

it off when the express was about half-way between the Engine Shed box and the signal, and lowered his starting signal directly afterwards. Just as the home signal was lowered the fireman of the light engine saw the head lights of the Midland express engine coming behind him, and he at once whistled, shouted to his driver who was on the engine frame, and put on steam, but just as the engine began to move it was run into from behind by the express.

The driver of the light engine was knocked off the frame and severely injured, but is recovering and was able to give evidence at the Inquiry. He fell across the down road and narrowly escaped being run over by a passing train, being got out of the way just in time by the guard of the Midland express.

Signalman Botwright fully admits his two mistakes and must bear the entire responsibility for the accident. He is unable to offer any explanation as to how he forgot to lower his home signal for the light engine. He bears an excellent character and is a steady and intelligent man and is in perfect health. He had been over 11 years in the Lower Darwen Station box. He had been on duty about 4½ hours at the time of the accident having previously been off duty for 48 hours.

No other servant of either Company is to blame in any way.

The Assistant Secretary,
Railway Department, Board of Trade.

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

APPENDIX.

PARTICULARS OF DAMAGE.

Engine No. 1,667.—Engine buffer plate broken; both engine buffers broken; leading draw-bar hook broken off; both outside frames broken; both inside frames bent; vacuum pipes broken; both life guards bent and bolts sheared off; all footplate and angle iron at the leading end of engine twisted and broken, and rivets sheared off.

Midland Rolling Stock.

Midland bogie compo. brake 3,028.—Both headstocks, one longitudinal frame, two centre top beds, one centre longitude, one spring bed, and one bottom side rail damaged; one centre top casting, two buffer castings, one draw-bar hook, one bottom end frame, two spring shoes, one quarter light, &c., broken; four buffer rods bent; body moved on frame; two seats moved.

Midland third-class carriage 1,977.—Three end panels, one headstock, one buffer casting, &c., broken; two buffer rods and one axle-guard bent; one seat moved out of place.

Lavatory bogie compo. 3,153.—One headstock, one top centre casting and draw-bar broken.

Midland bogie compo. brake 3,027.—One top centre casting and bolts broken.

Lancashire and Yorkshire light engine 215/6.—Back of tender body cut open; tender buffers and plate broken; both sides of tender frames bent; trailing tender axle bent; water catcher damaged; brackets off water catcher diaphragm broken; tender brake rods bent; L.H. tender axle-box broken.

Printed copies of the above Report were sent to the Companies concerned on the 12th February, 1901.

LONDON AND SOUTH-WESTERN RAILWAY.

Board of Trade (Railway Department),
8, Richmond Terrace, Whitehall, London, S.W.,
December 7th, 1900.

SIR,
I HAVE the honour to report for the information of the Board of Trade, in compliance with the the Order of the 4th ultimo, the result of my enquiry into the causes of the collision, which occurred on the 1st October, about 8.22 a.m., between a horse-box train and a passenger train, at Virginia Water Station, on the London and South-Western Railway.

In this case, a train, consisting of a tank engine, three passenger coaches and a brake-van, whilst standing at the up platform for the Chertsey branch, waiting to take up passengers, was run into by a horse-box train travelling from Kensington to Woking. The horse-box train consisted of a tank engine, bunker leading, two horse boxes, a carriage truck, and a guard's van.

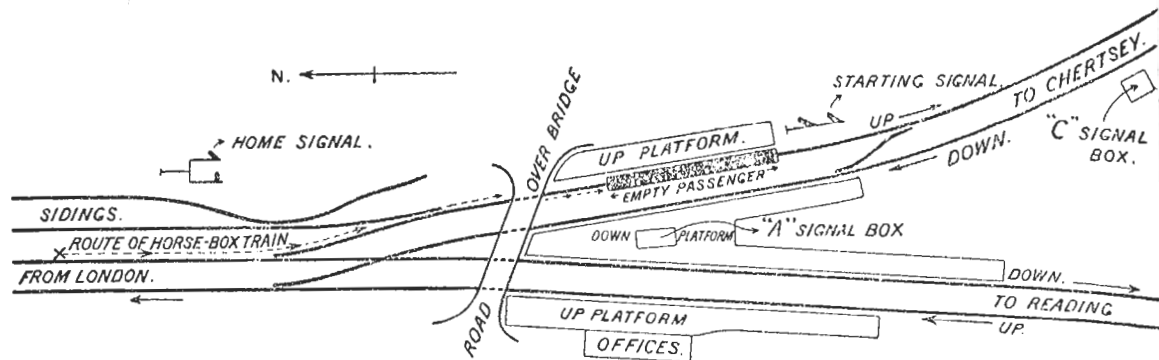
The passenger train is believed to have contained no passengers, although subsequently a complaint was received from a person who alleges he was in the train.

The guard of the passenger train died from the injuries he received, the drivers of both trains were seriously hurt, and the two firemen and remaining guard were shaken.

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

Description.

The arrangements at Virginia Water Station may be seen from the accompanying sketch. The Chertsey-Weybridge and Wokingham (for Reading) double line branches form a junction here.



It will be noticed that there is a road overbridge at the north end of the station which spans the four lines of way; also that the Chertsey branch line curves away considerably to the east. The position of the standing passenger train is shown on the sketch, and the route traversed by the horse-box train is indicated by the dotted arrow-head line. The gradients for a train travelling in this direction are falling, and vary from 1 in 728 to 1 in 2,200 at the station. The home and starting signals concerned (shown on the sketch in the "off" position) are worked from "A" signal-box on the island platform. The position of "C" signal-box is also roughly indicated. The brake-van of the standing passenger train would be first visible to a person travelling on the engine of the horse-box train at a point \times (*vide* sketch) about 220 yards distant.

The passenger train came to a stand at the up platform about 8.5 a.m., and was not due to start until 8.40 a.m.

The horse-box train was booked to arrive at Virginia Water at 8.45 a.m., and to leave at 8.50 a.m. It arrived, therefore, nearly 25 minutes before its time, as the collision occurred about 8.22 a.m. The shock of the collision was increased by the fact that the automatic brake was acting on the standing passenger train.

Evidence.

James Furmedge, travelling signalman, states: I have been in the Company's service 30 years. I came on duty on October 1st at 7 a.m., and would have worked until 2 p.m. I had not worked on the previous day. I have been employed during a month, off and on, in charge of "A" box, Virginia Water Station, and am fully acquainted with all the arrangements. The 7.35 a.m. passenger train from Weybridge arrived at Virginia Water at 7.52 a.m. After the platform work was over, it was pushed back over the cross-over road on to the up line of the Chertsey branch, in accordance with the usual arrangement. After obtaining "Line clear" on the block instruments from "C" box, and informing the signalman at "C" box on the telephone, the engine was detached, crossed over on to the down line and ran on that line to "C" box, through the cross-over road No. 9, and then back on to its train, which was standing in the meantime between the starting signal on the up line Chertsey branch and the inner advanced, or stop signal, for "C" box. The train was then backed

into position on to the up platform at Virginia Water Station. I estimate that it arrived at the up platform about 8.5 a.m. It was not due to go out until 8.40 a.m. The train has sometimes started from the up platform, and sometimes from the down. In this instance I backed the train off the down platform to clear the way for a material train on the up line, which passed Virginia Water at 8.9 a.m. This was the first occasion on which this train had to wait at Virginia Water from 7.50 until 8.40 a.m.; previous to the 1st October the train was due to arrive at 8.15 a.m., and to go out at 8.40 a.m. At 8.20 a.m. I was asked "Is line clear" from Rusham box for a horse-box train. This train is timed to arrive at Virginia Water at 8.45, and to leave at 8.50 a.m., and I do not remember a previous occasion when the horse-box train has preceded the passenger train. I offered the horse-box train at the same time to "C" box; they gave me "Line clear," and I then gave "Line clear" to Rusham box at 8.20 a.m. I expected this train, and warned on to "C" box, getting "Line clear"

from them, forgetting for the moment that the passenger train was standing at the up line platform. I pulled off the necessary signals, distant, home, starting, and my slot on "C" box inner advanced signal. About a minute after pulling off the signals, I recollected that the passenger train was at the platform, and ran to the frame to try and turn the train on to the main line, but the engine being on the locking-bar prevented me pulling the lever, and the collision occurred. At the time I expected the horse-box train I was informing myself as to the alterations to trains in the Train Time Table Book. This may partly account for my making the mistake.

Arthur Crowther, signalman at Virginia Water "C" box, states: I have been in the Company's service 15 years, during two of which I have been signalman. I came on duty on October 1st at 5.30 a.m., and was due to go off duty at 1.30 p.m. I received a bell signal from "A" box that the signalman was going to cross the train from the down to the up line about 8 a.m. I then received the six-bell signal for the engine to run on the wrong road, to be crossed over at my box. We do not book the six-bell signal. When the engine had taken the cross-over road, I gave the "Line clear" signal to the "A" box, and he accepted the material train on the down line. The passenger engine then proceeded on to the up line in charge of a shunter. At 8.22 a.m. "A" box cleared the road for the horse-box train. I accepted the train, not knowing on what line the passenger train was standing. I could see the train standing at the platform after the collision, and if I had seen it in the same position before the collision, I should have known it was on the up line, and taken steps to inform the signalman at the "A" box, but I did not happen to look in that direction.

Charles Leonard Jupp, porter, states: I have nearly two years' service with the Company. I accompanied the passenger engine in the shunting operation on the 1st October from "A" to "C" boxes. After taking the cross-over road at "C" box, I received a flag signal from the signalman at "C" box; the engine then backed on to its train, and, after coupling up, I waited for the signalman at "A" box to give me a signal to go back to the platform. On receipt of this signal I came back on to the platform. Afterwards, when I was in the porters' room on No. 1 platform, I heard the engine of the horse-box train whistle outside the home signal, and looking out saw the signal for the branch line was off. I ran across the lines on to the island platform, and shouted out to the guard of the passenger train, who I thought was in the brake. I should estimate the horse-box train was approaching at the rate of from 18 to 20 miles per hour. If the horse-box train had been required to stop at Virginia Water, it would have received a hand signal from "A" box, or from one of the platforms.

Albert Smith, station master at Virginia Water, states: The horse-box train is booked to stop at Virginia Water Station, but does not stop if there is nothing to attach or detach. As a matter of fact it is seldom stopped. If we require the train to stop at Virginia Water we usually advise Staines Junction; otherwise, if not required to stop, the engine driver should always have a hand signal from the platform at Virginia Water. In this instance no hand signal was given. The first I knew of the collision was the noise, and on proceeding to the spot I found the guard's brake of the passenger train smashed; the third-class

bogie in front being overturned. Neither the engine nor any of the horse boxes had left the rails. To the best of my knowledge there were no passengers in the train, though a complaint has been received from one passenger. The reason a hand signal was not given on this occasion was because the train was running before its time, and I was not informed by the signalman of the fact.

John Chapman, lamp lad, Virginia Water, states: The first I knew of the collision was the whistling of the train, and seeing the branch line signal was off, and knowing a train was standing on that line, I stood in the six-foot way of the main line and waved my arms and whistled.

William Oakes, driver, states: I have about 17 years' service with the Company, nearly three years as a driver. I came on duty on the 1st October at 5.30 a.m., and was due off about 2.30 p.m. I was not on duty the previous day. I was driving the 7.32 a.m. horse-box train from Kensington to Woking. I left Kensington at 7.38 a.m. My engine was a four-wheels-coupled trailing bogie tank engine, bunker leading, fitted with the vacuum automatic steam brake on the four coupled wheels, also hand brake on the four coupled wheels. The brakes were in good working order; I used them on the journey at several places to stop. I had only once previously driven this train. I knew the train was booked to stop at Virginia Water, and on approaching the home signal, at about 15 miles per hour, I blew the whistle to know if there was anything to go on to the train. I expected to receive a signal from the box in case we were to stop. I shut off steam before reaching the home signal so as to be prepared to stop, and began applying the brake gently half way between the home signal and the road bridge. Just as I got up to the bridge I saw a train standing in front of me, and I applied the brakes fully, and started reversing the engine, and the collision occurred almost immediately. I should say the speed was about 10 or 12 miles an hour at the time of the collision. Though I saw the train from about the home signal, I did not know it was standing on my line till I got within 20 or 30 yards of it. After finding all the signals off for me, I was looking for a hand signal, and this may have diverted my attention from the standing train.

Edmund Rawlings, fireman, states: I have nine-and-a-half years' service with the Company. On the 1st October I came on duty at 5.30 a.m., and was due off duty at 3.30 p.m. I was not on duty the previous day. Just before passing the home signal I had been using the injector, and on finishing this I saw the home signal was off. Though looking in front of me, I did not see anything in front. We were travelling about 15 miles an hour. The driver had shut off steam after passing the distant signal. The first time I noticed him applying the brake was almost immediately before the collision, when we must have seen the train standing in front of us about the same time, and for the first time. I applied the steam brake and opened my sand, and then dropped on to the footplate. I knew the train was booked to stop at Virginia Water, and we were preparing to stop there, if required.

Charles Cecil Mortimer, guard, states: I have 11 years' service with the Company, three years as a guard. I came on duty at 6.45 a.m. on the 1st October, and was due off at 6.30 p.m. I came off duty on the previous day at 12 midnight.

I was guard of the horse-box train from Kensington to Woking. My train consisted of two horse boxes, carriage truck, and a brake-van, the first three vehicles having four wheels each, the guard's van six; 18 wheels in all. The vehicles were fitted with the automatic vacuum brake, blocks on all wheels except the centre pair of the brake-van. This train is booked to stop at Virginia Water, but it does not stop except when required. Before reaching Virginia Water I had received no information as to whether we had anything to attach to the train at Virginia Water; no vehicles had to be detached. We get a hand signal from the Reading platform at Virginia Water if we are required to stop. Just before reaching the home signal I heard the driver whistle for this hand signal. After passing the home signal, and looking out on the left of my brake, I saw some carriages standing in the station, but it never struck me that they were on our line, because the signals were off for us, and it was only when we were 30 yards from the bridge that I first recognised that there was a train standing in front of us. I estimate that at the time of the collision we were travelling about 15 miles an hour. I was not very seriously injured by the collision. I heard the brakes go on, and all the vacuum had gone before the collision.

David Brunning, driver, states: I have been in the service of the London and South-Western Railway Company for about 27 years, for 22 of which I have been a driver. I came on duty on the 1st October about 6 a.m., and was due off duty at 3.30 p.m. I drove the 7.35 a.m. passenger train from Weybridge on that day. My engine was a four-wheels-coupled bogie tank engine, fitted with the vacuum automatic steam brake,

with blocks on the four coupled wheels. There is also the usual screw hand brake on the four coupled wheels. We arrived at the down platform of Virginia Water about 7.52 a.m., and after the platform work I backed the empty train on to the up line of the Chertsey branch. My engine was then uncoupled and I pulled out on to the down road, and backing down to the "C" box, we crossed over to the up road and then rejoined the standing train, which we pushed into Virginia Water Station. We came to a stand at the up platform about 8.5 a.m.; my engine was then standing bunker leading. I applied the automatic brake to bring the train to a stand, and after putting the engine out of gear and seeing things were all right, I left the engine in charge of the fireman, who was cleaning his lamps, and went to speak to the guard of my train on the subject of the changes in tours of duty which commenced that day. I had only been speaking to him about two minutes, and we were both standing up—the door, I think, was shut—when the collision occurred. I am quite certain that neither of us had any idea of anything being wrong. At the time of the collision the automatic brake blocks were applied. It is the custom in cases where a train has to stand any considerable time at a platform or sidings to knock the jets or handles of the automatic brake out of gear, in order to economise steam, and also to prevent the noise of exhaust steam from the main pipe. We have no instructions to this effect, but we have orders to apply the steam hand brake on all such occasions. It is possible to release the brake blocks by obtaining the necessary vacuum, and afterwards knock the brake out of gear, in which case, under favourable circumstances, the vacuum would be maintained for a very considerable period.

Conclusion.

The evidence sets forth clearly the circumstances and cause of this accident. Signalman Furnedged, who was in charge of "A" signal-box, admits that he accepted the horse-box train when offered to him by Rusham box, and pulled off all the necessary signals for its passage on the up line of the Chertsey branch, forgetting that the passenger train was standing on that line at the platform. This is the more inexplicable as he had an excellent view of the passenger train from the windows of his box. He appears subsequently to have suddenly recollected the position of the passenger train, and to have attempted to divert the horse-box train on to the down Reading line, but unfortunately too late to avert the collision.

The full responsibility for the accident therefore rests on him.

Furnedged had been on duty an hour and a half at the time of the accident. He has been one of the picked staff of the Company's relief signalmen for 27 years, and bears an excellent character. The alterations in the time tables, which commenced on the day in question, as well as the unusually early arrival of the horse-box train, may in part account for Furnedged's mistake. He, at least, deserves credit for the straightforward manner in which he gave his evidence and accepted full responsibility.

The jury returned a verdict of "accidental death" at the inquest held by the Coroner on the death of the guard of the passenger train. I attended this inquest in the capacity of Coroner's assessor, and concur in the verdict given.

Whilst not wishing in any way to minimize the mistake made by, and the responsibility which rightly falls on, signalman Furnedged, I wish to draw attention to some minor points connected with the accident.

Had Driver Oakes, of the horse-box train, been looking straight ahead whilst approaching the home signal, I do not think he could have failed to see the rear, and recognise the position, of the standing train, from a sufficient distance to have enabled him to avert an actual collision. The fact that he was driving bunker in front may explain why he did not recognize more quickly the position of the train in front of him. It appears to me that the mere fact of a man's work necessitating the frequent turning

of his back to the direction in which his engine is running, must militate against the maintenance of a good look-out.

The horse-box train was booked to arrive at Virginia Water at 8.45 a.m. and to depart at 8.50 a.m., and it is not clear why this booked stoppage has been allowed to fall into disuse, apparently without authority.

The Company will, doubtless, recognize the danger of permitting an empty train to occupy a running line for so long a period as 35 minutes, and consider whether further facilities, in the shape of siding accommodation, are required at Virginia Water. The present intricate and cumbersome method of crossing trains, etc., which involves running on the wrong line between two signal boxes, also appears to deserve consideration.

The Assistant Secretary,
Railway Department, Board of Trade.

I have, &c.,
J. W. PRINGLE,
Major, R.E.

APPENDIX.

Damage to Rolling Stock.

Engine of horse-box train.—Three buffers and back of coal bunker broken; vacuum pipe, large whistle and tool boxes broken.

Engine of passenger train.—One buffer broken.

Brake-van, No. 134.—Completely destroyed.

Bogie Third Class, No. 49.—Will require to be rebuilt.

Bogie Composite, No. 344.—Drawbar pin, coupling, side chain and head-stock broken.

Bogie Third Class, No. 1160.—Two head-stocks and one buffer casting broken.

Damage to Permanent Way.

Eleven 40-lb. chairs, four fish-plates and one sleeper broken.

Fifty feet of platform coping displaced.

Printed copies of the above Report were sent to the Company on the 4th January, 1901.

LONDON AND SOUTH-WESTERN RAILWAY.

Board of Trade (Railway Department),
8, Richmond Terrace, Whitehall, London, S.W.,
November 8th, 1900.

SIR,

I HAVE the honour to report for the information of the Board of Trade, in compliance with the Order of the 11th October, the result of my enquiry into the collision that occurred on the 7th idem at Twickenham Station on the London and South-Western Railway.

In this case, as four special coaches were being transferred from the rear of the 7.45 p.m. up train from Reading to the front of the 8.30 down train to Kingston by the engine of the latter, they came into sharp collision with 8.54 up train from Gunnersbury which was due at Twickenham at 9.12 p.m.

The driver of the Gunnersbury train was badly hurt and the fireman cut about the head. The driver of the Kingston train was shaken, and 49 passengers complained of injury, one of whom is reported to have received a nasty shock.

Both engines were considerably damaged. Three of the vehicles that were being shunted and two of those belonging to the Gunnersbury train were more or less broken, the van next the engine of the latter having its end compartment completely smashed in. Details of the damage to the rolling stock and permanent way will be found in the Appendix.

Description.

This collision occurred about 160 yards west of Twickenham Station on the up Windsor line. There are three lines passing through the station, viz., the up loop, the up Windsor, and the down Windsor, their direction being approximately east and west. Twickenham is the junction between the Windsor lines and the Kingston lines; the down