

The engine which drew the train (No. 57) was a new six-wheeled passenger engine with outside cylinders, having 7 ft. 1 in. driving wheels and 3 ft. 6 in. leading and trailing wheels. The cylinders are 16 inches in diameter, and they have a stroke of 24 inches. The distances between the bearings of the leading and driving wheels is 7 feet, and that between the driving and trailing wheels is 8 feet. The weights on the several wheels are as follow :

	Tons.	Cwts.
On the leading	-	9 11 $\frac{1}{2}$
„ driving	-	11 7 $\frac{1}{2}$
„ trailing	-	8 7
Total weight of the engine	29	5 $\frac{3}{4}$

The engine was delivered on the 11th June and had been run 1,682 $\frac{1}{2}$  miles up to the time of the accident, when it received very little damage. The wheels of the engine and also of the tender remained true to gauge. The company have no weighing machine for ascertaining the weight on each separate wheel, but there is no reason for thinking that the weight on the right and left wheels of the several pairs were unequally distributed.

There is, in my opinion, no ground for attributing the accident to the engine, and I believe it must be sought for in the condition of the permanent way. These Continental trains have only been recently established and the accident occurred on the eighth or ninth up-trip. From the time stated by the driver, and that generally occupied in running from Harwich

to Dover Court and in dropping the pilot man, I infer that the train was probably running at from 35 to 40 miles an hour—not a particularly fast rate on a good road—but that is more than the Harwich branch had any right to be considered, as many of the rails had been turned, some of the sleepers were not good, and the joints of the rails were not fished, and the tree-nails had commenced to break many years before. Under these circumstances, I think the remaining treenails holding the chairs down on the sleepers were not sufficiently strong to resist the strain of a sudden lurch of the engine. The Railway Company, according to my judgment, made a great mistake in allowing the treenails to be the principal means by which the chairs were secured to the sleepers, after they had once commenced to break, and it would seem highly desirable that the remainder of the treenails should be got rid of, and the joints of the rails fished, if they are actually good enough to warrant the expense, or the line to be relaid with new rails.

Any regular Continental traffic can scarcely be maintained on a single line of rails, without unduly increasing the risk and occasioning vexatious delays to passengers arriving at Harwich by steamboats at irregular hours; and if this traffic is to be continued, it is highly desirable that the Harwich branch should be doubled throughout.

I have, &c.

W. YOLLAND.

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

## GREAT NORTHERN RAILWAY.

*Board of Trade  
(Railway Department),  
Whitehall, 7th October 1864.*

SIR,

I AM directed by the Lords of the Committee of Privy Council for Trade to transmit to you, to be laid before the Directors of the Great Northern Railway Company [Lancashire and Yorkshire Railway Company], the enclosed copy of the report made by Capt. Tyler, R.E., the officer appointed by my Lords to inquire into the circumstances connected with the collision which occurred at Laister Dyke Station, on the 14th ultimo, between a Great Northern and a Lancashire and Yorkshire train.

I am, &c.

JAMES BOOTH.

*The Secretary of the  
Great Northern  
Railway Company.  
The Secretary of the  
Lancashire and Yorkshire  
Railway Company.*

SIR,

*Stafford, 29th September, 1864.*

IN compliance with the instructions contained in your minute of the 19th instant, I have the honour to report, for the information of the Lords of the Committee of Privy Council for Trade, the result of my inquiry into the circumstances which attended the accident that occurred on the 14th instant at the Laister Dyke station of the Leeds, Bradford, and Halifax Junction Railway.

This line is worked by the Great Northern Railway Company. The Laister Dyke station is about a mile to the east of Bradford, and is situated between two important junctions, namely, that between the Gildersome Branch and the line to Leeds on the east, and that between the lines to Bradford and Halifax respectively, on the west. The junction boxes are 270 yards apart, and are supplied, besides main signals and distant signals from Laister Dyke in each direction, with "bell and arm" communication between

them, which, however, the signalmen are instructed to use for through trains only, and not for stopping trains.

On the evening in question, the Great Northern express train 5 p.m. from King's Cross due at Laister Dyke at 10.25, reached that station at 11.31, more than an hour late, consisting, in the following order, of an engine and tender, a break-carriage for Bradford, a composite carriage for Halifax, and a second and a first-class carriage for Bradford. Great numbers of people had been taken to Doncaster on that—the St. Leger—day, and were returning in the evening to their respective stations in upwards of 74 trains. The Doncaster station-yard was thus so much crowded and blocked up that the express train in question was delayed in passing through it, and was sent on contrary to custom with a Halifax carriage between the Bradford carriages; and it carried passengers who had been left behind by other trains. It therefore reached Laister Dyke with two extra carriages attached to it, late, and improperly marshalled; and it could not be sent forward without shunting operations having first been performed of an unusual character at that station.

Commonly, the engine that arrived with the train at Laister Dyke proceeded with the Bradford carriage or carriages, as soon as they had been uncoupled from the Halifax carriage, and had a tail lamp affixed to them, at once towards Bradford; and the Halifax engine and van, coming from a siding behind the up-platform, moved to the front of the Halifax carriage, and proceeded with it towards Halifax. But on this occasion, the Bradford engine and break-carriage were necessarily sent forward out of the way (for about 250 yards only) on the Bradford branch, while the Halifax engine and van, after leaving their siding, were set back against the Halifax carriage and sent forward with it to Halifax. And the Bradford engine and break carriage were then set back to join the remaining two carriages which were waiting at the passenger platform to be taken to Bradford.

While the Bradford engine was thus setting back, a Lancashire and Yorkshire Company's engine with a train of empty carriages from Leeds, which had been allowed to pass through the junction, came into collision with the two Bradford carriages, as they stood at the platform, 144 yards within the junction signals east of the station; and those carriages were first driven forward against the engine and break carriage which were backing towards them, and afterwards forced back again with a shock more violent than the first against the engine of the Lancashire and Yorkshire train. One carriage was impaled on the buffers of the Lancashire and Yorkshire engine, was shifted on its framing, and had its end broken; the engine buffers were slightly damaged; and unfortunately 12 or 14 passengers were more or less injured.

The Lancashire and Yorkshire train, running special, consisted of an engine and tender, 16 empty carriages, and one break-van, and left Leeds for Low Moor at 10.55 p.m. The engine-driver was an old servant of the company, and knew the line well. He reached the junction east of Laister Dyke at 11.35, four minutes after the passenger train; and finding the signals against him, he pulled up short of the junction and clear of the Gildersome Branch. After he had waited there for seven minutes the signalman allowed him to proceed, and he ran forward, intending to pass through the station, at a speed of about 5 miles an hour. There were no lights on the Bradford carriages, and he did not see them until he was within 20 yards of them, when it was too late to avoid the collision.

The signalman had acted in that capacity for nearly 9 years, and had done duty for three or four months at the Gildersome Junction, east of Laister Dyke. He was of course well acquainted with the general working of that station and with the ordinary mode of starting the passenger train in question. After he had allowed it to pass into the station, he first heard the usual three whistles (for the Bradford Junction, west of the station), of the Bradford engine-driver, and saw a train go away, apparently on the Bradford line; and he next heard the usual one whistle of the Halifax engine-driver, and watched the train out on the Halifax line. He then looked through the station, and seeing no red light or danger signal of any kind, and believing that the two trains had gone forward in the usual manner, he lowered his signals and allowed the Lancashire and Yorkshire train to proceed as above described.

The night was bright and moonlight, but the station-buildings and the sides of the cutting in which the station is situated cast a deep shadow on the platforms and the lines of rails; and the two Bradford carriages which were struck were for this reason not visible to the signalman from his stage, nor to the engine-driver of the Lancashire and Yorkshire train until he was within a short distance of them. The hindmost of them was provided with lamps when it reached the station; but those lamps belonged to the Halifax train, and were shifted by the guard of that train to the Halifax carriage. This was an exceptional proceeding, because the Halifax carriage was almost invariably brought to Laister Dyke at the tail of the train, with its own lights, which did not require to be shifted, attached to it. And no person on the platform noticed, or at all events supplied, the want of lights at the tail of the Bradford carriages which was thus caused. The station-master, who had been on the west of the down platform, was about to collect tickets when the collision occurred. The porter who acted as guard to the Bradford train, had been collecting tickets, and stood on the west of the down platform, from whence he had called back the Bradford engine. The porter at Laister Dyke, who had uncoupled the carriages, had held the points for the Halifax engine and van to come out of the siding and to set back to the down line, had coupled the Halifax carriage

to them, and uncoupled it from the two last carriages,—stood also near the station-master and the Bradford guard, beckoning the Bradford engine back after the departure of the Halifax train. The Halifax guard, who had shifted the lamps from the tail of the train to his own carriage without telling any one that he had done so, went away with his train; and evidently no one foresaw the contingency which was liable to arise, and the accident which might thus be caused by the absence of the usual lamps at the tail of the train.

The Bradford guard had indeed only one lamp to attach to his train. It had been his custom, contrary to the Company's regulations, during the preceding four months, to work the local train (9.40 from Leeds), due at Bradford at 10.5, with side lamps, and without a tail lamp; and, trusting to the side lamps on the tender as being sufficient, to take the express carriage to Bradford afterwards with a tail-lamp only. He left his tail-lamp on the platform at Laister Dyke on this, as on other evenings, when he went to Bradford at 10 o'clock, in order that he might not have to bring it back with him on the engine on which he returned for the express carriage. And the tail-lamp was still on the platform where he had left it an hour and a half before, when the collision occurred. The station-master left it to the guard to put this lamp on the carriage, and the guard considers it to have been the station-master's duty to see that the train was protected while at the station.

There has been another irregularity in not using the bells provided for the purpose in starting the trains. As the bell was never rung for the starting of any train from this station, the signalman would not have been able to infer from the absence of it that the trains had not both gone away, as he believed, on the present occasion.

This collision would not have occurred if there had been even one lamp on the hindmost passenger carriage, because the signalman and the Lancashire and Yorkshire engine-driver would both have seen in that case that the main down line was obstructed. But I consider that there ought for other reasons to be more perfect means of communication than at present exists, either between the station-platform and the signalmen at either end of the station-yard—in connection with which there are numerous sidings—or between the two signalmen themselves. The "bell and arm" communication which has been supplied is only used, under special instructions—as I have stated—for through trains, and is not in practice used even for through trains not marked in the time bills. The empty carriage train, running on this occasion without previous notice, was not going to stop at the station; but it was not known by the signalman to be a through train, and no communication was therefore passed in regard to it. He would not, of course, have admitted it to the station if he had first communicated with the signalman west of the station, because he would have been warned by him in reply of the danger of doing so.

The best arrangement for the future would be, in my opinion, to provide telegraphic communication between the two signalmen, and between them and other signalmen east and west of them, respectively, towards Leeds and on the Gildersome branch on the one side, and towards Halifax and to Bradford on the other side; and it is further desirable that this opportunity be taken for improving the condition of the signal boxes, and for introducing into them those superior appliances which have of late years so largely conduced to the safe working of railway traffic.

I have, &c.

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

H. W. TYLER,  
Capt. R.E.