

driver of the Caledonian engine; but the accident could not have happened if the points and signals had been properly arranged on the locking principle. The state of the signals and the arrangements for working the Larbert Junction are so bad that I am surprised at the companies allowing them to remain so for a single day.

I recommend that the Board of Trade should impress this on both companies, and that they be requested to make proper arrangements at once for giving the

men on duty proper signals, which should be worked in connexion with the points on the locking principle, and kept always at danger, except when trains are passing, and further, I think the responsibility of the working should be given to one man at a time, instead of to two, as now the case.

*The Secretary,
Railway Department,
Board of Trade.*

I have, &c.,
F. H. RICH,
Lt.-Col., R.E.

Printed copies of the above report were sent to the Caledonian and North British Railway Companies on the 11th April.

LANCASHIRE AND YORKSHIRE RAILWAY.

*Board of Trade
(Railway Department),*

SIR, 1, Whitehall, S.W., 5th April 1870.

I HAVE the honour to report, for the information of the Board of Trade, the result of my inquiry, ordered by your minute of the 7th ult., into the circumstances attending a collision which occurred at Accrington station, on the Lancashire and Yorkshire Railway, early on the morning of the 4th ult., between a passenger train, a bank engine and van, and a portion of a goods train.

Five passengers are returned as having been bruised and shaken.

Accrington station is situated at an important triangular junction, where the main line from Manchester to Skipton is joined by a line to Blackburn, Preston, &c. It is approached from Manchester by a falling gradient of 1 in 40, two miles in length, which commences at Baxenden, the station next Accrington, and terminates at the commencement of the passenger platforms. A ticket platform, at which all down trains are supposed to stop, is placed on the incline near its foot, and commencing from the north (or Accrington end) of this ticket platform, there occur at short intervals four sets of unlocked facing points leading from the down line respectively to the goods depôts, to the up line platform, and to the Blackburn line.

The shunting of goods trains arriving from the Manchester direction is carried on by stopping them short of the first pair of facing points, and thence allowing the waggons to descend by gravity to their intended destinations in the station yard.

In approaching from Manchester the station is protected by a home signal close to the ticket platform, and by a distant signal 560 yards from the home signal, and visible for 565 yards.

On the night of the 3rd ult., a goods train from Oldham, due at 11.20, arrived at the foot of the Accrington incline at 11.55, consisting of 20 loaded waggons, and a break van at each end of the train; it was generally 10 or 15 minutes late, but was unusually behind time on this occasion. The engine was at once detached, and the shunting proceeded with, the proper signals being put to danger. There was standing behind the rear van of the goods train a bank engine with a waggon and break van in front of it, which had followed the other train down the bank from Baxenden, at about 11.53 a.m. All the goods train, with the exception of one waggon and the rear break van, had been disposed of, when the shunters &c. engaged in the operation heard the break whistles of a passenger train coming down the bank from Baxenden. They endeavoured to clear the remaining waggon and van, and the guard with the bank engine, thinking the passenger train was coming too fast to be able to stop, told his driver that they must get out of the road if they could. The driver put on a little steam, and had pushed forward the vehicles in front of the engine a few yards, when the collision occurred just at the first pair of facing points. After the first blow the engines were separated, and then had a second collision about 130 yards further on,

when they came in contact with some of the previously shunted waggons. The bank engine was knocked off the road, and had its buffer plank damaged. The van and waggon with the bank engine, and the van and three or four waggons of the goods train, were all more or less damaged.

The driver, fireman, and guard with the bank engine had stepped off before the collision, and thus escaped injury.

The passenger train which caused this collision was a concert train, which ran only on Thursday and Saturday evenings from Salford to Burnley. On the 3rd ult. it consisted of engine and tender, a composite break carriage (without guard), a third-class, a second-class, a first-class, a break van (with guard), and a second-class carriage, five vehicles in all, the two last being provided with Newall's patent breaks. The driver of the engine had been employed as an extra driver for 3½ years, and the guard had only occasionally served in that capacity for the last 13 years, his ordinary duty being that of a policeman at Accrington. He had been a regular guard before this, but had been reduced in consequence of a collision for which he was to blame.

The engine had its driving and trailing wheels coupled; the tender was a 6-wheeled one, with break blocks, in good order. There was no self-acting sand apparatus on the engine, but the tender wheels could be sanded from the foot plate. The train was due out of Salford at 11.10 p.m., but did not start till about 11.19, in consequence of the absence of the guard. This man (from his own confession) had reached Salford from Accrington at 8.30 p.m., had then walked about the streets of Manchester till 11.10, when he returned to the station; but instead of going to his train, where he ought to have been at 10.55, he went into the guard's room and commenced reading a newspaper, without noticing the time till he found it was 11.15, when he hurried off to his train and entered his van, without, so far as I could hear, any communication having passed between him and any officials of the company on duty at Salford, or his driver. The train first stopped at Ramsbottom (14 miles from Salford), having gained five minutes in running the distance. The next stopping place was Helmshore, where the platform was overrun in consequence of the guard not having applied his break soon enough. At Haslingden there was also a slight overrun. The guard had not left his van at either of these stations, in consequence of an order to that effect (issued after an accident arising from a portion of a train having broken loose from a station) and also from his having no luggage to put out. The train was timed to stop at Baxenden, the station at the top of the Accrington incline, at 12 o'clock, and the driver was prepared to do so, but finding that the guard did not apply his breaks, concluded that there were no passengers to alight, and ran through the station with his tender break on, at a speed estimated by him at two miles an hour, but by the Baxenden night watchman at 15. From the driver's statement it then appears that at 300 yards from Baxenden the speed

had increased to about six miles an hour, from the tender breaks having been eased off. He then said to his fireman, "I'll give three or four whistles to see if the guard is attending to his break or not," and told his fireman to apply the tender break. He gave the whistles, but found the train not checked and the speed increasing, and so believes the guard's breaks were not applied.

He continued whistling for the guard's breaks, keeping his own applied, till about half a mile from Baxenden, when the speed had become 15 miles an hour. Soon after this he reversed his engine and put on contrary steam, but without apparent effect. He whistled for the Accrington distant signal both before seeing it, and when opposite to it (continuing also the break whistles), the speed having now increased to about 30 miles an hour, from which point it kept increasing until the collision occurred in the manner before described. The driver and fireman escaped without serious injury; the former feels confident that the guard's breaks were never applied, from his not having felt their effect. He also states that after the collision he spoke to the guard, who muttered something in reply, could not stand straight, and smelt strong of drink; this being the only *direct* evidence to the fact of the guard not having been sober, and this not impartial evidence.

In contradiction to the driver the guard states that he began applying his break when about one third of the distance down the Accrington incline, in consequence of the driver's whistling; that, as he continued whistling, he applied it harder, but that the wheels would not skid, and that the speed gradually increased until the collision occurred; that seeing that there was no chance of stopping, he got out on the van step, and was thrown off it by the collision without serious injury. He explains his not having told the driver about not stopping at Baxenden, by his having supposed that the ticket collector at Salford would have informed him. He himself had ascertained there were no Baxenden passengers as he passed along the train to his van at Salford.

The passenger engine and tender were thrown off the road, and also the composite carriage next the tender. The rest of the carriages all kept the rails. The whole of the rolling stock was more or less damaged, and the break gear so much injured that it was impossible to say whether the breaks had been applied or not.

In considering the causes which led to this accident it must, in my opinion, be attributed primarily to the guard of the train having been in an unfit condition to take charge of it. His conduct at Salford before starting, his not applying his break promptly at

Helmshore, his not informing the driver that they were not to stop at Baxenden, and his not helping to regulate the speed at the commencement of the Accrington incline, with the working of which he was well acquainted, all lead to the conclusion that he must have been drinking at Manchester and was not in a proper state to act as guard to a train. His appearance and what I could learn of his antecedents point also to the conclusion that he was addicted to drink; and it was, I think, an unwise proceeding of the superintendent at Accrington to have sent in a man of this character to act as guard to a special train over a portion of line requiring most careful working, particularly when he would have two hours or more to wait in Manchester with nothing to do, and consequently in a position of temptation to a man of his habits.

I cannot acquit the driver of the train of all blame. He evidently had an impression that there was something wrong with the guard, and should therefore have kept the control of the train down the Accrington incline entirely in his own hands, which he could have done had he properly regulated his speed in the first instance. This is another case which points out the extreme desirability of placing the control of continuous breaks in the hands of the driver as well as of the guard.

The night goods inspector at Accrington should not have permitted the goods train which arrived at 11.55 p.m. to commence shunting on the main line (an operation taking on an average 10 minutes) with a special passenger train due at 12.10 a.m., as this was transgressing the spirit of rule 217.

As far as possible to guard against the recurrence of such accidents as the above I would strongly recommend that the absolute block telegraph system of working should be introduced between Baxenden and Accrington, that every train or engine should come to a dead stand at Baxenden before commencing the descent, and that the main down line should be kept clear for some distance on the Skipton side of Accrington while trains are descending the bank, so that in case of the control of a train being lost, there may be a portion of level line to pull it up in.

It is also highly desirable that there should be an interlocking and concentration of points and signals in Accrington yard. The absence of such arrangements is almost sure sooner or later to lead to some serious accident.

I have, &c.,
The Secretary,
Railway Department,
Board of Trade.

C. S. HUTCHINSON,
Lieut.-Col., R.E.

Printed copies of the above report were sent to the company on the 5th May.

LANCASHIRE AND YORKSHIRE RAILWAY.

Board of Trade
(Railway Department),

SIR, 1, Whitehall, S.W., 14th April 1870.

I HAVE the honour to report, for the information of the Board of Trade, the result of my inquiry, ordered by your minute of the 5th ult., into the circumstances attending an accident which occurred on the 2nd ult. near Clayton Bridge station, on the Manchester and Ashton branch of the Lancashire and Yorkshire Railway, from a passenger train running off the rails, and its engine then coming into collision with a goods train approaching in the opposite direction.

Four passengers are returned as having been slightly bruised and shaken.

The line between Manchester and Ashton is double, and the up road to Manchester between Droyladen and Clayton Bridge is laid with double-headed rails,

weighing 80 lbs. to the yard, in lengths of 21 ft., fixed in chairs weighing 47 lbs. each. The sleepers are 10 in. by 5 in., rectangular in section, laid at central intervals of 3 ft., except at the joints, where they are only 2 ft. 8 in. Each chair is secured to the sleeper by two trenails and one iron spike. The rails are fished at the joints. The line is fairly ballasted. The present permanent way was laid down five or six years ago, and appears to be in good order.

Between Droylsden and Clayton Bridge the line consists of a series of reverse curves of 40 chains radius, the gradient being a descending one of 1 in 133 for the whole distance, which is nearly 1½ miles. In the immediate vicinity of the spot where the run off occurred, which is 68 chains from Droylsden, and close to an over-bridge, a right-handed curve about 12 chains long terminates, and a left-handed one com-