

been considerably higher, and the violence of the collision so much greater, that it is more than probable that some portion of the coal train would have been thrown foul of the down line, on which a passenger train was just about to pass, in which case the consequences would certainly have been more serious than they were.

The Assistant Secretary,
Railway Department, Board of Trade.

I have, &c.,
F. A. MARINDIN,
Major, R.E.

A P P E N D I X.

Particulars of damage done to engine 1527.

Buffer beam and iron plate broken through; front fall plate broken; foot-plate damaged at front of engine; both front buffers broken; smoke-box door broken and driven into smoke-box, and blast pipe broken off; both outside leading springs broken; both leading horn plates, right-hand outside framing, broken, and both inside axle-box horns broken off; steam brake gearing all damaged under the engine; sand pipes, feed pipes, and life guards broken; leading and driving wheels axles strained.

Particulars of damage to rolling stock in the collision at Lenton south junction, 3rd January 1889.

Third-class, No. 977.—Two quarter lights cracked.
Goods brake, No. 403.—Completely broken up.

Hucknall Colliery, No. 201.—Completely broken up.
Hucknall Colliery, No. 244.—One sole, two end pillars, five end planks, one buffer cap, one corner plate, one buffer hoop, and two axle guards broken, and body and frame very much knocked out of square.

Hucknall Colliery, No. 484.—One coupling broken.
John Ellis and Sons, No. 189.—One bent axle-guard, and three broken guard bolts.

Midland Railway waggon, No. 75,186.—One axle-box slightly broken.

Midland Railway waggon, No. 67,780.—One end plank broken.

Printed copies of the above report were sent to the Company on the 7th February.

NORTH-EASTERN RAILWAY.

Board of Trade, (Railway Department,)
1, Whitehall, London, S.W.,
9th April 1889.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 6th ultimo, the result of my enquiry into the causes of the double collision which occurred on the 2nd ultimo at Staddlethorpe Junction station, on the Hull and Selby Branch of the North-Eastern Railway.

In this case, as the North-Eastern Company's 9.20 p.m. up goods train from Hull for Selby was drawing out of a siding joining the up line at Staddlethorpe, it was run into by the Lancashire and Yorkshire Company's 9.55 p.m. up goods train from Hull for Liverpool via Goole; the force of the collision threw the engine of this latter train foul of the down line, where it came into collision with the rear portion of the North-Eastern Company's down express passenger train (which was passing at the time) from Leeds for Hull.

Two passengers in the express passenger train complained at the time of having been shaken, but they were able to prosecute their journey, and had not been heard of again when I held my enquiry.

No servants of either of the companies were injured.

The express passenger train was fitted throughout with the Westinghouse automatic brake, and consisted of an engine and tender, six vehicles forming the working portion of the train, and four empty ones at the rear, the sixth vehicle being a brake-van carrying the guard; the engine of the Lancashire and Yorkshire train came into collision with the first of the four empty vehicles and caused its trailing wheels to leave the rails; the second empty vehicle was completely thrown off the rails, had one axle bent and another one broken, its right axle-boxes broken, its right springs knocked off and damaged, and its right side damaged; this vehicle, together with the one in front of it, remained attached to the front of the train. The third and fourth empty vehicles at the rear of the train broke away from the second empty vehicle and were more or less completely destroyed.

In the Lancashire and Yorkshire goods train—which consisted of a six-wheeled coupled engine and six-wheeled tender, running engine in front, fitted with a steam-brake applying to all 12 wheels, 37 loaded waggons and a brake-van carrying a guard—the engine and tender were knocked off the rails and slightly damaged, and the two waggons next the tender, one of which was damaged, were also knocked off the rails.

In the North-Eastern goods train—which consisted of engine, tender, 44 loaded waggons, and a brake-van carrying a guard—three waggons near the tail of the train were knocked off the rails and separated from those in front of and behind them, two of these waggons being badly and one slightly damaged; the train was also separated between the 22nd and 23rd waggons from the engine.

In the permanent way two rails were broken and three were bent, 20 chairs and 27 sleepers were broken, and some switches and point rods were damaged.

The collisions occurred at 10.41 p.m., about 60 yards inside the up home-signal.

Description.

At the west end of Staddlethorpe Junction station the main lines between Hull and Selby are joined by the lines to and from Doncaster. The signal-cabin, which is on the north side of the line, is close to the junction points and to a public road level crossing, the gates of which are worked from it. The levers working all the points and signals (with the exception of those of a cross-over road about a quarter of a mile east of the cabin, which are worked from a ground frame controlled from the signal-cabin) are concentrated and interlocked in the cabin, and those signals to which it is necessary to refer are as follows:—

| | |
|---|-------------------------|
| The junction up home-signals for Hull and Doncaster - - - - | 35 yards west of cabin. |
| Up home or stop signal, covering junction of siding, out of which the North-Eastern goods train was coming - - - - | 220 „ east „ |
| Up rear-signal to cover cross-over road worked from ground frame, and always kept “Off” except while the cross-over road is in use - - - - | 470 „ „ „ |
| Junction up distant-signal - - - - | 730 „ „ „ |
| Up distant-signal to cover cross-over road worked from ground frame, and always kept “Off” except while the cross-over road is in use - - - - | 1,220 „ „ „ |

There is a good sight of these signals, which, with the exception of the up stop-signal, are all on the proper side of the line. This up signal is placed on the wrong side of the line; there having been a difficulty in procuring a suitable position for it (where it could be well seen) on the proper side. Up to the 19th January last the junction up home-signals had occupied a similar position, but on the proper side of the line, to that now occupied by the up stop-signal. The junction up home-signals were then moved forward to their present position so as to bring them close to the facing-points, and this new up stop-signal took their place. To a driver approaching the junction at night the position of the junction up home-signals appears much the same as before the change, and unless accustomed to work on the line he would be apt to overlook the new up stop-signal owing to its position being considerably to the right or wrong side of the up line.

The traffic is worked on the absolute block system: Weighton Canal cabin, 1 mile 72 chains in the Hull direction; Eastington cabin, 2 miles 19 chains in the Selby direction; and Green Oak Goit cabin, 1 mile 47 chains in the Doncaster direction, being the adjacent block cabins to Staddlethorpe. Though block working is applied to all trains, the following difference is made in dealing with goods or mineral trains as compared with passenger trains: with the former, “Line clear” may be given to the cabin in rear when a train was passed inside the home-signal; with the latter, the train must have passed the home-signal 300 yards, or must have passed the advanced-signal if there is one, and must be continuing on its journey, before “Line clear” may be given to the cabin in rear.

Staddlethorpe is approached from Hull for some distance on a straight line; the gradient rises to a point near the up distant-signal, whence, as far as the junction, the line is level.

Evidence.

1. *Thomas White*, signalman; 13 years' service, signalman all the time.—I have been employed at Staddlethorpe for some years, and came on duty there at 10 p.m. on 2nd March to remain till 6 a.m. I have an assistant signalman to help me; there are 29 levers in the cabin. There were some alterations recently made in the signal arrangements, which came into operation on January 22 last. I have a bolt to control the ground frame on the Hull side of the junction, but I do not control either the up home or up distant-signal worked from that frame. I got "Be ready" for the Selby goods from Weighton Canal at 10.13 p.m., "On line" at 10.19, the train arrived at 10.27, and was shunted into the up siding at 10.28, it having to leave a waggon of cattle. This was an unusual stop for this train. Next came the Doncaster goods train, for which I received "Be ready" at 10.19, "On line" at 10.28, and it passed at 10.35. I might have given "Line clear" for the Selby goods at 10.27, but I did not till it was back in the siding at 10.28. Next came the Lancashire and Yorkshire Liverpool train, for which I received the "Be ready" at 10.28, "On line" at 10.35, and the collision occurred at 10.41. The Selby goods train had whistled for leaving the siding at or about 10.35, and I at once pulled over the siding points and a disc which works with them, and lowered the junction up home-signal for Selby, but necessarily keeping the up stop and up distant signals at danger. The train immediately began to leave the siding, and it was still in motion forward with about 40 out of the 44 waggons on the main up line when it was struck by the engine of the Liverpool goods train, of which I had heard no whistle before the collision, though I had seen its two white head lights over a mile distant when I opened the siding points; after this I did not see it again. I had got "Be ready" for the down Leeds express passenger train from Eastington at 10.34, "On line" at 10.38, and it passed at 10.41 at its usual speed, which is considerable. I was not aware till afterwards that the engine of the Liverpool train had come into collision with the passenger train. The night was clear and frosty. I saw the driver of the Liverpool train after the collision, and he said that he was a stranger on the line, and had relied on his fireman as regards signals; he said he was deceived by the ground frame signals, which were showing white lights, and that he could not see the up stop-signal for the smoke or steam of the Selby engine. He said he had seen the directing signal off and thought it was for the Doncaster line. He said nothing about the tail light on the Selby train, but he remarked there was nothing wrong in the signals, but that it was wrong on his and the fireman's part to have mistaken them. The driver appeared perfectly himself when I saw him, which was two or three hours after the collision.

(*By Mr. Watson.*) The ground frame is generally used once a day, about 6.30 p.m., seldom after that time. The Selby train went away on its journey, the driver not being aware that there had been a collision, and that he had left a portion of his train behind him. The train passed the cabin about 10.41, but I did not send the signal "Train divided" to Eastington till the goods guard had come and told me that there had been a collision. The Selby train came back to pick up the rear portion of its train at 11.32 p.m. I judged the position of the Liverpool train by seeing it at Oxmar Dyke, about a mile distant. On further consideration I think that the tail of the Selby train had passed the cabin before it began to set back.

2. *John Morgan*, driver; 24 years' service, 16 years with the North-Eastern Company.—I was driver of the Selby goods train on the 2nd March. I left Hull at correct time, 9.20 p.m., picked up a waggon at Hessle and left with a train of 45 loaded waggons and a van, the full load being 50 in fine

weather. We stopped at Brough for water, and then at Staddlethorpe to put off the waggon we had taken up at Hessle, which waggon was next the tender. The signals were all off for us to run into Staddlethorpe, viz., up distant, up stop, and up home junction signal for Selby. The guard, who was on the ground, stopped me before setting back into the siding, which I then did on being waved back by his signal. I had first stopped at the stop-signal at 10.23, thinking to put the cattle waggon at once into the siding, but the signalman then waved me forward to put the whole train away, which I did without loss of time. The waggon was then detached and put into the cattle dock, and while this was being done I saw the Doncaster goods train pass. At 10.40 I was ready to come out, and whistled for the siding points. The points were at once set and the directing signal lowered, and I immediately drew out of the siding and went away towards Leeds, the engine passing the cabin about 10.41. I had seen nothing of the Liverpool train while I was drawing out, and was quite unconscious that I had left 23 vehicles behind. I was stopped by signal at Eastington, where the signalman informed me I had left part of my train behind, and I came back for it on the down line to Staddlethorpe, and then I heard from the guard that there had been a collision. Both I and my fireman had looked back as the train was coming out of the siding and had then seen that it was complete, but there was a waggon next the brake-van which prevented the side lights being seen on a straight line. I had felt the train pulling lighter than it had done, and made a remark to the fireman to that effect, but on looking back I could not tell whether or not the van was attached to the train.

(*By Mr. Watson.*) I think the night was quiet, and cannot say whether my steam obscured the light of the up stop-signal.

3. *John Dixon*, goods guard; seven years' service with the North-Eastern Company, one year guard.—I was the only guard of the 9.20 p.m. Selby goods train from Hull on the 2nd March. I came on duty on the 2nd March at 4.30 p.m. to leave work about 4 a.m. We left Hull with 44 waggons and a van, picked up a cattle waggon at Hessle, which was placed next the engine, and stopped at Staddlethorpe to put it off. The train first stopped at the up stop-signal at 10.23 p.m., thinking to put away the waggon at once, but the train immediately went forward and stopped with the brake about the signal-cabin, I giving the driver a signal with the hand-lamp. After being stopped we at once set back into the up siding with the whole train. I then uncoupled the engine, and after the necessary shunting, the engine rejoined its train and whistled to leave the siding at 10.40 by my watch. The road was at once made and the train started without loss of time, and was run into at the sixth waggon from the van by the engine of the Liverpool goods train. After recoupling the engine I had walked along the train and got into my van about 20 or 25 yards from the siding safety points, and I only saw the engine of the Liverpool train on going to the right-hand side of the van; the engine had passed the van and was running at a speed of five or six miles an hour, the speed of my train being about the same. I at once jumped off and kept my feet and escaped injury. The force of the collision separated my train at the 23rd waggon from the engine, 19 waggons were then left together, and then came three waggons and the van. Two waggons were broken up and two were off the road. The 19 waggons were left along the up platform. My driver went away not knowing the train had parted. I was not aware till afterwards that there had been a collision between the engine of the Liverpool train and a down passenger train. On arriving at Staddlethorpe I had three tail lamps, two side lamps, and a

centre one, all showing red lights. As soon as the van had got into the siding I changed the light next the up line from red to white, this is the regular way of working when trains are in sidings, though it ought really only to be done with trains running along an independent; according to rule the three lamps ought to have been taken off when we set back into the siding. This rule is difficult to be observed on account of the time it occupies. The collision must have occurred about 10.42. I have never complained that changing the lamps occupied too much time.

(By Mr. Watson.) I was assistant guard and pilot guard for about five years, and I have never been told to change lamps in sidings.

4. *Thomas Armstrong*, driver; 23 years' service, 22 years driver with the North-Eastern Company.—I was driver of the 9.5 p.m. express passenger train from Leeds for Hull on the 2nd March. It consisted of engine and tender and 10 vehicles, fitted throughout with the Westinghouse brake. I had last stopped at Selby and was running through Staddlethorpe at a speed of about 50 miles an hour, when, immediately after passing the platform, I felt the brakes go on. I at once shut off steam, and the train was pulled up dead in about 200 yards. I sent the fireman back to see what was the matter and I met him coming back, and he told me there had been a collision. On going back I found the seventh vehicle from the engine, an empty brake-van, damaged, then the eighth off the line with the trailing axle broken, the ninth broken to pieces, and the tenth broken, but on the rails with its wheels. On going towards the station I found the Liverpool engine obliquely across the 6-ft. space with its leading end foul of the down line, the wheels on the right-hand side buried up to the axles. I met the driver and fireman, who said neither of them was the worse. I had no conversation with him about the accident. I had just noticed both trains as I passed, and saw nothing wrong. The eight vehicles next the engine remained coupled to it, but the ninth and tenth were separated and remained about where they had been struck by the Liverpool engine. I believe the collision occurred about 10.40.

5. *George Dixon*, guard; 14 years' service with the North-Eastern Company, four years guard.—I was the only guard of the 9.5 p.m. express train from Leeds for Hull on the 2nd March. It consisted, on leaving Leeds, of nine vehicles, and on leaving Selby of 10, viz., six belonging to the working train, and four empty vehicles at the rear of the train. I was in the sixth vehicle from the engine, which was a brake-van. The vehicles were all fitted with the Westinghouse brake, which I could apply from my van. We left Selby 10 minutes late, waiting for the Great Northern connection from York, after which we had a clear run, having next to stop at Hull. We were passing through Staddlethorpe at a speed of about 53 miles an hour when I heard a knock, and then felt the brake suddenly go on, the pressure-gauge going down to zero. The train then came to a stand, and I got out, and found I had lost the two rear vehicles, and that the trailing wheels of the eighth vehicle were off the rails. I received no complaints of injury from passengers, of whom there were only a few in the train. I had seen nothing of the Lancashire and Yorkshire train, and did not know what had caused the accident till I went back and found the two rear vehicles, one completely broken up and the other much damaged. I think the collision occurred about 10.42 p.m. I was not hurt.

6. *James Branson*, goods guard; 14 years in the Lancashire and Yorkshire Company's service, guard all the time.—I have been used to working between Liverpool and Hull for the last six months, making the double journey about three times a week. On the 2nd March I had arrived at Hull from Liverpool at about 10 a.m., and started back after the day's

rest at 9.55 p.m. with a train consisting of 37 loaded waggons and a brake-van. I was the only guard at the rear of the train. We were due in Liverpool at 6.15 a.m. We left Hull at right time, having first to stop at Goole junction. We had a clear run up to Weighton Canal, where we were slackened by signal, but not stopped, and on approaching Staddlethorpe I found the ground frame up distant and home signals both clear, but the junction distant-signal and rear-signal were at danger; I did not notice what the junction home-signals were showing. I was never alarmed about the speed, and thought the driver would stop at the rear-signal; his speed on approaching it not having been more than five miles an hour. I had put on my brake about half a mile back, and had never released it. At first I thought my train had stopped in the usual way, and it was not till I saw some fragments of timber coming towards the van that I knew anything was wrong. I then saw the passenger train pull up with the engine about four carriage lengths beyond my van, which had just stopped before the passenger train did so. My watch, which was right at Hull, showed 10.40 p.m. as the time of stopping. I at once went towards the station and found the two waggons next the engine off the line to the right, still close to the engine and the third waggon. The engine and tender were also off the rails, and the engine foul of the down line. I saw my driver and fireman, who were not hurt. The driver said that the signals had been altered since he had last been here; that the ground frame signals had misled him, and that he had overlooked the fact of the up stop-signal applying to him, but that if the fireman had used his hand-brake he would have stopped. He also said that seeing the side lamp of the Selby train showing white, he thought that train was clear in the siding.

(By Mr. Davis.) I had no difficulty in seeing the signals as we approached them, except that the steam was blowing across towards the rear-signal, though I was able to see it.

(By Mr. Watson.) The rails were slippery.

7. *Edward Rigby*, 30 years in the Lancashire and Yorkshire Company's service, 10 years driver.—I left Liverpool on the 1st March at 10.10 p.m. with a goods train for Hull. We arrived at about 9.40 a.m., when the engine was taken to the sheds, and I went off duty at 10.40 a.m., and signed on at 8.10 p.m. I started from Hull at 9.55 p.m. correct time with a train of 37 loaded waggons and a brake-van, having first to stop at Goole junction. My engine was a six-wheel coupled engine and six-wheeled tender, a steam-brake applying to all the wheels of the engine and tender; and there was also a hand-brake for the tender wheels. Both brakes were in good order. We had a clear run to Weighton Canal, where we were checked, but not stopped, and then on approaching Staddlethorpe I found the first distant-signal off, and then the second distant-signal, i.e., the one for the junction, at danger; the next signal, a rear home-signal, was off, and I was then looking at the junction signals, both of which were on, when I first saw them about the junction distant-signal, but on seeing them again about half-way between the distant-signal and the stop-signal I saw that the right-hand signal had been taken off; I knew that this was not my signal, and I began to think I must have made a mistake in not stopping at the stop-signal on the wrong side of the line, which I had in the first instance thought was a distant-signal. At this time I might have been 50 yards or rather more from this stop-signal, my speed not being at the time more than six or seven miles an hour. I then at once applied the steam-brake, which I had once before used by the distant-signal to check my speed, and had afterwards released it, steam having been shut off just before reaching the junction distant-signal. I also reversed the engine (but had not time to apply steam the reverse way) and opened the sand-valves, and by these means I had checked my speed and struck the goods train at a speed not exceeding

three or four miles an hour. My engine got entangled with some of the waggons and was dragged forward by them and forced off the rails into the 6-ft. space foul of the down road, just as the down express train was passing. The smoke-box of the engine caught about the fourth carriage from the rear of the express. I believe the engine was nearly at a standstill when this second collision happened. The splinter from a carriage struck the cab, but neither I nor the fireman was hurt. The end of my tender stopped about opposite what had been the last carriage in the express. I had observed the Selby goods train in the siding, and as it was showing two red tail lights and a white light next the up line, I thought it was clear in the siding, and I was not aware that it was moving until I got very close to it. Had the goods train shown only red lights I should have sooner known that it was leaving the siding. I have never made more than four up journeys from Hull to Liverpool, this being the fourth, the previous one was seven weeks prior to the time of the collision, at which time the signals had not been altered; but a notice of their alteration had been given to me about five or six weeks before the collision, and this notice I had overlooked. Having so little knowledge of the line, fireman Thomas Wood was specially appointed to accompany me, as I understood he had a knowledge of the line. He said nothing to me as we were approaching Staddlethorpe, nor did I ask him anything about the Staddlethorpe signals, thinking he would have told me had I appeared not to understand them, and that he would have put on his hand-brake had he thought I was coming too fast. He had not been firing, but was engaged looking out for signals all the way from Brough. I have had no conversation with him about the collision since it happened. He is not my regular fireman. The junction signals in their present position show much the same to a driver approaching them as they did before the alteration.

(By Mr. McKay.) Wood has fired for me before some time since. We were on good terms before the collision. I had no occasion to ask him any question on the journey from Liverpool; he volunteered no information unless I applied to him.

(By Mr. Watson.) On the Lancashire and Yorkshire Line the rule is to turn one of the side lights of a brake-van when a train is in a siding or on a loop-line. The notice about the change of Staddlethorpe signals was published in a weekly notice applicable to signals and permanent way alterations, &c. The night was frosty, and the rails in consequence slightly slippery. I had no expectation of finding a stop-signal on the wrong side of the line. The only place where I saw steam interfering with the view of signals was in connection with the junction signals.

8. Thomas Wood, passed driver, acting as fireman; 15 years' service with the Lancashire and Yorkshire

Company, fireman eight years, passed as driver about four years since.—On the 1st March I was appointed to act as Rigby's fireman on the trip from Liverpool to Hull and back, on account of my knowledge of the line. I had not been on the line for about 10 months, but for the four months previously, from February to May 1888, I had made three trips a week. I did not know that the Staddlethorpe signals had been altered since I had last been on the line; I had not received one of the notices containing an account of the alterations being only a fireman; it is not the custom to supply firemen with these notices. I started from Liverpool about 10.10 p.m., and arrived in Hull between 9 and 10 a.m. on the 2nd March; left the engine about 10.30 a.m., and came back soon after 8 and started for Liverpool at 9.55 p.m., the first stop being Goole Junction. We were checked by signal at Weighton Canal box, but not stopped, and then went on to Staddlethorpe; I was looking out for signals on the way and found the first signal we saw off; this was the distant-signal, as I thought, from the junction; seeing this off I did not have the presence of mind to look for the next distant-signal; I then saw the next signal to this off, and this, I thought, was for the protection of the cross-over road, and that it was worked from the cabin; steam prevented my seeing the junction home-signal, and I saw the stop-signal on the right-hand side of the line showing danger just before we got to it, having been firing; I then saw the junction signals with the one off for the train leaving the siding for Selby, and we were then trying to stop at the place where the junction-signals used to stand, but failed to stop, and struck the goods train at a speed of three or four miles an hour, after which the engine was thrown across the 6-ft. space and caught the rear of the down express. We struck the goods train just as the engine of the express passed. I did not jump off nor was I hurt. When I first saw the light of the goods train I thought it was standing in the siding as it was showing a white light next the up line, and I did not know it was moving till we got up to it, when we were both going at about the same speed. My driver had put on the steam-brake before we reached the tail of the goods train. During the time I had been running on the line I had always thought that the signals at Staddlethorpe were all worked from the cabin. I never remember being stopped at Staddlethorpe before.

(By Mr. Davis.) I expected the driver to ask me if he wanted any information. I had a sight of the junction signals only a waggon or two lengths before the collision. I had let my fire get low expecting to have been kept in the loop at Weighton Canal until the mail passed, though it was not due for 20 minutes after us.

(By Mr. McKay.) Had I noticed the second distant-signal was at danger I do not know that I should have acted differently, though I might have spoken to the driver about it.

Conclusion.

This double collision was primarily caused by the comparative ignorance of the driver Rigby and fireman Wood (of the Lancashire and Yorkshire goods train) of the nature of the signals at Staddlethorpe Junction. An alteration, which had been recently made in these signals, had been brought into use on the 22nd January, and had been notified in the usual manner by printed notices to the drivers of all companies running over the line. Rigby had duly received this notice, but not Wood, it not being customary to supply such notices to firemen. The main features of the alteration as affecting drivers was (1) the substitution of an outer up stop or home signal, placed on the wrong side of the line, for the junction up home-signals which had been on the proper side of it, and (2) the moving forward of the junction up home-signals close to the facing-points or about 255 yards west of their former position; these junction signals in their new position appear to a driver approaching them by night very similar to what they had done in their old position, and the new up stop or home signal being on the wrong side of the line, made it possible for a strange driver to overlook

it or mistake its object. Driver Rigby had not been over the line since the alteration to the signals, and before that had only made three up journeys from Hull to Liverpool, the one prior to the present one having been made about seven weeks before the collision.

Rigby states that after having been checked, but not stopped at Weighton Canal Cabin (nearly two miles distant), he approached Staddlethorpe Junction, where he saw the first distant-signal off and the second at danger; the next signal, which he knew was a rear home-signal, was off, and that he was then looking out for the junction up home-signals, which he had seen to be at danger, and noticed when about half-way between the distant-signal and the new stop-signal that the right-hand junction-signal, *i.e.*, the one for Hull, was lowered, whereas he wanted the left-hand one, *i.e.*, the one for Doncaster. On this Rigby began to think he had made a mistake, and that he ought to have stopped at the new up stop-signal, which he says he had seen at danger, but had at first thought was a distant-signal; that he was now about 50 yards or rather more outside this stop-signal, the speed being six or seven miles an hour; that he at once applied the steam-brake to his engine and tender, reversed his engine and opened his sand-valves, but had time to do nothing more before coming into collision, at a speed of three or four miles an hour, about 60 yards inside the new up stop-signal with some of the waggons of the 9.20 p.m. goods train from Hull for Milford Junction, which train was moving at the time out of a siding on to the up main line. Rigby had seen this goods train in the siding showing two red tail lights and a white light next the main line some distance off, and thought in consequence of these lights that the train was clear in the siding, and did not realise that it was in motion till he got close up to it. By the force of the collision Rigby's engine became entangled with some of the waggons of the train it struck, was deflected towards the right and stopped foul of the down line just as the rear portion (happily four empty carriages) of the down express, from Leeds to Hull, was passing at a rapid speed of about 50 miles an hour, by which second collision the last two carriages of the express were detached from the rest of the train, and more or less destroyed, and the front of the train was stopped by the automatic action of the Westinghouse brake in about 210 yards, one of the best stops (when not experimental) that I remember to have met with.

Rigby further says that fireman Wood, who had been specially appointed to accompany him as having a knowledge of the line, gave him no reason to think he was approaching Staddlethorpe Junction too fast, either by word of mouth or by applying the tender hand-brake.

I cannot regard Rigby as being seriously to blame on this occasion; his principal offences are (1) in having overlooked the notice issued in January with reference to the change in the Staddlethorpe signals, which notice did not emphasize (as I think it ought to have done) the fact of the new up stop-signal having been placed on the wrong side of the line; and (2) in having assumed that this new signal was a distant-signal, and not one to be stopped at, instead of enquiring of his fireman (who ought to have been able to inform him) what it was. Rigby was running at no reckless speed, and would no doubt have stopped his train short of the junction home-signals, which he thought (though wrongly) was what he had to do. The wrong side light on the tail of the Milford goods train no doubt also helped, in the first instance, to mislead him; the tail lights ought (as it was on its way from the siding to the main line) to have been three red ones, whereas the one next the main line was a white light, the usual indication either that a train is in a siding, or is running on an independent line parallel to the main line.

Rigby has been 30 years in the Lancashire and Yorkshire Company's Service, and 10 years a driver. He bears an excellent character, and gave his evidence in a very straightforward manner. He had come on duty at 8.10 p.m., after an interval of rest of 9½ hours.

Thomas Wood, Rigby's fireman on this occasion, had been deputed to go with him, as having a knowledge of the line between Doncaster and Hull, though unfortunately not a very recent one, as he had not been upon it for about 10 months previously, when he had made three trips a week for a period of four months. This was, of course, before the alterations to the signals at Staddlethorpe, of which alterations, not being a driver, he had not received the notice, it not having been customary to issue these notices to firemen. On approaching Staddlethorpe, Wood states that he was looking out for signals, saw the outer distant-signal (which he mistook for the junction distant-signal) "Off"; that he had not, he says, *the presence of mind* to look for the next signal, but saw that the following one (which he rightly thought was for the protection of the cross-over road, but was mistaken in supposing that it was worked

from the cabin) was "Off"; that he did not observe the up home-signal (the one on the wrong side of the line) till just before he got to it, as he had been firing, and that directly afterwards he saw the junction home-signal "Off" for Selby; that by this time his train was being pulled up, and came into collision with the other goods train at a speed not exceeding three or four miles an hour, his engine being at the same time thrown foul of the down line just as the express train was passing; that when he first saw the tail lights of the goods train he thought it was standing in the siding, as it was showing a white light next the up main line, and only realised that it was in motion just before he reached it, and prior to which his driver had applied the steam-brake.

Wood cannot, therefore, be said to have been such assistance to his driver as regards local knowledge of signals, and he appears by his own admission to have been keeping a negligent look-out on approaching Staddlethorpe Junction, where he only saw the signals which were off, and not till too late the new stop-signal, which was at danger. He, of course, cannot be blamed for not knowing of the alterations to the signals since he had last run through from Hull, as he had never seen the notice concerning them; but he is much to blame for not keeping an intelligent look-out, which, had he been doing, he would have seen the new stop-signal in time to have drawn his driver's attention to it as a signal he did not recognise, have recommended him to stop at it as a matter of precaution, and thus very probably have averted the collision.

Wood has been 15 years in the service of the Lancashire and Yorkshire Company, eight years a fireman, and passed for a driver four years since. He had come on duty soon after 8 o'clock, after an interval of rest of about nine hours.

The guard of the Liverpool goods train is in no way to blame; he was unconscious that there had been a collision until he saw some fragments of timber coming towards his van.

The only other man to be censured is John Dixon, the guard of the North-Eastern goods train. According to the North-Eastern Company's rule he ought to have taken off the three lamps at the tail of his train when it shunted into the siding at Staddlethorpe, and have replaced them when the train began to move out again on to the main line. Instead of this, to save himself trouble, he only changed the light next the main line from red to white, which ought to have been done only in the case of a train running along an independent line parallel to a passenger line. His only excuse was that the rule is a difficult one to be observed, and that what he had done was the customary mode of treating tail lamps when goods trains are in sidings. It is quite probable that this breach of rule on the part of Dixon may have contributed to mislead the driver of the Lancashire and Yorkshire train. Dixon had come on duty at 4.30 p.m., to remain at work till about 4 a.m.

Though the North-Eastern goods train was divided between the twenty-second and twenty-third waggon from the engine, the collision having taken place with the thirty-ninth waggon, the sixth from the rear of the train, the driver went away unconscious that he had left 23 waggons behind, and only became aware of it when he was stopped at Eastrington, $2\frac{1}{4}$ miles from Staddlethorpe, and informed that he had done so. Both driver and fireman had looked back, but there was a waggon with a wide load next the van, which prevented the tail lights of the train, when on a straight line, being seen from the engine.

The driver of the down express train was not aware that the rear of his train had been struck till he felt the continuous brake being applied automatically, upon which he at once shut off steam, his train being stopped in about 210 yards from the place of collision, the two rear carriages having been detached and broken up, and the last two attached to the train being off the line, the last one with its trailing axle broken. Both the driver and the guard estimate the speed at about 50 miles an hour; and the stop, as before remarked, was an exceedingly good one.

There are several considerations arising out of the circumstances connected with this double collision to which I would draw attention.

1. It was a grave error in judgment on the part of the locomotive foreman at Liverpool to select a man with so little recent knowledge of the North-Eastern line between Hull and Goole as Wood possessed to act as pilot to Rigby.

2. In making the recent alterations at Staddlethorpe it was a mistake to place the new up stop-signal on the wrong side of the line, as in that position it was more likely to be overlooked by a strange driver than had it been on the proper side of the line. It is now, I understand, to be moved to a position on the up side of the line formerly occupied by the junction up home-signals.

3. It is desirable that the present junction up distant-signal should be dispensed with, and that the one which is now used only for the protection of the cross-over road worked from the dwarf frame, should serve also as the junction up distant-signal; the up home-signal used for protecting this same cross-over road should be controlled from the signal-cabin and precede the up distant-signal.

4. If the North-Eastern Company find it impossible to work block system with their goods and mineral trains without giving line clear to the cabin in rear directly the tail of a train has passed the home-signal, whereby the block interval may be reduced to the thickness of a signal post, they should, I think, at any rate instruct their signalmen to use the block-signal "Section clear, but station blocked" under such circumstances.

5. It seems to be a mistake of the Lancashire and Yorkshire Company not to issue to firemen as well as drivers all notices relating to alterations of signals whether on their own line or on other companies' lines, over which their engines run.

The Assistant Secretary,
Railway Department, Board of Trade.

I have, &c.,

C. S. HUTCHINSON,
Major-General, R.E.

Printed copies of the above report were sent to the North-Eastern and Lancashire and Yorkshire Railway Companies on the 8th May.

NORTH STAFFORDSHIRE RAILWAY.

Board of Trade, (Railway Department,
1, Whitehall, London, S.W.,

25th March 1889.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 5th instant, the result of my inquiry into the causes of an accident which occurred on the 28th ultimo, near Harecastle station, on the North Staffordshire Railway.

In this case, as the mid-day up express from Manchester (consisting of North Staffordshire engine—No. 55—and tender, and the following nine London and North-Western carriages, viz.:—one composite, one third-class, one composite, one second-class brake, one third-class, two composites, one third-class brake, and one composite, the three leading vehicles having six wheels, and the remainder eight wheels each) was approaching the loop-line junction signal-box, Harecastle, at about 12.57 p.m., the engine left the rails at the V point of the crossing of a sidings junction, and with the tender, ran for about 183 yards before being brought to a stand, when it was found that the leading wheels only of the engine had kept on the rails. The coupling between the tender and the leading carriage having parted, the whole of the carriages took the direction of the loop line, diverging towards the left hand, and when they came to a stand, having run for about 172 yards, it was found that the whole of them were off the rails.

No vehicle was upset, and only three passengers were injured slightly.

The permanent way was considerably damaged, about 196 yards being broken up; but the damages to the rolling stock were not serious.

For particulars of damage *see* Appendix.

Description.

At Harecastle station there is a junction between the lines from Crewe and from Manchester to Stoke.

About 616 yards north of this junction the North Staffordshire loop line from Stoke joins the line to Manchester on the up side, with trailing-points on the down line; and a few yards north of this junction there is a through road leading to the loop line from some sidings on the down side of the main line, and also a connexion with some sidings on the up side of the line, with trailing-points on the up main line. It was at the V point of the latter crossing, 66 yards north of the signal-box, that the first wheel left the rails.

Harecastle loop-line junction signal-box is opposite the junction, and Harecastle north signal-box is 436 yards farther north. Between the two signal-boxes the line is on an 80-chain curve to the left, as the train was running, and falling towards the south on a gradient of 1 in 330. The permanent way is strong and in good order, and of the standard North Staffordshire pattern for main lines.