shunters' hut and a little further on Inspector Fitzpatrick, and told each of them that the train had 45 waggons on, and that the latter said "You will be all right, our tank engines take down 45."

It will be seen from the evidence of the other men concerned, that Guard Hilton's statement as to the number of waggons he said were on the train is contradicted. Both Shunter Schofield and Driver Ashton state that he told them there were 50 waggons on.

There were in reality 49 vehicles on the train, made up of the 39 waiting in No. 2 siding, 7 detached from a train that arrived at 4.40 a.m. and shunted on to the 39 already there, and 3 on the special train when it arrived.

These 49 consisted of 33 loaded coal waggons,

2	„	with bricks,
3	„	„ cotton,
5	„	„ goods,
3		empties,
3		brake vans,

of a total gross weight of 601 tons 10 cwt. 1 qr.

After the special train was ready to start it had to wait some 8 or 10 minutes for a passenger train to precede it, and it did not leave until 5.30 a.m.

For the last few minutes before it started Inspector Fitzpatrick and Shunter Schofield were at the shunters' cabin close by the head of the train, and the latter states that he told Inspector Fitzpatrick that the Guard had said he had 50 vehicles on the train, and that the Inspector said that the load was too much, but he did not tell him to reduce it.

Fitzpatrick admits this, but declares that when Schofield told him this the train had already started and he could not stop it, but Schofield's account is corroborated by goods guard A. Hayward who was in the shunters' cabin at the time.

The Company have issued detailed instructions as to the weight of trains allowed to be taken on various parts of the line by the different classes of engines, and the load allowed for a class "A" goods engine from Royton Junction to Royton is 480 tons. The instructions also give the "nett" weights of each class of traffic by which the tonnage is to be computed in each district.

Thus for the district in which Royton is situated the "nett" weight of a waggon load of coal is laid down as 8 tons, of bricks, 8 tons 10 cwt., &c. Guard Hilton states while waiting for the train to start he made up the weight of his train on a tonnage card, but it will be seen from his evidence that he not only took fewer waggons than there were, but too small weights for each waggon, as the average weight of a waggon of coal is nearly 15 tons.

The responsibility of overloading the train appears to rest with the men who were or should have been aware of it, viz., Inspector Fitzpatrick and Shunter Schofield. I think the person in charge on the spot should be able to inform the guard on the latter's arrival of the weight to be taken on, as the latter may not have time to calculate it, if a road is ready for his train. It must be difficult under such conditions for the guard to calculate the weight of a number of waggons waiting in a siding.

From the conversation between Fitzpatrick and Schofield before the special arrived at Hartford, it appears that a coal engine was expected with the train, and, according to the Company's instructions above mentioned, that class of engine is allowed to take a load of 755 tons down to Royton.

It would appear desirable to send ahead information as to the class of engine to the shunter in charge at Royton sidings so that he would know the weight it could take down to Royton and arrange accordingly.

Owing to the long and steep gradient down the branch line to Royton and no over-run being possible to be provided as it is a terminal station, I think some special arrangements are desirable for goods trains going down the incline. It would appear desirable that all goods trains should be brought to a stop before going on to the 1 in 62 gradient, and that a brakesman be stationed there to put down waggon brakes both before the train starts and also while the train moves slowly forward on the gradient, the guard also putting brakes down on the rear waggons until the engine requires steam to draw the train.

I have, &c.,

E. DRUITT,

Lt.-Col., R.E.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

DAMAGE TO ROLLING STOCK.

Carriage Stock.

Lancashire and Yorkshire bogie second van No. 28. Two bogie step boards, one top step board, two bottom sides, one end bar, one end, two sides, roof, ten roof sticks, one compartment partition, two guard's partitions, one guard's shelf, twelve quarter lights, two end lights, two swing lights, one revolving light, two electric side lamps, two electric roof lamps, and one net back photo frame broken; two bogie sole bars and four bogie leg irons bent; one bottom step-board, two guard's seats and trimming damaged, &c.

Waggon Stock.

Lancashire and Yorkshire goods brake van No. 24,431. Broken up.

Lancashire and Yorkshire goods brake-van No. 17,746. One headstock, two end footboards, and one end pillar broken; and brake work strained.

Lancashire and Yorkshire low goods No. 1,016. Broken up.

Lancashire and Yorkshire low goods No. 21,708. Broken up.

Lancashire and Yorkshire covered goods No. 2,898. Broken up.

Midland box waggon No. 82,515. Broken up.

Midland box waggon No. 113,653. Broken up.

Midland box waggon No. 103,562. Broken up.

Midland box waggon No. 89,495. Broken up.

Cheshire Lines Committee high goods No. 788.

One end pillar and one buffer casting broken; one buffer rod bent.

Cheshire Lines Committee covered goods No. 3,428. Two sole bars, one headstock, twenty-four long outside boards, one side rail, three corner posts, two door posts, all roof boards, two axle guards, one brake lever, two "V" hangers, two brake push rods, one brake guard, two buffer castings, one end pillar, two buffers, and two brake blocks broken; three corner plates, two buffers, and two steel axle boxes bent.

Platt Brothers and Company's waggon No. 630. Two sole bars, two headstocks, four end pillars, two side rails, four axle guards, three end planks, two long side planks, one short side plank, two buffer rods, two middle bearers, and two diagonals broken; brake work strained.

Bolsover Colliery waggon No. 037. One headstock broken.

Bolsover Colliery waggon No. 1,519. One end plank and one axle-box broken.

Bolsover Colliery waggon No. 2,194.—Three axle guards, one bearing spring, one door stop, four long top side planks, seven short side planks, seven end planks, one long top plate, two side straps, one buffer rod, and two axle boxes broken; one iron sole bar, one iron middle bearer, two iron stanchions, one top end door bar, one end door fastening bar and fasteners, brake work, two buffer rods, one door stop, and one corner plate bent; four wheel flanges badly cut.

Bolsover Colliery waggon, No. 3,150.—Two sole bars, two long side planks, one headstock, and two

buffer heads broken; two corner plates, one coupling link, and one headstock hoop bent.

Shirebrook Colliery waggon No. 532.—One buffer casting broken.

J. Pickup's waggon No. 155.—One headstock, one end plank, one end pillar, and one buffer shoe broken; one sole bar slightly damaged; one corner plate and four buffers bent.

Royton Ind. Co-operative waggon No. 11.—One headstock, one sill plank, two end planks, and one end pillar broken; four buffers and corner plate bent.

Damage to Engine No. 1114.

Front buffer plate bent; right hand buffer broken; left hand side framing broken; front draw-bar broken; life guards knocked off; smoke-box door damaged; chimney broken off; left side front sand box broken; engine cab badly damaged; front vacuum train pipe and bracket broken; vacuum cylinder broken; vacuum pipe connections and feed pipes broken; whistle pillar broken; fire-box casing damaged; intermediate draw-bar and side links broken; left hand brake block hangers broken; back sand boxes broken.

Damage to Tender.

Hole knocked in the back plate; both frames bent; tender body damaged; brake gear damaged; left hand buffer broken; brake screw broken; water pick-up apparatus damaged.

DAMAGE TO PERMANENT WAY, &C.

Buffer stops (steel rails) carried away; signal post demolished; parachute water column demolished; 87 feet front platform wall destroyed;

48 feet back platform wall destroyed; 203 square yards platform flagging damaged; 95 feet platform fencing destroyed.

Printed copies of the above Report were sent to the Company on the 2nd February, 1909.

LIVERPOOL OVERHEAD RAILWAY.

Railway Department, Board of Trade,
8, Richmond Terrace, Whitehall, London, S.W.,
December 30th, 1908.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 21st December, 1908, the result of my inquiry into the causes of the collision which occurred on the 19th December between a passenger train and the buffer stop at Seaforth Sands on the Liverpool Overhead Railway.

In this case the 11.20 p.m. train from Dingle entered Seaforth Sands Station at too high speed and collided with the hydraulic buffer stop at the north end of the station. The rear bogie of the leading coach was derailed.

One passenger was seriously injured and 21 others complained of slight injuries.

The train consisted of three bogie coaches, the first and third being fitted with motors.

It was fitted with the Westinghouse brake working blocks on all wheels of the train, and the motor coaches are fitted with a hand-brake working blocks on the wheels of both bogies.

The accident occurred at 11.52 p.m. on a damp night, and the rails are stated to have been in a greasy condition.

Details of damage to rolling stock are given in the Appendix. There was none to the permanent way.

Description.

From Alexandra Dock Station, the one south of Seaforth Sands, to the latter is a distance of 1,490 yards. On leaving Alexandra Dock there is a $7\frac{1}{2}$ -chain reverse curve, on which speed is restricted to five miles an hour, and the second speed board is 219 yards from the centre of the Alexandra Dock Station. The line is then practically straight for