

the data are correct, showing a good result from the action of the brake, seeing that the train was at the time ascending a gradient of 1 in 76·4.

The guard of the train felt the brake go on when he thinks that, at a rough guess, the brake compartment he was in was about 50 yards from the tail of the goods train. This can hardly be correct, as it would make the engine almost close up to the goods train when the brake went on, which is improbable, judging from the results of the collision.

No blame is, in my opinion, to be attached to the driver, fireman, or guard of the passenger train.

Though it might not have been the duty of the fog-signalman Jones, at Philips Park junction outer up home-signals, to go to the signalman and tell him of the long detention of the goods train, he would have acted with more intelligence had he done so. He had been on duty about 7½ hours at the time of the collision. He states that from where he was placed he was unable to see the inner up home-signals, distant about 200 yards.

Fog-signalman Harris, on the other hand, is to be commended for his action (not strictly part of his duty) in doing his best to warn the driver of the passenger train of the obstruction ahead of him.

This collision would probably have been prevented if the electrical locking of signals, combined with treadles or some other arrangement, had been in force between Sanitary Sidings and Philips Park junction.

It is also worthy of consideration whether, by a re-arrangement of the siding connections, the outer up home-signals at Philips Park junction could not be dispensed with. If this could be done, trains, instead of being kept standing 250 yards from the signal-cabin, could be brought within 50 yards of it.

I have, &c.,  
C. S. HUTCHINSON,  
Major-General, R.E.

Printed copies of the above Report were sent to the Lancashire and Yorkshire, and Midland Railway Companies on the 3rd February.

---

## LANCASHIRE AND YORKSHIRE AND LONDON AND NORTH-WESTERN JOINT RAILWAY.

Board of Trade, (Railway Department),  
8, Richmond Terrace, Whitehall, London, S.W.,  
19th August 1892.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 29th ultimo, the result of my enquiry into the circumstances connected with the collision which occurred on the 23rd ultimo at Preston station, on the Lancashire and Yorkshire and London and North-Western Joint Railway.

In this case the London and North-Western Company's 3.30 p.m. express passenger train from Wigan for Windermere, due to arrive at Preston at 3.52 p.m. and to leave it at 4 p.m., was, while stopping at the platform, run into at the rear by the Lancashire and Yorkshire Company's 3.20 p.m. express passenger train from Manchester for Blackpool, due to arrive at Preston at 4.17 p.m. and to leave it at 4.20 p.m.

Eleven passengers in the train from Wigan and two in the train from Manchester have complained of being injured.

The rear guard of the train from Manchester was injured in the head.

The train from Wigan consisted of 14 vehicles, the rear vehicle being a meat-van and the one in front of it a brake-van. The train was fitted throughout with the automatic vacuum-brake, which had been left "on" when the engine had been detached on its arrival some minutes before the collision occurred.

In this train the two rear vehicles were badly damaged, and the end compartment of the third rear vehicle was also damaged, no wheels being knocked off the rails in front of the two rear vehicles.

No damage was sustained by the train from Manchester.

The collision occurred about 4.21 p.m., the train from Wigan leaving more than 20 minutes late.

*Description.*

The immediate approach to Preston station from the south is controlled by signals worked from No. 1 and No. 2 signal-cabins, the latter being about the middle of the platform and the former about 350 yards south of it; a modified system of block-working is in force, it being impossible, having regard to the nature of the traffic, to work absolute block system through the station. In the present case the train from Wigan was standing with the rear vehicle 30 yards north of the advanced home-signal of No. 2 cabin, which was at danger to protect the train, and 173 yards north of the rear home-signal, which had been taken off (before it ought to have been) to allow the train from Manchester to draw up behind the other train.

The rule as to working which applies to the present case is as follows:—

“Should a train or engine be required to be sent forward into a section whilst the indicator of the block-instrument from the box in advance shows “Train on line,” it must be brought to a stand at the home-signal, when, if the proper acknowledgment of the “Be ready” signal has been received, the home-signal may be lowered for the driver to proceed. A green flag or green light must be shown to the driver as he passes the box.”

The lines through Preston station are practically level. The driver of the train from Manchester could have seen, had he been keeping a proper look out, the advanced signal of No. 2 cabin and the rear vehicle of the train from Wigan in ample time to avoid the collision.

*Evidence.*

1. *Reuben Cross*, signalman; 22 years in the North Union Company's service, signalman all the time.—I have been employed in No. 1 cabin, Preston, since it was built about 14 years since, and I came on duty there at 2 p.m. on 23rd July for eight hours. I have an assistant with me, and there is also a train booker and a telegraph clerk. All four of us were in the cabin when the collision occurred, about 4.21 p.m. The 3.30 p.m. train from Wigan for Windermere was warned on to me from Ribble Bridge at 4.11 p.m. on the slow line. I warned it forward to No. 2 cabin at 4.11 p.m., and I accepted it at 4.13 p.m., having, before doing so, to turn a special passenger train, which had been warned at 4.11 p.m. on the fast line, from the down fast to the down slow line before I could give “Clear” for the Windermere train to Ribble Bridge, and set the road for it to cross from the slow line into the platform line with home-signal No. 5. The platform line was not clear, and I accordingly kept up No. 5 signal till the train had come to a dead stand at it, and I then lowered the signal and gave the driver a green flag, the engine passing at 4.14 p.m. The next train warned from Ribble was the Blackpool express from Manchester; this was at 4.16 p.m. on the fast line. I passed on the warning to No. 2 cabin at 4.16 p.m. I stopped the train dead at No. 2 home-signal as I was not certain whether it would be able to clear the crossing from the up fast to the up slow line before the 4.25 up London train had to cross, and I asked No. 2 signalman on the telephone whether he could allow the Blackpool express to draw clear on to the platform, and he said Yes, as the Windermere train had drawn down. On receiving this reply I told assistant signalman Tattersall to lower No. 2 signal against which the engine of the Blackpool train was standing, and to show the driver a green flag. I did not see him do this, but I saw he had a green flag in his hand, and I asked him whether he had shown it, and he said that he had, but that the driver did not see it, though the fireman, who was on the framing of the engine, did see it. I thought the driver had started too quickly, but on seeing the rear home-signal of No. 2 cabin “off” I thought no more about it. The distant-signals below No. 2 home-signal and below the No. 2 cabin rear home-signal were both at danger. I have never worked in No. 2 cabin. I did not see when the rear home-signal was lowered, but I saw it off when the second vehicle from the engine of the Blackpool express was passing the

cabin. The day was clear. I heard a bump, but I could not tell where, at 4.21 p.m. I had taken the Blackpool express “on line” at 4.18 p.m., and it passed at 4.20 p.m.

2. *Joseph Tattersall*, assistant signalman; seven years' service with the North Union Company, about five years assistant signalman.—I came on duty in No. 1 cabin, where I have been employed for about five years, on the 23rd July at 4 p.m., to remain till 4 a.m. I lowered No. 5 signal to admit the Windermere train to the platform line. It had been stopped dead at that signal for about a minute in consequence of the platform being occupied, and then passed into the station. The next down train which was signalled was the Blackpool express on the fast line. This train was stopped dead at No. 2 home-signal for about a minute, and I then lowered the signal by instructions from Cross after he had heard from No. 2 cabin on the telephone that the train could be admitted. I held out a green flag to the driver as it passed, to indicate to him that he might be stopped by the signal at the platform end. I do not think the driver saw the green flag, as he was looking out on the other side. I did not shout to him as I did not think he was going very fast. The fireman, who was on the framing of the engine, standing up, looked towards me, but did not give any affirmative signal. When the engine had got to the end of the platform Cross asked me whether I had shown a green flag, and I said I had and I am certain I did. I first saw the rear home-signal of No. 2 signal-cabin off when the engine was half-way between No. 2 home-signal and that signal, but it might have been off before this. Both distant-signals were on when the Blackpool express approached. The speed of the train as it passed was faster than I could walk, but not 10 miles an hour. I have no recollection of a light engine passing on the up fast line between the Windermere and Blackpool trains.

3. *John Clough*, signalman.—I have been 12 years in the North Union Company's service, and 11 years signalman. I have been employed altogether five years in No. 2 cabin, two years from 1882-4, as regular signalman, and for the last three years as relieving signalman once a week, but for the last two months again as regular signalman. I came on duty on July 23rd at 2 p.m. for eight hours. I work alone

in the cabin and book the trains. I work permissive block between Nos. 1 and Fishergate Bridge cabins, or between No. 1 and No. 4 cabins, when Fishergate cabin is switched out. I consider the rules as to admitting up trains to a platform line means that a train must be brought to a stand at both home-signals if the platform is already occupied by another train. The rules permit of any number of trains standing at the platforms at the same time. At 4.12 p.m. I got the "Be ready" for the Windermere train, and I accepted it at the same time with one stroke on the bell, though at this time there was a train standing at the south end of the platform. The train came on at once, and stopped dead at No. 27 home-signal, after which I lowered No. 27 to allow it to draw up to the rear of a train from Liverpool going north, which was standing at No. 1 platform, on both sides of the scissors crossing. While the Windermere train was standing in this position, with the two rear vehicles outside No. 27 signal, I received the warning for the Blackpool express at 4.16 p.m. I accepted it by one stroke on the bell, the indicator still pointing to "Train on line." The train from Liverpool had drawn ahead directly after I had accepted the Blackpool express, and the Windermere train followed it down and came to a stand with the rear vehicle about 30 yards north of No. 28 home-signal; it could not draw down the platform further as the train from Liverpool was still in front of it. I got the train entering section for the Blackpool express at 4.20 p.m. about a minute after the Windermere train had drawn north of No. 28 signal, and the Blackpool express had come on to about 30 yards south of No. 27 signal, and had come nearly to a stand, when I lowered No. 27 signal, the distant-signal below it remaining at danger. I watched the train, and I was not alarmed at its speed until after it had passed No. 28 home-signal, when its speed did not exceed four miles an hour. The driver was leaning over the left side of the foot-plate trying to stop, as I thought; the fireman I did not see. I could not speak as to the brakes, nor as to when steam was shut off. I did not see or speak to the driver after the collision. I forgot to book an engine which was warned from No. 1 on the fast line after the Windermere train had drawn down. I lowered No. 27 signal for that engine which set back into No. 4 siding before the Blackpool express was given on. Before the collision I had not been in the habit of stopping trains at No. 27 signal, but since the collision I have stopped them. After I had accepted the Blackpool express, Cross asked me on the telephone whether I could admit the train, and I replied "Yes."

4. *Pryce C. Griffiths*, guard, 20 years' service; 13 years with the London and North-Western Company, and eight years guard.—I was in charge of the 3.30 p.m. train from Wigan for Windermere on the 23rd July. I came on duty at 10.10 a.m. to remain till 7.40 p.m. We left Wigan at 3.50 p.m., 20 minutes late, due to heavy traffic, and to the train being run into two portions. My train consisted of engine and tender and 14 vehicles equal to 15, the rear one being a meat van and the one next it a brake-van in which I should have gone forward from Preston to Windermere. We were brought nearly to a stand on the slow line at the signal of Preston No. 1 cabin, and were next stopped at the south end of the platform, with the whole of the train alongside it. Some passengers got out, and in about two minutes the train drew ahead and the meat van stopped a short distance inside the home signal of No. 2 cabin. My train was not stopped by another train being still in front of it, as the train which had stopped it, had gone clear away. We had been standing about three or four minutes when the collision took place. At the time I was unloading luggage from the middle van, the sixth vehicle from the engine, and the collision took me unawares. I had heard no shouting or warning. The engine of my train had just hooked off to change, but the vacuum-brake was on the train. The train was

hardly moved where I was standing, but at the rear the meat van and brake van were damaged and also the composite in front of it. The buffers of the engine got underneath the body of the meat van. I spoke to the driver of the Manchester train, who appeared none the worse for drink. He made some excuse about a signal being off, but I did not understand what.

5. *William Rawcliffe*, driver; 27 years in the Lancashire and Yorkshire Company's service; driver 13 years.—I am well acquainted with Preston station and have been accustomed to run in and out of it on the North Union line about two years. I commenced work on the 23rd July at 5.50 a.m. (having been off duty the day before) to sign off at 5.55 p.m. I had been standing about two hours at Cheetham Hill at midday. I brought the train for Blackpool from Cheetham Hill to Victoria station and thence started at about 3.21 p.m., one minute late, my engine being No. 870, an eight-wheeled engine with a leading bogie, and four coupled wheels and a six-wheeled tender, the train consisting of 14 vehicles including two brake-vans and two guards. The train was fitted throughout with the automatic vacuum-brake, the working vacuum being 18 inches. We stopped at Bolton and Chorley, the next stop being Preston; the brake acted properly at Bolton and Chorley. After shutting off steam at the Skew Bridge cabin about one mile south of Preston, my mate said that the piston-rod of the right-hand inside cylinder was working hot, and he went out on the framing to give it oil, and I am not certain when he came back to the foot-plate, but he was there before the collision. On approaching Preston No. 1 cabin on the fast line I found the right-hand home-signal at danger, but it was lowered when I was running at a speed of about two or three miles an hour, and when I was about 100 yards from it. I saw a green flag held out before I got to the cabin, but it was taken in before I passed. I understood the flag to mean that I might proceed to the next signal. The distant-signal below the home-signal remained at danger. A short distance north of No. 1 cabin I saw the rear home-signal of No. 2 cabin "off," but the distant-signal below it "on." I had shut off steam about this time. Seeing the home-signal off I concluded that I had a clear road to the north end of the platform and passed the rear home-signal at a good walking speed. It did not occur to me to look for the next home-signal at the scissors crossing, and I was not aware it was at danger till my mate called my attention to it when about half way between the two home-signals by saying "Wo!" I at once put on the vacuum-brake, the vacuum being about 18 inches, and struck the rear of the train at a slight reduction of speed. I think the brake acted well. I did not see the train till after I had put the vacuum-brake on. I do not remember that I was doing anything particular at the time. My place was on the left-hand side of the foot-plate; I did not apply the hand-brake to the tender, and I do not know whether the fireman did. I have been in the habit of running the same train, and have almost always had a clear road to the north end of the platform.

6. *Joseph James Jolly*, fireman; four years in the Lancashire and Yorkshire Company's service. I have acted as fireman for about 15 months, and have been a regular fireman for about three months. I have been with Rawcliffe for three months, and I was with him on the 23rd July, my place being on the right-hand side of the footplate. The journey from Manchester went all right so far as about one mile from Preston, where I saw for the first time that the piston-rod of the right-hand cylinder was smoking. I told Rawcliffe, and he told me to go and look at it, which I did, and came back and told him I found the piston-rod working hot—smoking very bad. He told me to take some oil to it, and I did so before we got to Ribblesdale Bridge cabin. I remained in front of the engine attending to the piston-rod, until we got about 40 yards from the

train in front, when I first saw it, and went back along the framing, and called out to the driver "Look out!" He at once applied the brake and looked out at my side to see what it was. I then came on to the footplate and opened the sand-valves, and also applied the hand-brake, though the latter was of no use, as the vacuum-brake was on, and we both of us remained on the footplate till the collision occurred. We were neither of us hurt. I think the speed did not exceed two miles an hour when I first saw the train. We were about 60 yards from the signal of No. 1 cabin, and were going slowly when it was taken off, a green flag was shown until we had nearly reached the cabin, when it was withdrawn, and at the same time I looked and saw the signal at the south end of the platform off, and at this time I was under the impression that this was the advanced signal of No. 1 cabin, and thought that we had a clear road up to the north end of the platform. I saw nothing of the signal on the platform. I was afraid to leave the piston as it was still smoking badly when I saw the train. My working hours are the same as the driver's.

7. *Andrew Graham*, six years in the Lancashire and Yorkshire Company's service; two years guard.—I came on duty on 23rd July at 1.25 p.m., to sign off about 10.45 p.m. I was guard of the 3.20 p.m. train from Manchester for Blackpool, and was in charge of the front portion from Manchester to Blackpool, and travelled in the front van next to the engine. We had a train of 14 carriages with a brake van front and rear. We were slackened about Skew Bridge and Ribble Bridge, and when we got to Preston No. 1 cabin home-signal we were brought almost to a stand, being close up to the signal when it was lowered. The signalman at No. 1 cabin exhibited a green flag

from his cabin window, and withdrew it as the train passed. We ran past No. 1 cabin at a speed of about three miles per hour. I had a good view, and was keeping a look out. Just as we passed No. 1 cabin I saw the rear home-signal for No. 2 cabin drop off, the distant-signal below it remaining on. Just about this time I was putting on my hand-brake in accordance with the rule, and just as we got to the platform I saw the middle signal on and I never saw it taken off. I could see the Windermere train in front just after we ran on to the platform. I did not at first feel the least afraid of striking it, but when we got under the signals I thought we should. I do not think we were going at a greater speed than two miles per hour when we struck the rear of the Windermere train. Shortly after turning the bend of the platform the driver applied his vacuum-brake, and reduced the gauge to zero. I was not injured, and no passengers complained to me of being hurt.

8. *Henry Hulme*, nine years in the Lancashire and Yorkshire Company's service; guard two months. I came on duty at 12.45 p.m. on July 23rd, to sign off at 11.30, and was guard in charge of the rear portion of the 3.30 p.m. train from Manchester for Blackpool. I am a summer guard and am stationed at Southport, and have been a spare guard for two months. I worked as extra guard all last summer. I was standing in the elevation of my van putting on my hand-brake when we struck the Windermere train. I was knocked backwards out of the elevation and sustained an injury to my head. We would only be going at a slow speed of four miles an hour at end of platform, and this was reduced on collision. No passengers complained to me of injury.

#### Conclusion.

The primary cause of this collision was a gross blunder made by signalman John Clough, on duty in Preston No. 2 signal-cabin, in lowering the rear home-signal to allow the Lancashire and Yorkshire Company's express train from Manchester for Blackpool to enter No. 1 platform line at Preston station while this train was still in motion a long distance from that signal. The train from Wigan for Windermere, the rear of which was run into by the Blackpool express, had been standing for about three minutes under cover of the advanced home-signal of No. 2 cabin, the last vehicle being about 30 yards north of or inside that signal. Under these circumstances the Blackpool express should have been admitted to the platform to draw up behind the Windermere train only after having been stopped at the rear home-signal of No. 2 cabin, 203 yards from the rear of the Windermere train. Instead of this Clough acknowledged that he lowered the rear home-signal when the train had come nearly to a stand, with the engine about 30 yards south of it. He acknowledged, moreover, that until the occurrence of this collision he had not been in the habit of stopping trains at this rear home-signal. From the evidence, however, of two signalmen in No. 1 cabin, and from that of the driver, fireman, and front guard of the Blackpool express, it appears that this rear signal was lowered when the train was passing or before it passed No. 1 signal-cabin, 145 yards south of this signal.

Clough has been 11 years a signalman frequently employed both as regular and relief signalman in No. 2 cabin, where he had come on duty on July 23rd at 2 p.m., nearly 2½ hours before the collision, for a spell of eight hours.

While thus attributing the primary cause of this collision to the premature lowering by signalman Clough of the rear home-signal, it would never have occurred but for want of the most ordinary care on the part of William Rawcliffe, driver of the Blackpool express, when entering the station. It was of course very misleading for him to find the rear home-signal of No. 2 cabin off just after passing No. 1 cabin, and when he was at least 100 yards from the signal, but he had no right whatever to assume that he had in consequence a clear road to the north end of the platform (where he was in the habit of running with this train) and might overlook the advanced home-signal of No. 2 cabin which was admittedly at danger and was covering the tail of the Windermere train by about 30 yards. Rawcliffe was evidently keeping no look-out ahead after finding the rear signal off or he would have seen either signal or train

in ample time to have stopped short of one or the other, whereas his attention was first attracted to them by his fireman (who was returning from the front of the engine from putting oil on a piston-rod which had been working hot), when the engine was about 40 yards from the train. The automatic vacuum brake was then at once applied, notwithstanding which the collision was sufficiently violent to cause considerable damage to the two rear vehicles (happily vans) of the Windermere train and to damage a passenger carriage, the third rear vehicle.

Both Rawcliffe and his fireman gave absurd evidence as to speed, stating that it was not more than from two to three miles an hour, when the fireman gave the alarm. Rawcliffe has been a driver for 13 years; he had commenced work on the 23rd July at 5.50 a.m. (having been off duty the day before) to sign off at 5.55 p.m. He had thus been on duty about 10½ hours at the time of the collision. His engine had been at rest at Cheetham Hill for about two hours at midday.

The attention of Jolly, Rawcliffe's fireman, was no doubt taken up with applying oil to a hot piston rod as the engine was approaching and running into the station, or he might have seen, sooner than he did, the signal at danger and the train in front. Still there was nothing really to have prevented him keeping a better lookout from the front of the engine, where he was in the best position for seeing both signal and train, and he is accordingly deserving of censure.

The front guard of the Blackpool express states that he had put on his hand-brake on passing No. 1 cabin, and was under the full expectation his driver would stop at the advanced signal of No. 2 cabin, the collision taking him unawares when the speed did not exceed two miles an hour.

The rear guard was also taken unawares by the collision as he was applying his hand-brake. He thinks the speed was about four miles an hour at the rear home-signal and less on collision.

No blame is to be attached to the servants of the train from Wigan.

The occurrence of this collision directs serious attention to the lax observance of the rule which (when block system is not used) directs that a train must be *stopped* at the home-signal of a station before being admitted to that station behind another train already there, and with which train it may have to form a connection; the rule being also the same when the block signal "Section clear, but station or junction blocked" is employed. Nothing is worse for discipline than the existence of a rule the breach of which is tacitly allowed, and I trust that the companies concerned will take means to have the rule as to absolute stopping strictly enforced in future.

It is also desirable to make the rule as to the duty of the signaller at Preston No. 2 cabin with regard to the use of the down rear home-signals perfectly clear.

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 Joint Companies on the 17th September.

---

## LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade, (Railway Department,)  
8, Richmond Terrace, Whitehall, London, S.W.,  
3rd May 1892.

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 20th ultimo, the result of my enquiry into the circumstances attending a fatal accident, which occurred on Easter Monday the 18th April, at Hampstead Heath station, on the London and North-Western Railway.

In this case, while the people who had been visiting Hampstead Heath on Bank Holiday were crowding into the station on the up side of the line between 6 p.m. and 6.15 p.m., a crush occurred at the foot of the staircase leading down from the booking hall and station entrance to the up platform, resulting in the death by suffocation of two adult females and six boys, and the injury of 14 other persons, a nominal return of whom is appended.