LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade (Railway Department),

Whitehall, 3rd October 1868.

Sir,

I am directed by the Board of Trade to transmit to you, for the early and careful consideration of the directors of the London and North-Western Railway Company, the enclosed copy of the report made by Colonel Rich, R.E., the officer appointed by the Board of Trade to inquire into the circumstances connected with the accident which occurred on the 20th August to the Irish mail train near Abergele on the Chester and Holyhead section of the London and North-Western Railway. I have to request that you will, as soon as possible, forward to the Board of Trade any observations which the Directors may have to offer on the subject.

I am, &c.,

The Secretary, Robert G. W. Herbert, London and North-Western Railway Company.

Board of Trade (Railway Department),

Whitehall, 14th September 1868.

Sir,

In compliance with the instructions contained in your minute of the 21st ultimo, 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 collision that occurred on the 20th August, 1868, between Abergele and Llandulas stations, on the Chester and Holyhead section of the London and North-Western Railway.

Thirty-one passengers in the Irish down day mail train, one of the guards, and the fireman of the mail train were killed in this appalling accident.

A train, commonly called the "Pick-up goods," left Crewe for Holyhead on the morning of the 20th ultimo.

Two waggons, containing 50 casks, in all about 7½ tons of paraffin oil (the igniting point of which was 137°) were attached to the train at the Flintshire Oil Works, at Saltney wharf, which is about three miles to the west of Chester.

The tracks containing the oil were placed at the tail of the goods train, directly in front of the guard's van, which was the last vehicle of the train.

This train did what work was required at the various stations on the road, and arrived safely at Abergele at 12.35 p.m.

Some of the waggons were shunted at Abergele, and the train left that station at its proper time, 12.15 p.m. On leaving Abergele for Llandulas, the train consisted of an engine and tender, 26 empty, 17 loaded waggons (the two last holding the oil), and a guard's van at the end of the train, with two breakmen in it.

It arrived at Llandulas about 12.34 p.m. The engine came to a stand at the east end of the down platform, opposite to the station signal. According to the evidence of the driver of the goods train and of the Llandulas station master, the last-named was standing close to the signal post when the engine of the goods train stopped.

The station master's son, acting under his father's orders, appears to have put the station signal, as well as the down distant signal, to danger; as soon as the goods train arrived.

About 43 yards east of the east end of the down platform at Llandulas station there are points on the down line, which lead to lime sidings at the south side of the main line.

The lime sidings are named Llysfaen sidings, and they belong to the London and North-Western Railway Company. They are worked under the directions of the Llandulas station master, and form a part of the station.

One lime siding is 950 feet long, measuring eastwards from the points on the main down line, and if it is empty it affords 768 feet of clear road for waggons to stand on. There is a line on the south side of this siding, which affords 300 feet more of clear road for waggons to stand on. These sidings are level and are guarded with a blind siding.

The main line at Llandulas station is on a gradient of 1 in 660, falling towards Abergele. This gradient extends to a point about 206 yards east of the east end of the station platform. The gradients towards Abergele for the next 66 yards are, 1 in 147, 1 in 119, and 1 in 106; for the next three-quarters of a mile the gradient is 1 in 100, and for the next mile, 1 in 412. All these gradients are falling towards Abergele.

On the day of the accident, there were some waggons standing on both of the Llysfaen sidings when the pick-up goods train arrived, consequently there was not room for the whole of the goods train on either siding; but the sidings conjointly would have held the train. As the Irish down mail was due to pass Llandulas station at 12.39 p.m. the goods train should have been pushed back into the siding immediately on its arrival at Llandulas station, and the train should have been divided between the two sidings after the tail end had been pushed back into one of the sidings. It was the station master's duty to direct the guard of the goods train to do this, if the guard did not do it of his own accord, in accordance with the rules of the London and North-Western Railway Company.

Both these men appear to have disregarded the Company's rules, which direct that "goods trains, when likely to be overtaken by a passenger train, must be shunted at stations where there are fixed signals at least ten minutes before such passenger train is due."

The Llandulas station master proceeded to the sidings and held the points; the junior breakman got down from his break, uncoupled the six last waggons and van of the goods train, and gave the engine driver the signal to move ahead with the rest of the train. The six waggons that were left on the main line with the guard's van were all loaded, and were then standing on inclines varying from 1 in 147 to 1 in 106. The senior breakman stated that he put his break hard on, and left the break van immediately after the junior breakman had got out. He then proceeded towards Llandulas station, to assist in the shunting. As soon as the engine driver had pulled the rest of the train, which had been detached from the waggons which were left on the main down line, clear to the front of the lime siding points, the junior breakman signalled to the engine driver to stop. The junior breakman then unhooked 8 or 10 empty waggons, which at this time were the last of the goods train, and signalled to the driver to push back. This being done, he again signalled to the driver to stop, before the waggons that were next
to those that were last detached had reached the line sidings. The 8 or 10 empties were by this movement fly-shunted into the line sidings, the station master holding the points.

The senior breakman next uncoupled the three wagons that remained, last of those that were still attached to the engine. Of these three was loaded with timber, and the wagons before and behind were attached as check wagons, to prevent the ends of the timber from injuring the wheels of the train next to them.

The engine driver again got a signal from one of the breakmen—I could not ascertain which—to push back and stop, and these three timber wagons were sent back or fly-shunted along the main line towards the buffers, that had been left on the main down line about 240 yards to the east of Llandulas station platform.

The engine driver again got a signal to pull ahead and stop; eight more wagons were detached, and the driver then got the signal to push back, and this fourth lot of wagons was pushed into one of the line sidings.

The engine driver noticed the timber wagon with the two checks strike the six wagons on the main line, and was about shifting the fourth lot by when I saw the whole lot move off down the incline towards Abergele, and noticed the senior breakman running after them.

He stated that when he saw the senior breakman the train was about 30 or 40 feet from the last three wagons that were sent down the main line; but that the whole of the wagons seemed to be gaining on the breakman, and, as the run-away wagons went out of sight round the curve where the down distant signal is fixed, he perceived that it was impossible for the breakman to overtake them. The senior breakman signalled to the engine driver, and the latter inferred from the signal that the breakman wished to see the last two goods wagons; but before the driver could get ready to do so, the breaksman was returning and was signalling to the goods engine driver to stop. The breakman at this time had heard the down Irish mail strike the runaway goods wagons.

The Irish mail left London two minutes late on the day in question. It arrived at Chester two minutes late. The engine and front van were detached at that station, so that the Chester portion of the train was coupled to the back of the train. Four carriages were put on at Chester.

The train left that station at 11.47 a.m., four minutes late. It consisted of an engine and tender, a goods first-class, a composite, and a second-class carriage. These four carriages formed the Chester portion of the train. Next came the post office van and tender, a luggage van, a first-class, three composite carriages, and a guard's van at the tail. This train is not timed to stop between Chester and Holyhead.

On the day in question it ran past Abergele station at a speed of about 40 miles per hour. It was five minutes late when it passed Abergele, viz, at 12.59 p.m. instead of 12.54 p.m. When it got about 1½ miles beyond that station, the engine driver (Arthur Thompson) noticed some wagons a short distance in front. He could not see more than about 200 yards further, owing to a cutting and the reverse curve in the line at this place.

He thought at first that the wagons in front were on the up line of rails, but immediately afterwards he perceived that they were running towards him on the down line on which he was travelling. He shut off steam. He stated that his fireman saw the danger as soon as he did, and applied his break. Thompson then prepared to jump off and called to his fireman, "For God's sake, Joe, jump; we can do no more!"

Thompson jumped just before his engine struck the wagons; he landed safely, but was struck down by some splinters that hit him in the head and leg. His fireman did not jump, and Thompson stated to me, that the only cry he heard was from his fireman, as he himself alighted, on the ground, and that he did not hear a single cry from any passenger in the train.

The engine, tender, guard's van, and three front carriages appear, from the evidence of the most trustworthy and reliable of the witnesses, that they were no doubt enveloped in dense smoke and flames instantly after the collision, and the fourth carriage and the front of the post office van appear to have become detached in a few moments afterwards.

The engine driver, who said that he never lost his senses, stated that immediately after the collision it would have been dangerous, if not impossible, to attempt to reach any of the carriages in front of the post office van, and that the smoke and fire proceeding from thence and from the oil prevented his trying to uncouple the post office van from the Chester portion of the train. The driver bore out the evidence of a platelayer's wife (Mrs. Dicken) in saying that while he was uncoupling the carriage next behind the post office tender, he overheard some words from a lady in the front part of the train, who was addressing Mrs. Dicken.

The words were similar as those that he overheard were different from the words quoted by Mrs. Dicken. Judging from the evidence of Mrs. Dicken herself, as well as from that of several gentlemen who were passengers by the train, who appeared much more sober and collected than Mrs. Dicken, or the engineer driver, there seems to be no doubt that the woman was mistaken in the position of the carriage in which the lady and the children to whom she spoke, were riding. There is every reason to believe that all the passengers in the Chester portion of the train, as well as the guard in the front van and the fireman, were rendered senseless in a few moments, either from the shock or from the effects of smoke and heat. The oil splashed on the roof and on all the carriages in front of the post office van, and the oil must have been instantly ignited by the fire and the heat of the engine, which ran on about 30 yards, before it fell over on its left side, on the south bank of the cutting.

The tender was thrown some distance in front of the engine, and was turned end on and fell on its right side, with its wheels foul of the up line of rails. The wheels of what was supposed to be the guard's van of the train, were detached from the engine and tender. The guard's van of the passenger train and the leading wheels of the first carriage of this train were the only coaches of the mail train that appear to have got off the rails; the other Chester carriages were completely burnt.

An entangled mass of iron work at the north side of the up line was all that remained of the three goods trucks that had been thrown off the rails by the collision and which were burnt. The other six goods trucks that ran down the incline were found on the rails and taken away.

The bodies of the 33 unfortunate victims can only be described as charred pieces of flesh and bone.

The driver of the passenger train estimated the speed of his train at 28 to 30 miles an hour at the time of the collision, and, judging by the time and the evidence, I think that the speed of the loaded wagons must have been from 12 to 16 miles per hour, when they met the engine of the mail train.

The guard in the van at the tail of the mail train was knocked against his break wheel and stunned by the collision; many of the passengers were no doubt frightened to a much extent, as the majority of the witnesses, the bones were broken, and the passengers that gave evidence at the coroner's inquest spoke of the collision as being slight.

There is no doubt that the speed of the train must have been considerably checked by the incline, and the tender break before the collision took place, and, as the mail train met the goods wagons on a curve, the leading vehicles probably received the great force of the concussion.
The passengers in the after part of the train were taken back to Abergele, about half an hour after the collision. The up line was cleared, and the up Irish mail train which had reached Llandulas, as well as the Irish down mail, started on their respective journeys, about six o'clock the same evening.

The immediate cause of this catastrophe was the neglect of the senior breaksman of the goods train, who left his engine and train, which formed the end of his train, standing on the down line of rails, on an incline varying from 1 in 147 to 1 in 100, without having taken sufficient precautions to secure the wagons which were left there. He stated that he put his break "hard on." There is no doubt that he put the break on, as the wagons would not have remained a minute where he left them if he had not done so; and there can be no doubt that he did remain where he left them until the timber waggon with its two checks was fly-shunted against them.

I believe, moreover, that the man left his break hard on, but he did not put on any of the breaks of the other six waggon that were left on the main line with the break van.

The shaft of the break, with the cog wheel, was found after the accident, and three of the cast iron cogs were broken short off. I am of opinion that these fractures were the fault of the timber trucks, and not by the collision with the engine of the down mail train.

My reason for this opinion is, that, as it is perfectly certain the senior breaksman left his van, so it is equally certain that the break of the timber wagons must have taken the break completely off, as the six wagons and guard's van, that were leading all the way down the incline, gained throughout on the timber wagons that were following; whereas, if the break had remained on ever so slightly the timber wagons must have caught the other wagons. As the break was not on at all, at the time of the collision, it is not so probable that the cogs of the break wheel would be affected by the blow. The cogs appeared to have been decidedly broken by a blow, and not by being run over in the accident.

There was no chain or other means of fixing the break wheel in the break van of the goods train, and there had been none for three years, probably never. I do not believe that the want of such a fastening caused or even assisted in causing the present accident; but I think the failure of means of fastening the breaks should be considered an absolute necessity in all break vans. As chains can be supplied for about 5d. each, it is hard to conceive a reason why the companies neglect those devices where necessary.

The secondary cause of the accident was the fly shunting of the timber waggon down the incline at such a speed as to damage the break and to start the six loaded waggon.

The engine driver of the goods train could not have been aware of what he was required to do when he pushed the timber waggon back. He was driving his engine backwards and forwards in accordance with the hand signals from each of the breaksmen. The senior breaksman unhooked the timber wagons, but it is not in evidence which of the breaksmen gave the signal to the driver to push back. There is no doubt that the senior breaksman, as he was on the spot, should either have let down the waggons breaks, and thus delivered the timber trucks quietly on to the others or he should have directed the junior breaksman to push back.

No shunting should have been done before the mail train had passed Llandulas station, and, before commencing to shunt, the senior breaksman should have secured that part of his train which he was obliged to place on the main line, by putting the breaks in the breaks which are placed on all the London and North-Western Railway Company's wagons; in addition to having put on the break of his own van.

He should also have remained with that part of his train.

The station master at Llandulas was very culpable in not having instructed the senior breaksman to put the goods train into the sidings as soon as it arrived at the Llandulas station.

So far the three men are seriously to blame, and their neglect has been the immediate cause of the accident. The men of the left train cannot be expected to do their duties well if the railway companies do not give them the most convenient and best appliances, and do not look at them strictly and enforce their use.

In the first place, the regulations which time two goods trains to start from Abergele towards Llandulas, between which stations there is an incline of 1 in 100 —the one train to start at 12.5 p.m., and the other at 12.15 p.m., when an express, such as the down Irish Mail is due to run past Abergele, on the same line of rails, at 12.34 p.m. (the up mail being due at Llandulas about the same time) and which further direct the 12.15 p.m. goods to shunt for the down mail train at Llandulas station, which is near the top of the incline, are much to be condemned.

2nd. Llandulas station and Llysfaen sidings were not constructed when this section of the Chester and Holyhead Railway was first opened. They have never been inspected by Government officer, or been approved of by the Board of Trade.

They are quite unfit, in extent and means of safety, for the work that appears to be usually done there. It appears to be a great point of importance that the senior breaksman should have been there, and that there should be some means of securing the front of the train during any sudden changes in the state of the goods train. If the block telegraph should be put strictly in force on the Abergele and Llandulas section, and on all other parts of the line, it is not so probable that the cogs of the break wheel would be affected by the blow. The cogs appeared to have been decidedly broken by a blow, and not by being run over in the accident.

There was no chain or other means of fixing the break wheel in the break van of the goods train, and there had been none for three years, probably never. I do not believe that the want of such a fastening caused or even assisted in causing the present accident; but I think the failure of means of fastening the breaks should be considered an absolute necessity in all break vans. As chains can be supplied for about 5d. each, it is hard to conceive a reason why the companies neglect those devices where necessary.

4th. I am of opinion that explosive and inflammable goods, such as gunpowder and paraffin oil, &c., should be sent by special trains, at special times, and under special guards, with special instructions. They are now sent by ordinary goods trains, subject to all the risks of shunting and the breakdowns of such trains. The guards and station masters confess that they do not think any more about these dangerous materials than of any other goods in the train.

The explosion of the gunpowder van on the Lancaster line, at the exit of the Llandulas section on the London and North-Western Railway in February 1867, together with the present accident, would seem to call for some special regulation relative to the conveyance of dangerous goods, and I should think that the profits on the traffic would improve if the expense of special arrangements was incurred.

5th. Locking the doors of railway carriages, appears to be a matter which is very justly giving great offence; and as the locking of both doors un-
doubtedly prejudices the safety of persons travelling, I submit that it should be prevented.

There is no doubt that the doors of all the carriages of the down Irish day mail train on the 20th ultimo were locked on the off side; but it seems equally certain that at the most only two were locked at the near side in the London portion of the train. Twelve of the doors in the Chester portion were unlocked. It is probable that they all were unlocked at the near side. I submit that no doors should be locked.

Lastly, I fear that it is only too true that the rules printed and issued by railway companies to their servants, and which are generally very good, are made principally with the object of being produced when accidents happen from the breach of them, and that the companies systematically allow many of them to be broken daily, without taking the slightest notice of the disobedience.

The breach of the regulation which led to this sad accident, (viz. shunting within 10 minutes of the arrival of a passenger train) may be observed constantly at stations. Another very excellent regulation, that when a train breaks down the guard shall go back with a danger signal, is one that is seldom observed, unless the breakdown is such that the train is likely to be detained for some time.

The rule that is now partially changed, but which still exists on many lines—that drivers shall pull up outside the distant signals when they are at danger—is, I may say, never observed.

The regulation and publicly exhibited notice relative to seeing railway servants is equally publicly disregarded.

Guards of the highest class may be seen daily carrying boards to supply passengers with, for the purpose of enabling them to lie down in the carriage, on the secure understanding that they will be rewarded for their trouble; and the practice of treating railway servants in the refreshment rooms, which is fast increasing, will bring with it its chapter of accidents.

Four or five porters may constantly be seen racing after one railway carriage, where they have recognised a passenger well known to themselves to be liberal.

The permitted breach of this regulation may at first sight appear trifling as regards the safety of the passengers, but it is not so. The guards are employed in looking after their interests, instead of seeing after the organization and fittings of the train of which they are about to take charge. The porters are equally engaged in watching their drivers for the purpose of attending to their duties and getting the train ready to start at its proper time. The consequence is that the train starts behind time, and is often delayed at intermediate stations from the same cause.

Accidents (if they can be so called) are the result. Although the Abergale catastrophe could not have been averted by the train being in proper time, instead of being five minutes late, it might have been much less fatal in its results. The mail train would have been quietly standing by the distant signal when the trucks ran down the incline, instead of rushing to meet them at 40 miles per hour. The trucks, also, would have been moving at far less speed, and the paraffin oaks might not have been broken by the collision.

I must disavow any intention of taking advantage of this sad calamity to be severe on the London and North-Western Railway Company. I believe that their line is one of the best in this country, and that its general management and arrangements are as good, on the whole, as those of any of the other lines.

But I desire to take advantage of the attention which this deplorable event will attract to bring before railway companies what I conceive to be the great defect in their systems, and which has led to most of the accidents I have inquired into, viz., a want of discipline and the enforcing of obedience to their own rules.

I have, &c.

F. H. Rich,

The Secretary (Railway Department),

Board of Trade.

LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade (Railway Department),
Whitehall, 8th November 1868.

Sir,

I am directed by the Board of Trade to transmit to you, to be laid before the directors of the London and North-Western Railway Company, the enclosed copy of the report made by Colonel Hutchinson, R.E., the officer appointed by the Board of Trade into the circumstances connected with the accident which occurred to a passenger train on the 14th September last at the Edgehill station of the London and North-Western Railway.

I am, &c.

C. Cecil Trevor.

The Secretary of the London and North-Western Railway Company.

Board of Trade (Railway Department),
Whitehall, 26th October 1868.

Sir,

I have the honour to report, for the information of the Board of Trade, the result of the inquiry I have made, in compliance with the terms of your minute of the 22nd ult., into the circumstances attending a collision between a passenger train and two tunnel-breaks, which occurred at Edgehill station on the London and North-Western Railway on the 14th ult. Two passengers are stated to have been slightly injured by this collision.

Edgehill is the station next to Liverpool on the Liverpool and Manchester line, and is situated at the top of an incline, 1½ miles long, which descends at 1 in 70, in a tunnel, to the Lime Street station, Liverpool. In consequence of deficient ventilation in the tunnel, it is customary to work trains through it without engines; those with the down trains to Lime Street being detached at Edgehill and run into a siding there, the trains being controlled in their descent by one or more powerful break waggons, (called tunnel-breaks) which take the place of the engine in front of the train; and the up trains being drawn up to Edgehill by a wire rope and stationary engine.

The train to which the accident occurred was a local train running between Rainhill and Liverpool; it consisted of an engine and tender (running tender first), two break carriages, one at each end of the train, and five other carriages. A guard was riding in the front break carriage, which and the two adjoining carriages were supplied with continuous break. There was no guard in the rear break carriage.

The previous day's journey from Liverpool to Rainhill had been performed with perfect regularity, and all had gone right on the return journey excepting that at Broad Green (the station next to Edgehill and about two miles from it), the driver stating that the guard had pulled them up rather short at some of the stations. On approaching Edgehill the driver states that he shut off steam half a mile from it, when his speed was about 30 miles an hour; that at about a quarter of a mile from the platform his fireman began applying the tender breaks; that when about 100 yards.