LONDON AND NORTH-WESTERN RAILWAY.

Board of Trade (Railway Department),
Richmond Terrace, Whitehall, London, S.W.,
13th January, 1895.

Sir, I have the honour to report, for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 24th December 1894, the result of my enquiry into the circumstances attending a collision which occurred on the 22nd December at Chelford on the London and North-Western Railway, between Stockport and Crewe.

In this case the 4.15 p.m. up express train from Manchester, when running through Chelford station at full speed, at about 4.44 p.m., came into collision with an empty goods wagon, which had just been knocked off the down line owing to a collision during the shunting operations of the down pick-up goods train on that line, and was standing foul of the up line.

The consequences of the second collision were most disastrous, both the engines and tenders very soon leaving the rails, and running off the rails for about 140 yards before the leading engine, which had run on to the up platform, at a ramp near the centre of this platform, fell over on to its side across the up line, bringing the train to a dead stand, the engines and vehicles comprising the train being found in the following positions, viz.:

Engine No. 418, "Zygia."—On its side on the up main line, with the chimney towards the 6-ft. way.

Tender No. 361.—On its wheels on the ramp of the up platform, detached from the engine.

Engine No. 52, "Express."—Upright on the up main line, with all wheels off the rails, about six inches into the 6-ft. way, and detached from the tender of the leading engine.

Tender No. 874.—In a similar position behind its engine.

1. Great Western six-wheeled brake-van, No. 816.—Upright, with all wheels off the rails, and with the front slightly stove in.

2. Great Western third-class four-wheeled carriage, No. 522.—Upright, with all wheels off the rails, and slightly damaged at both ends.

3. Great Western 48-ft. bogie composite carriage, No. 1239.—Upright, with all wheels off the rails, and with the front of body stove in.

4. Great Western third-class six-wheeled carriage, No. 1559.—Upright, with all wheels off the rails, and badly damaged about the body.

5. London and North-Western 42-ft., composite eight-wheeled carriage, No. 1406.


7. London and North-Western composite six-wheeled carriage, No. 189.


9. London and North-Western six-wheeled milk van, No. 3186.

10. London and North-Western 42-ft. composite eight-wheeled brake-carriage, No. 1283.

11. London and North-Western 42-ft. composite eight-wheeled carriage, No. 1397.—Upright, with the wheels knocked from under it.

12. London and North-Western third-class six-wheeled carriage, No. 328.—Upright, but off the rails and slightly damaged.

13. London and North-Western 42-ft. composite eight-wheeled carriage, No. 864.—Upright, with one pair of wheels off the rails.


15. London and North-Western third-class six-wheeled carriage, No. 1087.

16. London and North-Western six-wheeled brake-van, No. 169.
The train was well filled; 14 passengers, mostly in the carriages which were broken up near the centre of the train, were killed, and 79 passengers are returned as having been injured, some of them very seriously.

The driver and fireman of the leading engine, and the head guard of the train, who was riding in the rear van, were also very badly injured, and the driver, and fireman of the train engine, and an assistant guard in the front Great Western Railway brake-van, were slightly injured.

The station signal-cabin was considerably damaged, part of the front wall being knocked down, and half the front windows being destroyed, and the up line was torn up for a distance of about 130 yards.

A nominal return of the passengers who were killed; a return of the damages to the rolling stock in the express train, to some empty carriages which were standing on an up siding, and to some of the wagons in the down goods train; and a return of the damages to the signal-cabin, and permanent-way are given in the appendix.

Description.

At Chelford, a small roadside station between Crewe and Manchester, there are sidings on the down side at both ends of the station, the goods yard being at the North end, and there is also an up siding at the North end of the station. The lines through the station are straight, running from south-west to north-east, and are practically level, the gradient being 1 in 6876 rising towards Manchester.

The signal cabin is at the north end of the up platform, and the platforms are not exactly opposite each other; the down platform, on which the principal station buildings are situated, extending several yards farther north than the up platform. A little south of the station are the north ends of up and down goods loops outside the main lines, but through the station there are only two running lines.

The station is properly signalled, and there is a good view of both the up home-signal and the up distant-signal, these signals, situated 141 yards and 947 yards respectively, from the signal-cabin, being visible from an approaching engine for 725 yards and 1697 yards respectively. Absolute block working is in force.

A plan of the station is attached, showing the points of collisions, the position of the engines of the express after the collision, and the approximate position of the down goods train on the down line.

The following distances northwards from the leading end of the leading engine of the express, as it lay on the up line near the centre of the up platform, should be noted, viz:—

<table>
<thead>
<tr>
<th>Distance Description</th>
<th>Feet</th>
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</thead>
<tbody>
<tr>
<td>To the signal cabin</td>
<td>195</td>
</tr>
<tr>
<td>To the north end of down goods train according to the driver's statement</td>
<td>220</td>
</tr>
<tr>
<td>To the north end of down goods train according to the statements of guard and stationmaster</td>
<td>310</td>
</tr>
<tr>
<td>To the point where the engine finally left the rails</td>
<td>440</td>
</tr>
<tr>
<td>To the point where the empty wagon stood on the down line after being first knocked back</td>
<td>487</td>
</tr>
<tr>
<td>To the point of collision between the express and the empty wagon when thrown foul of the up line</td>
<td>574</td>
</tr>
<tr>
<td>To the point of collision between the six wagons being knocked back into the down siding, and the empty wagon coming forward</td>
<td>618</td>
</tr>
<tr>
<td>To the down siding points</td>
<td>687</td>
</tr>
<tr>
<td>To the down advance starting-signal</td>
<td>1,011</td>
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</tbody>
</table>

The following rules in the Company's book of rules and regulations have some bearing on this case.

"Rule 132. The station-master or person in charge must take care while shunting wagons or other vehicles at stations or other places situate on inclines, that, in addition to screwing the van-brakes tightly down, a sufficient number of wagon-brakes are pinned down, and sprags or hand-scotchies used when necessary, to prevent the possibility of the train or any of the vehicles running down the incline. At such stations and at such other places a supply of sprags and hand-scotchies must be kept for the purpose.

"Rule 257. Wagons must not be shunted into sidings, nor to other wagons on the main lines, without remaining attached to the engine, except the wagons are attended
by a brakesman, or other competent person, prepared to put down the waggons brakes, or to apply springs, as the case may be, so as to prevent their coming into violent contact with other waggons or vehicles, or from fouling other lines.”

The express train was fitted throughout with a continuous brake, the blocks in the engine and tender wheels being actuated by a steam-brake, and those on the wheels of the vehicles composing the train by an automatic vacuum-brake, both brakes being applied by the same handle on the foot-plate of the engine.

The total weight of the train was about 240 tons, and the weight on the braked wheels was about 174 tons.

The following are the dates of the building of the vehicles in the train:

<table>
<thead>
<tr>
<th>Great Western brake-van No. 816</th>
<th>Great Western third-class No. 522</th>
<th>Great Western composite No. 1339</th>
<th>Great Western third-class No. 1659</th>
</tr>
</thead>
<tbody>
<tr>
<td>1879</td>
<td>1867</td>
<td>1870</td>
<td>1884</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>London and North Western composite No. 1406</th>
<th>London and North Western third-class No. 666</th>
<th>London and North Western composite No. 189</th>
<th>London and North Western composite No. 650</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893</td>
<td>1876</td>
<td>1893</td>
<td>1871</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>London and North Western composite No. 1288</th>
<th>London and North Western composite No. 1397</th>
<th>London and North Western third-class No. 328</th>
<th>London and North Western composite No. 864</th>
</tr>
</thead>
<tbody>
<tr>
<td>1889</td>
<td>1892</td>
<td>1890</td>
<td>1884</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>London and North Western composite No. 1408</th>
<th>London and North Western brake-van No. 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893</td>
<td>1889</td>
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**Evidence; partly taken on December 29th, and partly at the Coroner's inquest on January 11th.**

**Frank Turner states:** I have been about four years in the service, a signalman over a year, and at Chelford for about a fortnight before the accident occurred. We work absolute block in both directions, and book all trains. There are 29 working levers in the frame, and the interlocking is correct, and was so at the time the accident happened. It would be impossible to lower the up home-signal (No. 86), when any of the points leading on to the up line are over. The points of the down sidings, at the north end of the station, are worked by Nos. 26 and 25 levers. On the 22nd December I came on duty at 1 p.m. for 10 hours. At 3.56 p.m. the pick-up down goods train arrived, and came to a stand on the down main line, at the down home-signal. It did some shunting for 9 or 10 minutes, and then I put it back, at 4.11 p.m., into the down loop to clear the line for the 3.45 p.m. down passenger train from Crewe. When that train had passed, I brought the down goods train out of the loop again, at 4.26 p.m., and blocked back the line to Chelford loop engine. It continued shunting up to the time of the collision. When it came to a stand, after coming off the down loop, the engine was about six waggons lengths on the north side of the cabin. The engine, with some waggons attached, was uncoupled, and went forward to shunt into the down sidings. I did not know what work it had to do, but worked the points as directed by hand-signal from the person in charge of the shunting. It was rather dark, and I am unable to say where the northernmost waggons on the down main line was situated. It must have been standing about opposite the cabin. There were several shunts made in and out of the down sidings, but I cannot say how many. I cannot say how many waggons were on the sidings, or brought out of the sidings, or how many were knocked back on to the main line in front of the train. I did not see any waggons knocked back as far as the train, and did not know how far any waggons were knocked back. I do not remember how often I moved the points. It was a very rough afternoon. There was a very strong wind, but I did not notice in which direction it was blowing. Shunting was still going on on the down line when I accepted from Alderley Edge cabin the up express, the 4.15 p.m. from Manchester. The block-signals recorded for this train are as follows:

- "Be ready" received 4.38 p.m. Accepted at once.
- "Train entering section" received 4.40 p.m. Offered to Chelford loop 4.40 p.m. Accepted at once.

I did not book the arrival, but trains generally take about three minutes to run from Alderley Edge. It is due to pass at 4.44 p.m. I did not know that anything was wrong, or that anything was foul of the up line until the collision occurred. I lowered my up home, starting, and distant signals for the express at 4.40 p.m., as soon as it had been accepted from the loop cabin, and the up line was then clear. I did not put the signals to danger before the collision, having received no signal from anyone to do so. They were off when the express passed the distant and home signals. I heard no calling out before the collision took place, and saw no red lights waved, but I thought I heard a whistle from the express engine. That was, I think, when the engine was within 40 yards of the cabin, but I cannot be sure of the distance. I looked out and saw a tremendous lot of sparks flying from the wheels, and heard rumbling, as if the train was off the road. Immediately afterwards the cabin was struck, part of the brickwork being knocked down and half the windows in the front cleared away. I thought that it was the engine which knocked down the brickwork, and a carriage which did the other damage, but am not sure. I ran to my hells to give the obstruction danger-signal in both directions, and tried to put my signal levers to danger but could not move them. I saw that the home and starting signals had flown to danger. I did not get any answer from the cabin in either direction when I gave the obstruction danger-signal. I then communicated by means of my speaking telegraph which was not damaged. I did not leave my cabin.
for some hours. It was getting dark when the collision took place. I should say between 4.43 p.m. and 4.44 p.m. My clock was right. I cannot say how long it was after I made the last movement of the down siding point for the engine and waggon to shunt into the siding that the collision took place. I did not see or hear any collision on the down line between the waggon and which were being shunted. The wind was very strong, and I had all my windows closed. I do not think that on that night I could have heard a waggon strike the standing train unless it had been a very hard knock. There was nothing whatever irregular in the shunting operations that I could not form any estimate of the speed the train was still running at when my cabin was struck. I do not know whether or not there was a tranship van on the down goods train. There were two passenger ports and a goods porter at Chelford. The goods porter was away at the time. The station master was taking entire charge of the shunting operations. I did not hear the express strike the waggon foul of the up line.

Harry Footner states: I am a chief permanent way engineer for the London and North Western Railway. I put in place the lines before the collision. The waggon was on the down line, and the position of the engines after they came to a stop. The lines were surveyed by my assistants, and the plants were checked by me on the afternoon of Sunday. There was no indication that the express had any action of the express. I have arrived at the opinion that there was a collision on the down line between the waggon and which was being propelled into the down siding and a waggon on the up line, of about the third sleeper on the Manchester side of the crossing of the left-hand down main line rail and the siding rail. I think the waggon met first buffer to buffer, and that the force of the impact, and the direction in which the hoist vehicle was running, caused the front of the empty waggon to be lifted off the rails, and the running wheels were derated. I think that the leading left-hand buffer of the empty waggon struck the front of the body of the rear waggon which was being propelled, and that as the waggon continued to move forward, the empty waggon was gradually pushed round and across, foul of the up line. I think that the empty waggon must have crossed the six-foot way, and that at least one wheel was across the four-foot way of the up line. There are marks of flanges, probably of the waggon wheels, crossing the right rail of the up line. There was a slight grace on the side of this rail leading up to the most northerly of these marks, and these were the first apparent marks on the permanent-way of the up line. I would fix the point where the express crossed the waggon at a few feet south of those marks. That would be inside the up home signal. The first important disturbance on the up line was 25 feet south of the first flange mark on the right rail of the up line. Here the sleeper was violently displaced, the inside jaw of both the chairs were broken, and a piece of the sleeper 15 inches by 3 inches was gouged out of the left end of the sleeper. North of this there were no marks on chairs or sleepers of wheels running off the rails.

The first mark of wheel flanges running along the permanent-way of the up line was 26 feet south of the displaced sleeper, and these marks barely appeared to me to be caused enough to be caused by engine wheels. Immediately south of this there were marks of a heavy blow in the angle of the V crossing of the cross-over road. There were marked chairs, bolts, and sleepers, as far as the south end of the cross-over road, and then the whole road was torn up. I think that after striking the empty waggon, the leading engine of the express pushed the wreckage in front of it as far as the cross-over road, but did not itself leave the rails until arriving at the trailing points of the cross-over road, or near that point. At a point about 18 feet south of the first displaced sleeper there was on the left side, outside the up main line, a wheel, horn-plate, spring, and part of the frames, 35 feet by 4 feet long, belonging to a goods waggon, probably being parts of the empty waggon or first truck. The marks on the trailing end of the rear waggon of the six being propelled into the down siding are such as bear out my theory as to the manner in which the empty waggon was pushed on to the up line after being struck. There is the mark on the front of the body, apparently made by one buffer of the lifted empty waggon, a second mark on the front of the inside of the body apparently made by the other buffer, as the waggon was pushed round, and marks at the trailing end of the side, probably made as it ran past the derailed waggon.

George Whale, states: I am assistant locomotive superintendent of the London and North Western Railway. I saw in diagrams the engines attached to the up express, and a return of damages to them by the collision. I arrived at the scene of the collision at Chelford about 7.15 p.m. on the 22nd December, bringing medical aid, the break-down gang having arrived shortly before. I found the leading engine of the express lying on its side on the up main line, south of the ramp in the middle of Chelford station up platform, with the chimney towards the six-foot way, the tender of this engine standing on its wheels on the track detached from the engine, and at an angle of about 45° with the main line, and the second engine and tender standing upright, with all the wheels off the rails, about six inches in the six-foot way, detached from the tender of the leading engine. The carriages were in the following order and position:

1. Great Western brake-van, upright, off the rails with all wheels, and with the front slightly derailed.
2. Great Western third-class four-wheeled carriage, upright, off the rails, very slightly damaged.
3. Great Western 48 ft. composite bogie carriage, off the rails, upright, the front part of body in with a number of bricks in the front comet.
4. Great Western third-class carriage, upright, off the rails, and badly damaged about the body.
5. London and North Western 42 ft. composite carriage.
7. London and North Western composite carriage.
8. London and North Western composite carriage.
10. London and North Western 42 ft. brake carriage.

All these six vehicles more or less broken up, mixed, and piled up on the debris of waggon. Some over the down line, one on its side across the up siding near the step-block, and the roof of another hanging over the down platform.

11. London and North Western 42 ft. composite carriage, upright, with wheels knocked off under, towards the north end of the down platform.
12. London and North Western third-class carriage, off the rails but upright, slightly damaged.
13. London and North Western 42 ft. composite carriage, upright, with one pair of wheels off the rails.
14. London and North Western 42 ft. composite carriage.
15. London and North Western third-class carriage.
16. London and North Western brake-van.

These last three on the rails.

I have heard what Mr. Footner has said, and I examined the macks with him. I quite coincide with his opinion. The truth was acted throughout with the automatic vacuum brake. The train came up to the goods warehouse, and tank house, was much damaged, and one waggon projected on to the platform opposite to the station buildings, and had knock down two of the columns supporting the roof. There were also some waggon off the rails opposite to what the engine of the express was lying.
The goods train had evidently been driven back along the down line, and the Manchester end of it was opposite to the tank house. There was an empty carriage train standing on the up siding, north of the station, and the side of this train nearest to the up line was damaged. About four of the carriages near the middle of the train had the footboards knocked off, and on sides grazed, &c. That was the place where the waggons wheel was found. I should say that a little snug of this waggons wheel a broken waggons axle and another waggons wheel were found. I believe the axle belonged to the two wheels, and that these were the trailing wheels of the waggons first derailed. The remainder of this waggons cannot be traced. I think that where the empty carriages were damaged, part of the up train must have been off the rails, or anyway about. I think the principal damage caused to the six middle carriages of the express train was caused by the sudden stoppage of the engine after it fell over, so that they were piled up, and dashed against the down goods train. When I arrived most of the injured people were out, and were being attended to in the station. As far as I know most of the killed and injured people were in the six carriages which were wrecked in the manner I have described. Everyone present was giving all possible assistance, and no attempt was made to clear the line until the injured had been attended to. The road was clear at 2.45 p.m. on Monday 28th. There were a number of medical men in attendance. I brought five myself, and I believe there were 16 there in all. Valuable assistance was given by our trained ambulance men. There was no interval of space between the 4th and 5th vehicles in the train after the collision. I did not distinctly trace the waggons of potatoes for Stalybridge, but I saw a lot of potatoes lying on the down line, and scattered about, beginning, say, 10 yards at the Manchester end of the tank house. I believe the waggons in question was mixed up with the waggons opposite the tank house. The tank house is the end portion of the building nearest to Manchester on the down side. I think that the front end of the goods train must have been standing some little distance on the Manchester side of the tank house, as the great damage to the stock (carriages 5 to 10) was exactly opposite to the signal-cabin, and waggons debris was mixed up with it. If the front of the goods train had been only a few feet north of the cabin I do not see how there could have been so much waggons debris opposite to the tank house. The waggons at the leading end of the train were very much damaged, broken up in fact.

John Hyde states: I have been 13 years in the service, and station master at Chelford for five years and seven months. On the 22nd December I was on duty when the collision occurred. I had come on duty at 7 a.m. I live about 50 yards from the station in a house belonging to the Company. I was myself taking charge of the shunting operations which were taking place upon the down line. The down goods train arrived at 3.55, and the engine was hoisted off from the train and came into the goods yard, and shunted out three waggons to attach to the train, leaving on the sidings one, which had to come out afterwards. The train was then shunted back into the down loop till the 3.45 down passenger train from Crewe had passed, when it came out again between 4.30, and 4.55 p.m., I believe. The engine came to a stand near the down siding-points. I think that that time there were about 35 waggons on the tank. The engine and about 15 waggons were then unhooked, and the engine was forward over the siding-points. The siding-points were pulled over by the signalman, on getting a signal from me, and the 15 waggons were propelled into the sidings attached to the engine. The waggons left behind in the last shunt, which was for Stalybridge, was hoisted, and the engine and the driver drew out on the down line with 19 waggons attached. I then gave the signalman a signal to set his points for the main line, which he did, and I then signalled to the brakeman of the goods train that the points had been set. The brakeman then unhooked the rear waggons, the Stalybridge waggons, which was a string-buffed waggons, loaded with potatoes, and called the driver back. He knocked the waggons back, and I saw myself go back clear of the fouling-point of the siding, but how far back it went I cannot be sure. I myself was then standing in the 6-ft. way near the fouling-point. I cannot be sure exactly how far this waggons was knocked back, or whether it went back all the way to the standing waggons of the goods train. The rear waggons of the 18 left attached the engine came to a stand north of the siding-points, and I then signalled for the points to be set for the siding, which was done. The brakeman then uncoupled another waggons, which was knocked back on to the siding, and then gave the signalman a signal to set the points again for the main line. Then I gave the brakeman a signal that the points were set, and he detached one empty string-buffed waggons, and called the driver back, knocking this waggons back towards the standing train. I followed this waggons and saw it go back clear of the fouling-point of the siding.

I do not think it went back as far as the Stalybridge waggons. As I saw it come to a stand, and did not see the Stalybridge waggons at that time. The empty waggons came to a stand quite 10 or 12 yards clear of the fouling point, opposite to which I was still standing. I am positive that it did not strike the Stalybridge waggons and rebound, or I must have heard it. The weather was very rough, but at that moment it was not blowing so very hard. The direction of the wind was south-west, rather west, and rather across the line. Immediately afterwards there was a sudden gust of wind, very violent. As soon as I saw the empty waggons, which was a high sided London and North-Western waggons, come to a stand, I gave the brakeman a signal, and the engine and waggons attached. I believe, drew ahead of the siding-points. I walked down to the points and gave the signalman a signal to pull over the points for the siding, so that the engine might knock more waggons back on to the siding. At each shunt I went to the points to see that they were set right, and then walked back to the fouling-point. That was my duty. I gave the signal to the brakeman that the points were set, and he called the driver back. The waggons nearest to me of that lot of waggons was about seven or eight yards from me. About six of the waggons were, I think, uncoupled so as to be knocked back. When the brakeman called the driver back I walked south along the 6-ft. way to see the six waggons which had been detached safe on the siding. As I was going back I observed the empty waggons, which had been previously knocked back coming towards me along the down line. When I first saw it I was a yard or two short of being foul of the crossing. I ran towards it, with the view of stopping it, but found I had not time to stop it, or rather to get to it, before it fouled the crossing. Then I immediately turned round and waved a red light violently towards the engine of the up express, which I had heard coming. When I first waved my light I could see the engine of the up express, I should think about 80 or 100 yards away. I still kept waving my lamp, running towards the express, but before I met the engine the waggons had already knocked back into the down siding, and struck the empty waggons. I did not hear any noise of the blow. I was then 12 or 14 yards north of the siding-points. I saw plainly what happened. The end of the empty waggons nearest to me was lashed up, and the waggons was pushed round and across the 6-ft. way. It was just foul of the up line, but not across it. I was still going towards the express. Then I crossed in front of the express. When the engine passed me I was standing at the end of the up siding, between the stop block, and the cattle arch. The train appeared to be running
at full speed, and I cannot say whether or not steam was shut off, or whether the brakes were then applied. I did not hear the express engine strike the empty waggons, but after the tail of the express had got some 30 or 40 yards past me I saw it suddenly stop. I could hear no crash but only the rushing of steam from the engine. I ran towards the train to see what had happened, knowing that there must have been an accident, and found the train in the same described by Mr. Whale, the carriages near the centre of the train being terribly broken up. I first ran to seek the signal-artist for assistance, and for doctors, and then returned to the train to give what assistance I could. It was a pretty full train. Most of the killed and injured people were in the carriages near the centre of the train which were wrecked. There were several servants of the Company on the ground giving help, and many of the passengers assisting. It was not till 4 or 5 on Sunday morning that the last of the dead bodies was extricated. I consider that the shunting operations with the down train were properly carried out. I was in charge of them. There was no unnecessary violence used in knocking the waggons back. The six waggons which struck the empty waggons were coming back at a walking pace or very little more. The empty waggons was knocked back at about the same speed. I do not know whether, if I had had time to reach the empty waggons as it was coming forward, I could have stopped it before it got foul of the crossing. I do not know which side the brake-handle was, and I had only my hands to signal to the signalman to throw up his signals. It was too late for the signals if thrown up to do any good. I know Rule No. 257. I do not understand that rule as meaning that waggons are never to be shunted back, unless attached to the engine, without a brake-man or other competent person prepared to put down the waggons brakes, but as meaning that this is not to be done where there is any danger of the waggons coming into violent contact with other waggons or vehicles. It is the practice continually to knock back waggons loose, and this practice is universal on the lines. When the empty waggons was being knocked back, I walked back to the fouling point from the siding points which I had seen put right for the main line. I saw it come to a stand and then knock back. The waggons were knocked back about 30 yards behind it and saw it come to a stand, and then I turned and gave the driver of the goods train a signal to draw ahead, and walked forward towards the points. I never dreamt that it would be driven forward by the wind. I never remember a waggons being moved by the wind at Chelford. I have sometimes found it necessary to put down the waggons brakes at Chelford when the shunting is violent. Nothing has ever happened before at Chelford to cause me any apprehension that accidents might happen during shunting operations. Both the Stalybridge and the empty waggons were knocked back at about walking pace. I was able to keep level with them. There must have been three or four minutes between the times of shunting the Stalybridge and the empty waggons. I usually take charge of the shunting at Chelford.

Joseph Whalley states—I have been over eight years in the service, and a brake-man for three years. On the 22nd December I came on duty at Edgeley at 3.30 p.m., and came by the 3.45 p.m. passenger train from Stockport to Chelford, in order to relieve the brake-man in charge of the down pick-up goods train from Crewe. I had left duty at 5.45 p.m. on the 22nd inst. after 11 hours duty. I arrived at Chelford at 4.25 p.m., just as the down goods train was backing into the down loop, and I relieved brake-man Ewengridge. He didn't tell me how many waggons there were on the train, and I had no time to ascertain exactly. I should say there were between 36 and 40 waggons when I took charge. I have heard what the station-master has said about the shunting operations after the goods train came out of the loop, and he is quite correct, except that I think the driver had to draw ahead to clear the siding points at every point. I think he is quite correct as to the number of waggons too. He watched each movement of the points, and signalled to the signalman when to alter them. I was working under his orders, and the operations were carried on in the ordinary and regular way. There was nothing unusual. I signalled to the driver for each signal. There was no violent shunting at all; the six waggons were knocked back quietly. The driver had only just commenced to move them when I saw the station-master running back towards the empty waggons previously knocked back on the down line, and showed me a red light before he
ma back. I then showed my driver a red light, and he was in the act of stopping. I then stepped back across the up line in front of the express which was close upon me. I showed a red light to the driver of the express just as he was passing me. I had not seen the station-master signalling to this driver. I think I was 10 or 12 yards on the Manchester side of the underbridge, which they call the cattle arch. The express was running at full speed, so that I did not even see whether there were one or two engines on it. I cannot say whether or not steam was shut off, or when the brakes were applied. I had hardly time to get across the line. I did not hear any noise from the collision but saw the train stop. I went towards it, and met passenger-guard Jessop, who was in charge of the engine. He seemed to be hurt, and he told me to go back to Alderley to protect the Engine, which I did. I came back in about an hour, and then went to assist at the wrecked train. I did not see the collision between the six waggons being propelled into the down siding and the empty waggons, but I saw that they had struck something by their buffering up just as the station-master showed me a red light. I do not think that the speed at which the Sudybridge waggons was knocked back was sufficient to send it all way back on to the standing train. It was blowing very hard towards Manchester, or perhaps across the line. It was dark, but I can see about 42 yards away. I do not think either waggons was hit back hard enough to reach the train, but hard enough to go clear. When the station-master showed me the red light the six waggons were detached, and had been hit back. There was no way of stopping them. If required, it would have been the station-master’s duty to apply the brakes on the waggons shuttled back on the main line. I have known waggons blown out of the sidings at Edgley, ordinary waggons, empty, and loaded. Although the wind was very strong at Chelford it did not occur to me that it was sufficient to move the waggons.

John Roughedge states: I have been 20 years in the service, and have been a brakesman for 12 years. On the 22nd December, I came on duty at 4:40 a.m. to work the 5:10 a.m. up goods train from Longsight to Crewe, and back, being due back at 2:22 p.m., and was relieved by brakesman Whalley at 3:55 p.m. I have been working all through the day, and wired for relief from Holmes Chapel at 2 p.m. I left duty at 5 p.m. on the 21st last, after 12 hours 20 minutes duty. On the 22nd, I was guard of the 10 a.m. down pick up train from Crewe. We left at 11.35 a.m. We arrived at Chelford at 3:50 p.m. The train was then made up of engine and tender, 22 waggons, of which 11 were loaded, and brake-van. We did some shunting, and then set back on the down loop to clear the line for a down passenger train. I then handed the train over to brakesman Whalley, with between 35 and 40 waggons on. I left Chelford at 4:35 p.m. to go home. I was working the same train the day before. It has lately been running late on account of bad weather. It was a very bleak day on the 22nd, with a rough high wind. On the 21st I wired for relief from Alderley, and was relieved at Edgley at 4:10 p.m., then I went home as a passenger.

Samuel Needham states: I have been about 32 years in the service, and a driver for about 25 years—On the 22nd December, I came on duty at 8:10 a.m. at Stockport, and worked the 9 a.m. passenger train to Manchester. Manchester, arriving at 9:24 a.m., then the 9:30 a.m. Manchester to Cheshunt, arriving about 10:24 a.m., then the 12:30 Cheshunt to London Road, arriving about 1:23 p.m., then the 3 p.m. London Road to Stockport, arriving at 3:27 p.m. I was then sent to Chelford as a passenger to relieve John Hallam, with engine No. 1142. I joined the pick up goods on the down loop. I came out and did some shunting. We made four sums, two on to the train, and two into the sidings. The last shunt but one I knocked something back along the main line, but did not know exactly what it was. I started back at a signal by my brakesman, and stopped when he signalled to me to do so. I cannot remember exactly what I did next, but I know that after coming out of the siding, I had only to draw forward once. The next chart I had to knock some waggons back into the sidings. I started back on getting a signal from my brakesman, and stopped on getting a red light from him. The station-master was waving a red light at the same time. I stopped my engine, thinking it was only an ordinary stop. At that time when I first received the signal, the engine was only about five yards on the Manchester side of my engine. The driver had not then shut off steam, and was running at full speed. I think my engine was then a little inside the down advance starting signal. At that time I did not know that there had been any collision, but the waggons knocked back on the down line, and I did not apprehend any danger. I heard no sound of collision. I was looking after the express, and I saw a cloud of steam, but could not believe there had been a collision. I saw that the express had stopped, and as I had lost sight of the station-master and my brakesman, who had been signalling to me, I thought they had been taken over, and that was why the express had stopped. I therefore got off my engine and went to see what had happened. I then rendered what assistance I could. All the shunts I made, were made in the ordinary way, and not violently at all. It was blowing a south west gale at the time. I left my brakesman on the engine, and told him not to leave it. As the leading engine passed me I saw the driver take hold of his whistle, and I heard the whistle. When I came to a stand after knocking the six waggons back, the rear waggons left attached to the engine was just clear of the sidings points. I had 15 waggons left on the engine. I counted them.

This driver’s evidence is corroborated by his fireman, William Hopwood, who states that the wind was so high that it nearly blew him off the engine, and that he had to catch hold of the handrail to prevent this happening. This was just as the express was passing.

Joseph Cooper states: I have been 24 years in the service and a driver for 10 or 11 years. I know the line well between Manchester and Crewe. On the 22nd instant I came on duty at 11:25 a.m. at Crewe with engine No. 320. It is a compound engine with 6 ft. 6 ins. driving and trailing, and 3 ft. 6 ins. leading wheels, and six-wheeled tender. It is fitted with the steam brake for the engine driving wheels and tender wheels, and the automatic vacuum brake apparatus for the train. The brakes were in good order. I took the 12:40 p.m. train to Manchester, arriving at 2:10 p.m., and I was then attached as train engine to the 4:15 p.m. up express, with engine No. 415 in front of me as pilot. We had a train equal to 173, as the guard told me, fitted throughout with the automatic vacuum brake. We stopped in regular course at Stockport, and the signals were right for us all the way. The up house-signal at Chelford can be seen nearly from the up distant signal and the distant can be seen a long way. All our signals at Chelford were off, and we were running at the usual speed. It was a rough day with a side wind, and the engines were working very hard. It was a fearful wind. When approaching Chelford, and when near the cattle arch, I think, I saw a red light shown as we were passing it from the left hand side of the line. I shut off steam and crommed on the brake at once, and heard the driver of the leading engine whistle at the same time, but within a second the leading engine struck some obstruction on the up line. The first shock was so violent that it knocked the coal out of the tender on to the foot-plate, and the leading engine was off the rail side at once, and mine followed. It is almost impossible for me to say where exactly the collision took place, but I knew it was on the Manchester side.
of the signal cabin. I cannot even be sure whether or not we had passed the home-signal, for I know is that we had no warning to speak of, and the speed was not a bit reduced before the collision took place, and that the first shock was not like a blow on the side of the wagon, but like an end-on collision. I realized it, even my eyes ever so much off the rails to strike the goods train on the down line, but when we came to a stand one of the wagons was across the six-foot way, nearly touching the foot-plate of my engine. Four or five coaches in the middle of my train were wrecked. I went on the platform and found them jammed, and then went to look for the driver and fireman of the leading engine. After some time I found the fireman lying in the six-foot way, opposite to the foot-plate of his engine and badly hurt. I did not see the driver for some time afterwards. I heard afterwards that when we had struck was an empty goods train and I felt convinced that it must have been right across the line. When the leading engine fell over we were still running at some speed, and came to a very sudden stop.

Henry Cheshire states: I have been 11 years in the service and a fireman for 41 years. On the 22nd December I was fireman to driver Joseph Capper. I have heard his evidence read over and it is correct. I was just a little hurt on the arm. I opened the sand-boxes, the lever of which was the first thing I got hold of, but not till after the crash of the collision.

Edward Fielding states: I have been 20 years in the service, all the time as brakeman, having been previously on the Lancashire and Yorkshire Railway. On the 22nd December I came on duty at 10 a.m. and worked my local service until 3 p.m. I then left Manchester as the assistant guard of the 4.15 p.m. express, to go as far as Crewe. I should then have worked the 5.25 p.m. train back to Manchester, due at 6.10 p.m. I left duty the day before at 7.30 p.m. about 12 hours with good intervals. I think there were 10 vehicles in the train, but my mate took none of the make-up of the train, and I did not see any riding in the centre brake-van, No. 10, in the train. I saw both the diamond-signal and the home-signal at Chelford, and both were off. We were running at the usual speed, very fast, and I had no warning of the collision, and did not know anything had happened until my mate was killed. They had kept the signal and the signal-cabin, but I cannot fix the spot nearer than that. My van was off towards the left. We ran for a very little distance in this manner, and then there was a sudden stoppage, and my van had the trailing end wrecked. I found myself on the floor underneath the luggage. I lay there and soon got out, and went to render assistance. There was only one person killed in the carriages behind my van, but several badly injured. I went and helped in the carriages behind my van, and did not go to the front of the train, where others were assisting. There was no check to the speed before my van was off the rails, that I felt. It was very rough. It was a very high wind, and we were meeting it. We were running with about 17 inches of vacuum. I think I heard the valve in my van fly up after we left the rails, but I did not feel any previous application of the brakes.

Samuel Scott states: I have been 22 years in the service, and a passenger-guard for four years. On the 22nd December I came on duty at Stockport at 4.25 p.m., to proceed to Shrewsbury to superintend the loading and sorting of the Christmas parcels for the Leeds and Manchester districts. As there was no guard in the Great Western brake-van in front of the 4.15 train I got into the van to do whatever work might be wanted. I kept a good look out all the way. There was a vacuum of 20 inches shown on the gauge. I was sitting on the six-foot side approaching Chelford, and saw that the signals were off, and I noticed the goods train was lying on the down line. I could see the engine moving, and there was some smoke attached to it, very soon after passing the diamond-signal. I saw a red light shown in the 6-foot first, between the up and down main lines. It was about 50 yards in front of us. I think we were then on the Manchester side of the cattle arch. There appeared to be a little country beyond the main line, and they were showing the red light, and he crossed to the up side of the line. I did not at first think the light was for us, but was intended for the goods train, until I saw the man cross the line, then I went to look out of the window on the up side and saw two red lights, and then I knew they were intended for us. Before I could get to the vacuum-brake it went on suddenly, and almost at the same time we struck some obstruction. Almost immediately the van left the rails. It ran for some distance off the rails, I believe, on the 6-foot side, and then came to a very sudden stop. I was very slightly injured, but was able to get out at once. My van was not upset. The end nearest to the wagons was stove in, and the projecting seat on the six-foot side was knocked off. I went and helped some passengers to alight, and they drew my attention to some one who was very badly injured, and when I got to him I found he was dead. I think he was in the third or fourth carriage from the engine. I hurried to the man who was extricating this man and the station-master trying to get into the signal cabin, of which the door was jammed. I then climbed through the window and sent out the messages for assistance. After that I went and helped at the wrecked train. There was a very high wind indeed.

Thomas Kerr states: I have been in the service for 32 years, and a driver for 10 years. On the 22nd December I was driver of the leading engine of the 4.15 p.m. up train from Manchester. There were 16 vehicles in the train equal to 174 vehicles. We started punctually and all went well until within sight of Chelford station. I saw two white lights near the station, shown by hand-lamps. I whistled at them to warn the men of my approach. They both stopped to one side, and then two red lights were given, which I took to be the goods train which was working. The next instant I heard the ring of a wagon buffer-casting, and the next moment I felt I was off the road. I cannot tell what I struck, and I cannot describe anything more which happened until I found myself telescoped in the station. The brakes on the goods train was self-applied, so I did not apply the brakes. I struck the obstruction, the blow breaking the vacuum pipes. I was running at close on 60 miles an hour, but not exceeding that speed. We passed Alderley at 4.30 p.m. and we took three minutes to run from Alderley to Chelford. I came on duty at 6.30 a.m. at Crewe, and I should have finished at 10.30 p.m. but I left duty at 4.15 p.m. The goods engine (No. 418) is a six-wheel engine, with four wheels coupled. It has a steam-brake and vacuum apparatus, all in good order. I used the brakes on the journey. There is a leading pipe on the train engine. I was driver of the train engine and had response for working the continuous brake. When I first saw any lights I was somewhere between the down advance starting-signal and the up home-signal. I cannot be sure whether I had passed over the cattle arch. I did not apply the brake before striking the obstruction. I saw no obstruction. It was clear, but dark, and there was a very strong wind. I rather think it was behind us, in our favour running towards Crewe. All the fixed signals were off. I am sure the first lights I saw were white. The men as far as I could see were in the 6-foot way working, and I whistled to them to get out of the way. The lights were then turned to red, as the men crossed to the
left side. The wind came cross-ways at Chelford. I think the how we struck the waggon was a side blow as the right side of my engine struck the buffer. We left the rails at once. There was nothing unusual in the speed. The wind was favourable for us in running to Crewe. It was very heavy running as far as Alderley, but easy after that. We were running to time. If there are any lights in the goods yard at Chelford we can see them soon after passing the up distant-signal, and coming round the bend.

Alfred Jessop states: I have been 18 years in the service, and a guard for several years. On the 22nd December I came on duty at Manchester at 3.30 p.m. I was behind guard of the 4.15 up express, and was riding in the rear van. We had a train equal to 19 vehicles. There was an automatic vacuum brake working through the train. We started one minute late, and left Stockport at 4.30 p.m. one minute late. After leaving Stockport, I saw the signals at Bingley, Cheadle, and Willoughby. I did not see those at Chelford. We were not checked at all, and were running at the usual speed, about 50 or 60 miles an hour. I was checking the ball with an approaching Chelford, and I was suddenly thrown three times from one end of the van to the other, and then there was a sudden stoppage. I had felt no sudden application of the brake. My gauge showed that up to that time we had been running with 18 or 20 inches of vacuum. The brake had acted properly at Stockport. When I got up I saw the gauge showed zero, and that the brake was fully on. I was able to get up, and get out of the van, which remained on the rails. I met the station-master. I asked him what had happened, but I cannot remember what his reply was. I saw a shunter, with name, I believe, Whalley, and I told him to go back to protect the train. I was not satisfied by his going, but I went back myself, and put down smoke detectors. When going back I met an engine coming from Alderley with Mr. Mowbray and I came with the engine to the wreck and gave what assistance I could. I worked till about a quarter to ten, and then had to go in. I have since been in hospital until Saturday last (the 5th January) and I am still in the doctor's hands. I had two ribs broken, and my back was badly injured. I am also suffering from severe shock. My train was well loaded, but was not overworked. The four leading vehicles were not so badly damaged as those near the middle of the train, some of which were badly wrecked. I remember seeing one waggon from the down goods train against our train engine, but cannot remember whether there were other goods wagons among the wreckage. The North-Western stock was modern stock in good order. The milk-wagon seemed to be old. The Great-Western third-class carriage appeared to be old stock. The end of the Great-Western 48ft. carriage was badly damaged. Most of the injured people were in the centre of the train where I was assisting.

Conclusion.

The disastrous collision of the 4.15 p.m. up express train with an empty goods waggon, standing across or partly across the up line, was beyond all question a consequence of a previous collision between wagons being shunted on the down line, which collision caused the empty goods waggon to be derailed, and thrown across the 6 ft. way, foul of the up line, in the path of the up express, when that train, running at about 60 miles an hour, was in sight, and probably not 250 yards distant.

The circumstances under which the first collision, the real cause of the catastrophe, occurred, are, according to the evidence, briefly as follows.

At 3.55 p.m. a down pick-up goods train arrived, and, after doing some shunting, was at 4.11 p.m. put back into the down loop, south of the station, in order to clear the line for the 3.45 p.m. down passenger train from Crewe. When this latter train had passed, the goods train was brought out again on to the down line, at about 4.25 p.m., to complete the work which it had to do at the station, and on this occasion it is stated that the engine came to a stand near to the down siding points, about 164 yards on the Manchester side of the signal-cabin at the north end of the up platform.

The front part of the train was then uncoupled, and really the only material discrepancy in the whole of the evidence is as to the number of wagons which were uncoupled and left attached to the engine. The station-master, who was himself taking entire charge of the shunting, and the shunters, was working on his orders, both believe that the number was 18, although they did not count the wagons, while, according to the driver of the train, who did count those remaining on his engine after the last shunt, the number was 23. Probably the latter is the correct number, but it fixes the position of the Manchester end of the rear portion of the train, left standing on the down line, as being nearly opposite to the signal-cabin, which is in accordance with the evidence of the signalman, and not 30 yards or so nearer to the down siding-points as it would have been if only 18 wagons had been detached, and as it seems clear from Mr. Whalley's evidence that the front of this train must have been at least 30 yards north of the cabin, it is probable that, when the engine first came to a stand, it was a little north of the siding-points. The wagons, having been uncoupled, were drawn forward ahead of the down-siding points, and the station-master took up his position at these points, signalling to the signalman in the cabin when to move them, and to the shunters to pass a signal to his driver, when and in what direction to move his train. This shunters were stationed nearer to the engine, and he performed all the requisite uncoupling and coupling during the shunting operations, which were as follows:—The points were set for the siding; the engine and wagons were backed in; a loaded waggon was attached; the whole were then pulled out; the points set for the main line; the rear waggon, a loaded waggon for Stalybridge, was unhooked, and hit back
along the main line towards the standing train; the points were again set for the sidings; the rear waggon of those remaining attached to the engine was uncoupled, and hit back into the sidings; the points were then set for the main line; the then rear waggon, an empty London and North-Western high-sided or deep waggon, was uncoupled and hit back along the main line after the Stalybridge waggon; the engine and remaining waggons, 21 in number, according to the driver, were drawn forward so as to clear the sidings, past which they had come in the last shunt; the points were again set for the siding, and the six rear waggons were uncoupled and hit back into the siding. At each of these shunts the station-master was, and he is corroborated by the brakesman, that he first saw the points were set in the right direction, and then walked back with the shunted waggons to see that they ran clear past the fouling-point, the distance between the siding-points and the fouling-point, opposite to the safety-points on the siding, being about 50 yards. He is unable to say exactly how far back the Stalybridge waggon ran, but he states most positively that the empty waggon went back 10 or 12 yards clear of the fouling-point, and there came to a dead stand, he feels convinced that the empty waggon did not strike the Stalybridge waggon and rebound, hearing no sound whatever to indicate that it had done so, and he does not think it at all probable that the latter waggon went as far as the standing part of the train, which opinion is shared by the brakesman and the driver.

After seeing the empty waggon come to a stand, the station-master turned his back upon it, gave a signal for the engine to draw ahead again, following the train to the points to see that they were properly set for the next shunt, signalled to the signalman to set them for the siding, and to the brakesman to call the train back, and then turned and went back towards the fouling-point to see that the six waggons, which were uncoupled and hit back, ran clear on to the siding. Very soon, on his way back, he perceived the empty waggon coming towards him, being, when he first saw it, a yard or two short of being foul of the crossing, and he ran towards it with the view of stopping it. Finding, however, that he would not be able to reach it in time to stop it before fouling the crossing on to the siding, through which the six waggons were being hit back, he turned round and waved his hand-lamp, showing a red light, running towards the up express, which he had heard coming on the up line, and which, according to the station-master’s evidence and also that of the driver of the goods train, was then about 100 yards nearer to Manchester than the siding-points on the down line. When the station-master had got about 12 or 14 yards north of the siding-points, the empty waggon, which by that time had reached and passed the V crossing on the left down line rail, about 131 feet from the point at which it had come to a stand, was struck on the leading left-hand corner by the trailing left-hand corner of the rear waggon of the six being hit back on to the siding. The station-master saw plainly that the leading end of the empty waggon was lifted off the rails, and that the waggon was pushed round and across the 6-ft. way until it was foul of the up line, and this account of what happened is proved to be substantially correct by the marks found on the rear waggon of the six, which marks include a mark on the end made by one buffer of the lifted waggon, a mark on one end of the left side made by the other buffer as the lifted waggon was pushed round, and marks on the other end of the left side, made as it ran past the derailed waggon, gradually forcing it across the 6-ft. way.

It is most unfortunate that the empty waggon met the others just where it did, for if the collision had been end on, or nearly so, it is not likely that the empty waggon would have been derailed, and in fact it is evident that two or three seconds either way would have made all the difference, both as to this collision and the subsequent disaster to the express, which probably would not have occurred at all if the empty waggon had not been struck exactly at the moment, and exactly in the manner that it was.

The point where the derailed waggon fouled the up line was apparently about 44 feet nearer the station than the point where it met the six waggons on the crossing, but it is impossible to fix this point with exactitude.

The station-master, still going towards the express, crossed just in front of it, and when it passed him he was near the end of an up siding, about 50 yards north of the point of the collision on the down line, so that the express must have been further off than the station-master thinks when he turned to run towards it, waving his red light, or else he had not gone very far back with the six waggons.

Both the drivers of the express, which had two engines, saw lights, the leading driver seeing white lights at first and then red, and the train engine-driver seeing only
a red light shown on the left side of the line, as he was passing the place where the station-master was standing, or where the brakeman, who was also showing a red light, and who was nearly run over when crossing in front of the express, was standing, a few yards nearer to Manchester.

The leading driver says that he took the lights for ordinary signals being given to govern the shunting operations of the down goods train, and that he neither shut off steam nor applied the continuous brake, and the train-engine driver says that the moment after he saw the red light on the left side of the line he shut off steam and applied the brakes, but he can only have done so a second or so before the collision occurred, as the leading driver says that the brake was self-applied by the front brake-pipe being broken against the obstruction on the line, and the guards felt no application before the collision occurred. The distance from the place where the station-master was standing to the point of collision on the up line was about 60 yards, and it would have taken the express only about two seconds to run that distance, so that in all probability the brake was hardly applied until just as the leading engine struck the empty wagon, and at any rate it seems certain that the speed was not reduced at all below 60 miles an hour when that took place.

Judging from the marks on the permanent-way, which in cases of this sort afford the most reliable indications of what has taken place, the empty wagon which was struck was partially across the right rail of the up line, two of its wheels, a broken axle, and a small part of the frame having been thrown across on to the left hand side of the line, but it is probable that the greater part of this wagon was pushed along in front of the leading engine partly on the 4-ft. way of the up line, and partly on the 6-ft. way, for some distance, and that the leading engine did not finally leave the rails until arriving near to the south end of a main line cross-over road, about 45 yards nearer to the station than the point of collision with the wagon, but from this point the line was broken up. The two engines, although off the rails, seem to have kept on the line, grazing the edge of the up platform, until, on reaching a ramp at a crossing near the middle of the platform, the leading engine ran off to the left up the ramp, and then toppled off the platform on to its side on the up main line, about 190 yards south of the point of collision, bringing the train engine, and all the vehicles behind it, to a dead stand. The brake had by that time taken good effect on the train, for the three leading vehicles—one of which, the third in the train, a Great Western 48-ft. bogie composite carriage, had apparently struck and knocked down part of the signal cabin, thereby being much damaged at the leading end—were damaged very much less than those nearer to the middle of the train.

The very serious damages to the 5th, 6th, 7th, 8th, 9th, and 10th vehicles were, I believe, due in some way to the wreckage of the empty goods wagon becoming jammed between the side of the express, and the side of the standing part of the goods train on the down line, which train was evidently struck by something and driven back for a few yards, some of the wagons being thrown off the rails.

It is quite clear that after the first collision, viz., that between the shunting wagons, had resulted in the fouling of the up line, no human effort could possibly have averted the disastrous collision which ensued. The consequences might perhaps have been to some extent mitigated if the driver of the leading engine of the express had sooner realised that the red lights exhibited were intended to indicate danger to his train, or were something more than signals to the driver of the shunting train, and had at once applied the continuous brake; but I do not think that the smallest blame can be attached to any of the Company's servants working the express, all of whom, as well as the station staff, seem to have behaved admirably after the collision.

Still, although the second collision was inevitable, and could not have been averted, I have formed the conclusion that so much cannot be said in regard to the first.

I place full credit on what the station-master has stated, and I believe that he was carrying out the duties he had undertaken, and for which he alone was responsible, carefully, and according to the best of his ability. I do not think that there was any breach of any of the rules and regulations of the Company, for the station-master was “attending” to the wagons being shunted back, and was “prepared to put down the waggon brakes” so as to prevent their coming into contact with other wagons,” in accordance with Rule No. 257, which, moreover, appears to have been intended to apply principally to shunting operations on inclines; and there is no reason to doubt the statement that the empty wagon was driven back for the distance of about 131 feet by the force of the wind, although I would have been inclined to believe that it had been started back by a rebound from the loaded Stalybridge wagon, if the evidence had been other than it is.
Nevertheless, while I entirely acquit the station-master of any culpable negligence, it is beyond question that the collision was a preventible one, and would not have taken place if the station-master had realised that the force of the wind was sufficient to move the waggon, for he would then have undoubtedly guarded against such an occurrence by putting on the waggon brake.

The movement of goods wagons by the wind is by no means unusual, and that the wind was of great strength at the time is proved by the evidence of all the servants of the Company, while a gentleman living at Alderley, only about three miles from Chelford, informed me that at about the time at which the accident took place, some of the chimneys of his house, which is one of modern construction, were blown down by a gust of exceptional violence.

The direction of the wind was at an angle of about 45° with the line, and was very probably diverted more in the direction of the line towards Manchester, by the high buildings on the down side of the station, and taking the pressure of the wind at no more than 10 lbs. to the square foot, which is not an extraordinarily high pressure, and which, according to information which I have obtained from the Meteorological Office, is much less than the pressures recorded on that day in other parts of the Kingdom, there was more than sufficient force acting upon the end and side of the waggon to move it the distance it travelled, within the probable time available, viz. 1 1/4 to 2 minutes. The depth of this waggon was 1' 9" above the frame.

The terrible loss of life in this collision cannot be attributed to any weakness of the rolling stock of which the train was made up, for the whole of the passenger carriages were strong, and of comparatively modern build, except the Great Western third-class carriage No. 522, which was an old four-wheeled carriage, built in 1867, and which, curiously enough, was very little damaged, although it was the second vehicle in the train, and was immediately in front of a 48-ft. bogie composite carriage, the heaviest vehicle in the train.

Accidents such as this, caused by a collision during shunting operations upon a parallel line, could of course be absolutely prevented, if all such shunting operations were suspended whenever a passenger train was passing; but, when it is considered that this would mean the suspension of all shunting not only upon the parallel running line, but upon all parallel sidings next alongside the line on which any train not stopping at this particular place (not necessarily an express train) was passing, it must be admitted that, although a regulation to this effect is theoretically desirable, it would be practically unworkable, except upon lines where the traffic is very light, that is upon the very lines where, probably, it is least required.

What, therefore, should be aimed at is that all shunting operations should be conducted with such care, and under such regulations, that collisions of this kind cannot take place, and the very fact that in this case a collision did take place, although there was no carelessness shown by the men in charge, and no breach of the Company's rules, shows that some addition to the rules is necessary. I would therefore strongly recommend the Associated Railway Companies to lay down in their books of rules and regulations that, during high winds, all wagons are to be kept attached to the engine when being set back on to their trains, or, that, where this would lead to unreasonable delay, all wagons shunted back loose shall have the brake applied as soon as they come to a stand, no matter what may be the gradient of the line at that particular place. To make the operation of putting on the brake easier and safer, all wagons should be fitted with a brake-handle on both sides, instead of, as in the majority of cases at present, upon one side only.

The Assistant Secretary,
Railway Department, Board of Trade.

(Signed) F. A. MARININ,
Major, R.E.

APPENDIX I.

NAMES OF THE PASSENGERS WHO WERE KILLED.

Mr. W. H. Fletcher.
Mr. G. H. Asbury.
Mr. E. D. Maxwell.
Mr. Harry Brownfield.
Mr. George Andrews.
Mr. Frank Jones.
Mr. Lee Whittaker.

Mr. Wm. Horton.
Mrs. C. Whittaker.
Miss A. Fryer.
Miss J. Harley.
Miss M. Ellis.
Elizabeth Woordrick (child).
Mr. A. Fletcher.
### APPENDIX II.

**PARTICULARS OF DAMAGE TO ENGINES 418 AND 520.**

*Engine 418, "Zygia-*

<table>
<thead>
<tr>
<th>Broken off</th>
<th>Broken</th>
<th>Damaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front vacuum-pipe.</td>
<td>Both leading buffers.</td>
<td>Smoke-box.</td>
</tr>
<tr>
<td>Chimney</td>
<td>Buffer-plank.</td>
<td>Done</td>
</tr>
<tr>
<td>Whistles and whistle stand.</td>
<td>One injector steam valve.</td>
<td>Injector steam-pipes.</td>
</tr>
<tr>
<td>Steam gauge.</td>
<td>Steam-cast and cylinder cocks.</td>
<td>Driving-axle bent.</td>
</tr>
<tr>
<td>Both life guards.</td>
<td>Steam-cast and cylinder cock rod.</td>
<td></td>
</tr>
<tr>
<td>Hopper.</td>
<td>Tie-bar between leading horn blocks.</td>
<td></td>
</tr>
<tr>
<td>Both steps.</td>
<td>Foot-plate framing.</td>
<td></td>
</tr>
<tr>
<td>One feed pipe and bag.</td>
<td>Driving and trailing splashes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steam brake gear.</td>
<td></td>
</tr>
</tbody>
</table>

**Tender 361.—Front end bulged on the right side; left leading horn block broken; both leading axle-boxes broken; left middle axle-box broken; both leading springs thrown out of place; both steps broken; tender draw-bar broken; break-wheel broken; front buffers broken; right trailing-buffer broken; break-rods broken.**

**Engine 690, "Express."—Both H.P. motion broken; break-gear broken; left H.P. cylinder casing broken; cylinder-taps broken; both life guards broken; front vacuum-pipe bent; leading sashkie bent; leading radial axle-box broken; right engine step broken off.**

**Tender 574.—Both steps broken; right leading axle-box broken; right leading horn-block bent; water catchers broken; Draw-bar broken; Back of tank dinged badly.**

### APPENDIX III.

**PARTICULARS OF DAMAGES TO PASSENGER STOCK.**

*Great Western brake-van, 816, six wheels.*—Two headstocks damaged; four end-panels, axle-guards, seven side-panels, one O.G., one axle-box, step-iron, and four step-boards broken.

*Great Western third-class, 522, four wheels.*—Two headstocks and both ends damaged, four door-glasses and five quarter-lights broken, four buffers bent.

*Great Western composite brake, 1353, eight wheels.*—One first-class compartment, end and side damaged; four step-boards, four buffers, and one axle-box damaged.

*Great Western third-class, 1559, six wheels.*—Body broken up beyond repair; second-class and compartment, end-panels and sides damaged.

*London and North-Western composite, 1406, eight wheels.*—End-panels, four side-panels, eight door and quarter-lights broken; two headstocks and four buffers damaged.

*London and North-Western third-class, 666, six wheels.*—All side and door panels, window, and step-board on one side damaged; roof, headstocks, and end-panels damaged.

*London and North-Western composite, 188, six wheels.*—End-panels, four side-panels, six door and quarter-boards, and headstock damaged.

*London and North-Western composite, 690, six wheels.*—End-panels, four side-panels, two buffers, one headstock, and two step-boards broken.

*London and North-Western milk-van, 2186, six wheels.*—Both end and side panels damaged; two headstocks and four step-boards broken.

*London and North-Western third brake, 1283, eight wheels.*—Two end compartments and roof broken in; one end, two side, and door panels damaged.

*London and North-Western composite, 1397, eight wheels.*—Step-boards damaged.

*London and North-Western third, 128, six wheels.*—One end damaged, one step-board broken.

*London and North-Western third, 1687, six wheels.*—Step-boards damaged.

**LONDON ROAD DISTANT-COUPLED TRAIN NO. 6—STANDING EMPTY IN UP SIDING.**

*First class, 234.*—Step-boards and panel damaged. Third-class, 1110.—Step-boards and panel damaged. Third-class, 231.—Step-boards and panel damaged. Third-class, 1103.—Step-boards and door damaged.

### APPENDIX IV.

**PARTICULARS OF DAMAGES TO WAGONS.**

*London and North-Western, 34,650.*—Headstock, buffers and end mountings broken.

*London and North-Western, 41,801.*—Diagonal buffer and brake work damaged.

*London and North-Western, 41,938.*—Axle-guard, axle-box, and spring damaged.

*London and North-Western, 33,363.*—Headstock end damaged, axle-boxes &c. broken.

*London and North-Western, 7,572.*—Broken to pieces.

*London and North-Western, 2,305.*—Broken axle and headstock, wheels from under.