

LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade (Railway Department),
8, Richmond Terrace, Whitehall, London, S.W.,
August 15th, 1896.

SIR,

I HAVE the honour to report, for the information of the Board of Trade, in compliance with the Order of the 30th ult., the result of my enquiry into the accident that occurred on the 28th July at Adlington junction on the Lancashire and Yorkshire railway.

In this case, as the 8.35 p.m. up passenger train from Blackpool to Manchester was passing through the above junction (in the facing direction) the two last vehicles left the rails, and were dragged along the ballast for a distance of about 450 yards before the train came to a stand just at the north end of Adlington station.

Sixteen passengers are reported to have complained of injury, of whom five were hurt rather seriously.

The train consisted of engine No. 430, tender, and 12 vehicles—equal to $13\frac{1}{2}$ —of which the two last were, respectively, a four-wheeled third-class carriage, and a third-class, bogie, brake carriage; and immediately in front of these vehicles were four four-wheeled third-class carriages.

The derailed vehicles and the permanent-way sustained considerable damage—for details see Appendix.

Description.

Adlington station is about 11 miles south-east of Preston, on the main line of the Lancashire and Yorkshire Railway from Preston to Bolton, and about 650 yards north of the station there is a junction with the Lancashire Union branch line to Boars Head and Wigan. The signal-cabin, from which the points and signals of the junction are worked, is on the down side of the railway immediately opposite to the facing-points, which are on the up line.

Approaching the junction from the north, the up main line is on a curve to the left of about 90 chains radius, which curve extends, south, to Adlington station, the up branch line leaving the main line with a reverse curve, to the right, of 40 chains radius. The line is in good order, and the facing points are provided with the usual locking bolt and bar, the latter being 32 feet 6 inches in length; the bar is, however, placed outside the inner rail of the curve, and it is undoubtedly possible, under certain conditions, for the bar to be moved during the passing of a train. Owing to the reverse curve of the branch line, there is practically no superelevation of the outer, or right-hand, main line rail near the points.

The point-rail is 18 feet in length, and has about $3\frac{3}{4}$ inches play at the nose or thin end. The adjustment of the point and stock rails appeared to leave nothing to be desired. The gauge of the line approaching the junction is from $\frac{1}{4}$ to $\frac{1}{2}$ inch slack, but at the points the gauge is, as it should be, slightly less than 4 feet $8\frac{1}{2}$ inches.

After the accident the facing points were examined and found to be in perfect order, excepting that the right-hand switch rail (which was against the stock rail) was slightly bent, and 7 inches of the top edge of the nose of the switch was broken off; the break commenced about one inch from the nose and was in two pieces, which were subsequently found on the sliding chair *between the point and stock rails*. The main and branch lines were otherwise uninjured between the points and the ∇ crossing of the left-hand branch rail with the right-hand main line rail (90 to 100 feet), but there seems to be little reason to doubt that the two rear vehicles ran on the branch line in that length; whilst a flange mark, 2 feet 6 inches long, on the left-hand branch rail, 260 feet from the facing points, goes to show that at any rate one wheel of the derailed vehicles must have mounted and run over the top of the rail at that point. The two carriages were dragged, more or less across both the up and down main lines, for a distance of nearly 400 yards, broken chairs and sleepers marking the paths of the wheels; the trailing wheels of the third-class carriage were left behind off the rails of the up line, 200 yards from the junction, and a signal post on the down side of the down line was struck by the projection of the van of the rear carriage. When the train came to a stand the third-class carriage was across the up line and the six-foot space, and the bogie brake carriage was across the down line, the couplings not having given way.

Some particulars of these two vehicles are given in an Appendix, but the damage sustained by them makes it impossible to say for certain whether or not there were any defects in the third-class carriage previous to the accident, which may have

caused, or contributed to, their derailment; but it must be remembered that they only left the rails after passing through the points on to the branch line, and, when they would naturally be dragged off, by remaining attached to the carriages in front of them on the main line.

Evidence.

Charles Bayley states: I have been eight years in the Company's service and a guard since February last. On the 28th July I came on duty at 12.15 p.m. to work until 11 p.m. On that date I left Blackpool at 8.35 p.m. to run to Manchester, and on leaving Preston I had 12 vehicles, equal to $13\frac{1}{2}$, behind the engine. The last stop before Adlington junction was at Chorley. I rode in the rear carriage, which was a third-class bogie carriage with five passenger compartments and a brake compartment; the next carriage in front was a four-wheeled third-class carriage, and a similar carriage was in front of it. Until we arrived at Adlington I had noticed nothing whatever unusual, and the whole of the vehicles had run smoothly. The first thing I noticed was a swerving to the right, and it seemed as if we were going up the branch. I feel confident the wheels were not then off the rails. I was thrown down before I could look out of my left-hand side-light, and as soon as I could pick myself up I applied the automatic vacuum-brake. We were off the metals all the way then until we came to a stand, and I cannot say at all what was happening to the vehicles in front. When we stopped the rear vehicle was across the up and down main lines, and the carriage in front had the trailing-end foul of the down line. I was shaken, but not otherwise injured.

Richard Jenkins states: I have been in the Company's service three years, all the time as a porter. On the 28th July I rode as a passenger in the 8.35 p.m. train, Blackpool to Manchester, from Chorley, in the rear compartment of the third carriage from the end. I did not notice any roughness or jumping in the running of the train between Chorley and Adlington, and at the junction the speed would be about 30 miles an hour. I felt a jerk of my carriage, and looking out I saw the carriage behind us leaning over, and I heard the people in that carriage and the one in rear of it calling out. Shortly after I heard a crash, which, I think, must have been when the rear carriage struck the signal-post. The couplings between my carriage and those off the rails did not give way at all. I often ride in the train through Adlington junction, and have never noticed any roughness there. I do not think any wheels of my carriage ever left the rails, and it did not jump at all.

Samuel Critchley states: I have been 21 years in the Company's service, 12 years as a goods guard. On the 28th July I was working the 7.40 p.m. goods train from Scot Lane to Fleetwood. I came on duty at 3 p.m. to work until about 2 a.m. on the 29th. On arrival at Adlington junction my train was put on the down Lancashire Union line, and the engine did various shunting operations. When the train from Blackpool arrived at the junction, I was standing a few yards on the south side of the cabin. I saw the home-signal off for the train and I did not notice it being put back to danger, but it was at danger before the train stopped. When the second vehicle from the rear arrived at the facing points I noticed sparks flying from the right-hand switch, I saw two vehicles were running on the branch road, and I turned round to get out of the way. When the vehicles got to the crossing of the up branch with the down main the tail-end of the bogie seemed to swing round and the carriage went on broadside to the main line with the rear bogie in the six-ft. way between the down main and the sidings. I did not examine the permanent-way at all. Whilst the train was still travelling the signalman said to me, "What must I do?" and I told him to block both roads. I followed up the train to see if I could give any assistance to passengers. I had asked the signalman what up branch trains

were coming, as I wanted to use this branch line for shunting, and I should have required to bring the engine from the up branch to the up main and then to the Ellerbeck branch—which the signalman was aware of. He (Bullough) spoke on the telephone to Chorley to find out what trains were coming, and I think he had finished the conversation before the 8.35 train ex Blackpool arrived at the junction.

Henry Bullough states: I have been 10 years in the Company's service, eight years as signalman and three or four years at Adlington junction. On the 28th July I came on duty at 10 p.m. to work until 6 a.m. on the 29th. The 8.35 train ex Blackpool was given "on line" at 9.58 p.m. I had come on duty at 9.55, when I relieved signalman Ainscough, who had accepted the train. The train passed my cabin at 10.2, the home and distant signals being off for it. Ainscough left the cabin at 9.55. Guard Critchley had been told by me where the vehicles were which he had to pick up, viz., on the Ellerbeck branch, and I telephoned to Chorley to find out if there would be time for the shunting operations before any other train followed the 8.35. They told me the next train was not leaving Preston until 9.59. Critchley was with some of his waggons in front of the cabin. His engine was then on the branch up line, and as soon as the 8.35 passed I intended to bring the engine out on to the up main line and then through to the Ellerbeck branch. The train was just passing the cabin when I left the telephone, and I went to the window in front of the cabin at the Chorley end of the cabin. The up main line levers are at that end of the cabin. The whole of the train seemed to me to pass through the junction points all right, but I did not see the tail lamp. The trucks referred to above were on the loop line between me and the main line. I went out to the steps at the south end of the cabin to look for the tail lamp, and I then saw the rear vehicles of the train were off the rails. Up to that time both the home and distant signals remained off. The block was on in all directions, and I sent the "train passing without tail lamp" signal to Chorley No. 1 cabin and "stop and examine train" signal to Adlington station. I am unable to offer any explanation as to why the vehicles left the rails. The cross-over road between the up and down branch lines had been set, and the lever working the points is interlocked with the lever working the facing points on the up main line.

Thomas Martindale states: I have been 36 years in the Company's service, and I am ganger of the Bolton district, which includes the lines through Adlington junction. I have been in charge of this district about 12 years. Nothing whatever has been done to the up line at Adlington junction beyond ordinary repairs for $2\frac{1}{2}$ years, when new switches were put in. The switches are 18 feet in length. The crossing of the left-hand up branch rail with the right-hand up main is 1 in $11\frac{1}{2}$, and has always been the same. The facing-points have the usual locking bolt, and a bar 32 feet 6 inches in length; the bar is outside the left-hand rail. The line is on a curve to the left as the train was running. I arrived at the junction about 20 minutes after the accident. I found the facing-points standing for the main line and bolted, the nose of the right-hand switch was newly broken. I borrowed a lamp from guard Critchley. There was no other damage done between the facing-points and the first V crossing. I examined the left-hand switch rail, and it had not been touched by anything. It would, in my opinion, have been impossible for the wheels to have been off the road

at all between the facing-points and the first V crossing. From the latter point to where the rear vehicle ultimately stopped, the sleepers were damaged in the 6-ft. way between the up and down main lines, also in both 4-ft. ways. The four-wheel carriage probably followed the up road, and it left its trailing-wheels about half-way between the facing-points and where it stopped. The bogie-carriage followed the down line. I asked the signalman to work his points, and he moved them three times and also bolted them. They fitted quite well both sides. I had been at the spot about 2 o'clock the same afternoon, and the points were then moved and bolted in my presence, and I am quite certain that at that time the nose of the points was uninjured.

Thomas Martindale, junr., states: I have been 18 years in the Company's service, and a foreman

platelayer for 12 years. My length is from Adlington junction to Whittle's siding, and I take the main line and Lancashire Union junction. On the 28th July I examined the up line and the junction points, about 5.10 p.m. Everything was then all right. I had the facing-points tried and they were in perfect order. I arrived at the junction about 10 minutes or $\frac{1}{4}$ hour after the accident. I examined the points at once, as guard Critchley told me they had been struck (with a lamp lent me by Critchley). I could see that a piece was chipped off the top of the right-hand switch rail. I asked the signalman to pull the points over, but he said it would be better to wait until someone else came. I have been on the same length for the last 18 years. About a fortnight ago the sleepers at the points were "beaten up." The switches have not been touched since they were put in 2 years or $2\frac{1}{2}$ years ago. They have never been hit before.

Conclusion.

Difficult as it often is to determine with certainty the cause of a "run off," the case under consideration is one of even more than ordinary difficulty and must remain a matter of some doubt.

Running at a speed estimated at about 35 miles an hour on an easy curve to the left, the engine and 10 vehicles passed on the up main line through the junction, whilst the two rear carriages apparently followed the up branch line to the right and then, becoming derailed, were dragged along the ballast and across both main lines after the leading portion of the train.

The passage of the train through the junction was witnessed by goods guard Critchley, who was standing just in front of the signal-cabin on the down main line, and he noticed sparks flying from the right-hand switch rail as the second vehicle from the rear arrived at the facing-points; this rail was subsequently found to have a jagged piece, seven inches in length, chipped off the top quite close to, but not at, the nose of the switch. He at once realised there was something wrong, and he turned round to get out of the way, but he appears to have seen the tail-end of the rear bogie-carriage swing round at the crossing of the up branch with the down main line.

That the rear vehicle went through the facing-points on the branch instead of on the main line rails is also the opinion of guard Bayley, who was riding in the brake compartment at the tail-end of that carriage, and the complete absence of any marks on the sleepers and chairs for 100 feet in advance of the points seems to be clear evidence that all the wheels were then on a pair of rails. It is, however, almost inconceivable that two vehicles so different in their wheel bases and construction generally, can have both left the main line and passed on to the branch line in this way without the points being open for the branch.

The right-hand switch when closed for the main line is against the stock rail, and it appeared to fit closely and well, whilst the left-hand switch had no marks on it of any kind.

If the evidence of the ganger and of the foreman platelayer is correct, which there is no reason to doubt, the top of the right-hand switch was seen to have a piece chipped off as soon as they arrived on the scene after the accident, and they are positive it was newly broken; when the points were afterwards moved by the signalman, two broken pieces were found between the stock and the point-rails. After a most careful examination of the points I am unable to see how these pieces could have got where they were without the switch having been previously moved.

As stated above, the facing-points are fitted with the customary bolt and bar; the latter *should* make it impossible for the signalman to withdraw the bolt or, therefore, to move the points during the passing of a train. In this case the bar was not an absolute protection, as I am satisfied, from trial on the spot, that it might have been moved from the cabin at any time, the wheels not being properly over a bar outside the left-hand or inner rail of the curve with no super-elevation of the outer rail. Before, however, the lever in the cabin connected with the bar and bolt can be moved the interlocking makes it necessary for the main line signals to be put back to danger. Two signals had been taken off, viz., the distant and the home signals, and signalman Bullough says that neither of them was placed at danger until after he had seen the vehicles off the rails, he having been engaged at the telephone as the train was approaching his cabin. Goods guard Critchley saw the home signal off for the train, but unfortunately

he can give little assistance in clearing up the very important question of *when* that signal was altered; all he can say is that the signal was at danger before the train stopped, which is not inconsistent with the signalman's statement.

Critchley had arrived at the junction with a goods train, and at the time when the accident to the passenger train occurred his engine was on the up branch line, and some of his waggons were on a loop line just in front of the cabin, and on the down side of the down main line, he himself being between the waggons and the up main line. Bullough had only come on duty at 9.55, and the passenger train had been accepted by the man he relieved in the cabin; his first action was, apparently, to ascertain on the telephone from the cabin in rear what trains were following the passenger, as he wished to utilise the up main line for shunting operations. Critchley thinks the conversation had ended before the passenger train arrived, but Bullough says the train was just passing the cabin when he left the telephone, and that he then went to the cabin window, and afterwards to the steps at the other end of the cabin, to look for the tail-lamp of the train, but did not see it.

If he moved the points he must have done so just at this time, and he is telling a most deliberate untruth. The levers which work the points in question are at the same end of the cabin as the telephone, but he says he never touched them at all. In order further to show the improbability of these points being moved from the cabin, Bullough says a cross-over road between the two branch lines was set at the time, and the lever would lock the facing-point lever; there is no other evidence to confirm or deny this statement with regard to the cross-over road. The Company's officials state that Bullough has throughout told the same story, and there is nothing against his character, so that, strong as the case is against him in many respects, I am not prepared to say I am fully satisfied he is to blame, although the accident is extremely difficult to account for in any other way.

I should add that there appears to have been ample time available for all the shunting operations of the goods train, and there was therefore no necessity for the signalman to be in any hurry to alter the main line points to let the goods engine off the branch line.

The facing-point locking bar should of course be at once altered, so as to do its work properly in holding the points bolted whilst a train is passing through them.

I have, &c.,

The Assistant Secretary,
Railway Department, Board of Trade.

G. W. ADDISON,
Lieut.-Col., R.E.

APPENDIX.

DAMAGE TO ROLLING-STOCK.

Third No. 504.—Two headstocks, one solebar, portions of underframe, three axle-boxes, and brake rigging broken. Both axles and journals were bent, the trailing-axle being torn from beneath the coach.

Bogie van third No. 2301.—Seven axle-boxes, and one side projection broken. Brake gear and the leading bogie-frame damaged. Since the accident the bogie-wheels have been gauged, and springs examined and found to be correct. The tyres of the two coaches are in good condition.

MATERIALS USED TO REPAIR DAMAGE TO PERMANENT-WAY.

300 sleepers, 285 chairs, 28 fish-plates, 114 fish-bolts, 600 spikes, 600 tree-nails, 300 keys.

DETAILS OF DERAILED CARRIAGES.

No.	Built.	Weight on Wheels.		Diameter of Wheels.		Whee Base.
		Tons.	cwt.	Ft. ins.		Ft. ins.
540	1872	6	2	{ 3 2 } { 3 3 } { 3 5 $\frac{3}{4}$ }	15 0	
2,301	1894	17	2	{ 3 5 $\frac{3}{4}$ } { 3 5 $\frac{3}{4}$ } { 3 5 $\frac{3}{4}$ }		6 6 (bogies)

Printed copies of the above Report were sent to the Company on the 17th September.