at Stowe, near Weedon, on the London and North-Western Railway.

One passenger is returned as having been slightly shaken.

The siding in question, which lies on the west of the line, is connected with the down main line at a signal cabin about 2 miles south of Weedon, whence it runs northward parallel to the main line for about ¼ of a mile, as far as which point it is laid with the usual London and North-Western permanent way: the siding may here be said to cease, and the Iron Ore Company's line commence, curving away to the westward with a curve of (at the time of the collision) 3⅜ chains radius, on a falling gradient of 1 in 200 for 22 yards, and then on a rising one of 1 in 104 for the next 108 yards. The heavy double-headed London and North-Western rail is continued round the outside of the curve for 25 yards from its commencement; from which point on the outside rail, and from the commencement of the curve on the inside one, a light flat bottomed rail, weighing 40 lbs to the yard, secured by dog spikes and cross sleepers, is used for the rest of the Iron Ore Company's line. The junctions of the double headed and flat bottomed rail were by no means good ones when I inspected them; but at the time of the collision, the head of the double headed rail on the outside of the curve was acknowledged by the foreman of the Iron Ore Company to have projected half an inch inside that of the flat bottomed rail.

On the afternoon of the 21st August, two empty waggons had been left standing on the Iron Ore Company's line, at a point about 110 yards higher up the gradient than the bad joint just described, with a scotch under the wheel of one of them; each waggon was provided with the ordinary waggon break. At about 6.30 p.m. the foreman of the works had started from the office, about ¼ of a mile from the waggons, with a small 4-wheeled engine, with 4 loaded waggons in front of it, intending to attach the 2 empty ones, and then push the whole down into the siding; his son, a youth of about 17, was with him. On nearing the empty waggons the son left the engine, and ran to them, ready to attach them, and just as the loaded ones came up to him, knocked away the scotch and tried to hook on the coupling chain; he however failed to do so, and the empty waggons began at once to descend the incline, aided most probably by a bump received from the loaded train. The boy could no doubt have stopped them with the break had he cared to do so, but, thinking they would find their own way into the siding, he jumped up on the engine, which then followed them down. On the empty waggons reaching the bad joint above alluded to, on the outside of the curve, (their speed being about 10 miles an hour,) the front one left the rails, dragging the other after it, and ran on towards the London and North-Western main down line (knocking down a partition fence) for a distance of about 15 yards, when it stopped with its near front left buffer just foul of the down line, the distance between the main down line and siding at this point being 9 feet. The boy at once went to see if the waggon was foul of the main line, followed by his father, who, on finding that it was so, at once ran forward into the 6-ft. space, motioning with his arms to the driver of an approaching down train, now some 300 or 400 yards off; a goods train approaching on the up line obliging him almost immediately to leave the 6-ft. space.

The driver of the passenger train, an experienced man of 22 years service as such, and who stated that the present was the first collision in which he had been concerned, was in charge of the 5 o'clock train from Euston to Liverpool and Manchester. It had left Euston 1 minute late, and Bletchley at right time, viz., 6h. 8m., having next to stop at Rugby. It consisted of 21 vehicles, including 4 break vans (3 of them with guards), a parcels van, and a truck. Just after passing the signal cabin, about ¼ of a mile south of the truck (the speed being about 45 miles an hour), the driver states that he caught sight simultaneously of a man with his arms extended, and of the waggon standing close to the down line; that he at once shut off steam, whistled, reversed, and just as he struck the waggon, got contrary steam applied; that his fireman got his break applied by the time he had reversed; that the left corner of the buffer plank struck the corner of the truck, but that little or no shock was felt on the engine. The guards, who appear to have been on the alert, applied their breaks promptly, and the train was brought to a stand in about 1000 yards from the point at which the driver had first observed the obstacle, the gradient being a descending one of 1 in 848. The carriages all had the small steps on the left side stripped off, and some of them lost their foot boards, the projections of the break vans being also broken in. The engine had the left corner of its buffer-plank broken, footplate-step bent, and a cylinder-tap knocked off; it was, however, able to take the train on to Rugby, and then a fresh set of carriages on to Crewe.

The waggon which was struck had the end of its buffer and its corner injured; the other was not damaged.

This collision was brought about by the existence of a bad joint on the outside of a sharp curve of the Iron Ore Company's line, round which the empty waggons were running at a speed stated to be much higher than usual. The junctions of different sections of rail are always troublesome to keep true, and it is imprudent to let them occur in sharp curves, and I should strongly recommend the two in question being removed, by the introduction of more double headed rails, to a point further removed from the main line, where, if another run-off did occur, there could be no possibility of the main line being thereby obstructed. As a further precaution, I should also advise the placing a check rail round the curve, the radius of which the Iron Ore Company have been slightly increasing since the collision; the cant has also been increased from 5 inches (which it was) to 7½ inches.

I have, &c.,

The Secretary,
(Railway Department),
Board of Trade.

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

LONDON AND NORTH-WESTERN RAILWAY.

Sir, *Weedon, 23rd September* 1871.

In compliance with the instructions contained in your minute of the 2nd inst., I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances connected with the collision which occurred on the 29th ultimo, at Lime Street station, Liverpool, between a shunting engine and a passenger train.

Three passengers are returned as having been slightly injured.

In consequence of the limited area of the Lime Street station (with refereince to the amount of traffic carried on there), and the proximity of the Edge Hill tunnel to the platforms, there is necessarily much shunting of empty trains on both the up and down main lines into which the various platform lines converge close to the tunnel's mouth. For the safe conduct of the traffic, there is a raised cabin with interlocked points and signals close to the mouth of the tunnel, from which cabin all the work of the station is regulated.

In this cabin there was on duty on the evening of the 29th ult. a signalman named M'Devitt, who had acted for five years as such, four of those years having been passed at his present post. He had come on duty at 3 p.m. for a spell of eight hours, and had solely to attend to points and signals, the duty of telegraphing and registering trains devolving upon an assistant.

At 7.30 p.m. M'Devitt states that he lowered his main line up signal for the departure of a passenger train to Manchester and Preston from the one of the up platform lines. This train, which consisted of engine, tender, and 13 vehicles, including a break-van, left about a minute late, a shunting engine meanwhile standing on one of the arrival or down platform lines, about 60 yards from the signal cabin, waiting to transfer some empty carriages from one platform line to another. To effect this operation there was no necessity for the engine to run at all upon the up line, but it was the shortest and usual mode of effecting the object in view. M'Devitt acknowledges, that as soon as about half the passenger train had passed the signal he threw it to danger, (thereby releasing the points of a crossing leading from the down to the up line,) that he then set the points of this crossing right for the shunting engine to run through, and lowered the shunting signal, expecting that the engine would go steady ahead, but that it went faster than usual, and that though he shouted to the driver it struck the passenger train near its tail.

The driver of the shunting engine states that his engine was standing on one of the down platform lines, a few yards from the points of the crossing leading to the up line, when the up passenger train was leaving the station, and about 50 yards from the fouling point of the crossing and up line; that he heard the foreman shunter shout to the signalman "straight up" (meaning that the shunting engine was not to cross; this shout the signalman denies having heard); that he then gave a double whistle, upon which the shunting signal was lowered, and he started, imagining he was to go along the down line, as the passenger train was in the act of passing along the up line; that, however, when within about an engine's length of the train, he found he was on the crossing, and had just time to shut off steam and reverse when the front of his engine struck the third vehicle from the tail of the passenger train, at a speed of about four miles an hour.

The couplings gave way between this carriage and the one in front of it, the former and the shunting engine becoming jammed together, and both leaving the rails, the tender and the two hind vehicles remaining on them. The engine had its buffer plank knocked off and its cylinder lagging dented; the three hind vehicles in the passenger train were slightly damaged.

The occurrence of this collision must be solely attributed to the act of the signalman, who was entirely master of the position. Had he allowed the tail of the passenger train to pass the departure signal (as he ought to have done) before restoring it to danger, instead of doing so, as I believe must have been the case, as soon as the engine reached it, the collision could not have occurred, from the impossibility of the points of the crossing being set right for the up line while this signal remained down.

The habit which signalmen acquire of restoring signals to danger before trains have entirely passed them is one that requires to be constantly watched and checked, as it to a great extent neutralizes the advantages of locking apparatus.

In connection with the signal arrangements at Lime Street, I should strongly recommend that the facing points of a cross-over road on the down line, which are in the tunnel some distance from its mouth, and at present interlocked by means of a bolt-lock only with the home signals at the tunnel mouth, should be interlocked with the distant signal, to effect which object an additional distant signal will be required, the importance and peculiarity of the position being such as quite to warrant this additional precaution.

I have, &c.,
C. S. HUTCHINSON,
Lieut.-Col. R.E.

The Secretary,
Railway Department,
Board of Trade.

LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade
(*Railway Department*),
Whitehall, 19*th October* 1871.

SIR,

IN compliance with the instructions contained in your minute of the 27th ultimo, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances which attended the accident that occurred on the 22nd ultimo at Holywell Station on the London and North-Western Railway.

There are several goods sidings at the north and several at the south side of the railway at Holywell station. These sidings extend both east and west of the station. About 120 yards at the east side of the station the railway and sidings are intersected by a public road, which crosses the rails on the level. There is a bridge over the railway and sidings about 300 yards to the east of the station. This bridge carries a railway which is now being made from the pier to Holywell town.

The Holywell Station goods store is situated at the south-east side of the railway, between Holywell station and the public level crossing over the railway and sidings.

There are three sidings at the south side of the railway and at the east end of Holywell station. One siding next to the main down line, which is called the coal siding. This coal siding extends from the station over the public level crossing to some distance east of the Holywell Railway over-bridge.

The siding next to the coal siding is called the shunting siding. The shunting siding extends from the east end of the station over the pulic level crossing to a junction with the coal siding at the west side of the Holywell Railway over-bridge. This shunting siding has a connexion with the coal siding between the goods store and the Holywell station, and it also has a branch siding into the goods store.

The connexions between the shunting siding and the coal siding, and between the shunting siding and the line leading into the goods store, are adjacent to the public level crossing. There is a lime siding also at the south side of the railway. It joins the shunting siding and comes up to the public level crossing, but does not cross the public road.

There is a wide space for carts between the lime siding and the shunting siding, but the space between the coal siding and the shunting siding varies from 8 to 12 feet. There is a raised cabin for a signalman at the north side of the railway, close to the public road crossing. The points and signals connected with the main line are arranged on the locking principle, and are worked by the signalman from the cabin.

On the day in question, a train, which consisted of an engine and tender, four empty waggons, and a break van with two breaksmen, arrived at Holywell from Mostyn station about 3.42 p.m. While the engine-driver was taking in coals and water, the head breaksman went into the goods yard to see what waggons were to be moved and taken away. After doing so he went and directed the engine driver of his train to take two waggons of lime from a siding at the north side of the railway and place them in a siding at the south side of the railway.

When this was done the breaksman signalled to the engine driver to push back, and the break van at the tail of the train was pushed into the coal siding.

There were eight waggons in the shunting siding at the east side of the public road level crossing, and five waggons in the same siding at the west side of the public road. The first of these five was a covered waggon, the next three were loaded with iron boilers, and the hindermost waggon of the five was loaded with wooden patterns for Messrs. Newton, Keates, and Co., who own copper works near Holywell.

It was necessary for the breaksman to shunt back