APPENDIX.

Lancashire and Yorkshire bogie third van, No. 1165.—One headstock broken; one heating pipe broken; one top footboard broken; one double pull rod bent; two single pull rods bent; one bogie cross bar bent; one bogie sole bent; one drawhead bent; three buffers bent.

Lancashire and Yorkshire composite, No. 200.—One headstock tread bent; two buffers bent.

Damage to Engine.

Radial passenger tank engine, four-coupled wheels, No. 1265.—Coal bunker back plate damaged; left-hand bunker buffer broken; cylinder mud tops broken; front vacuum train pipe broken.

Printed copies of the above Report were sent to the Company on the 25th May.

LONDON AND NORTH-WESTERN RAILWAY.

Railway Department, Board of Trade,
8, Richmond Terrace, Whitehall, London, S.W.

May 10th, 1907.

SIR,

I have the honour to report, for the information of the Board of Trade, compliance with the instructions contained in the Order of the 27th March, the result of my inquiry into the collision that occurred at about 11 a.m., on the 22nd idem., at Lime Street Station, Liverpool, on the London and North-Western Railway.

In this case, as the 7.40 a.m. special train from Birmingham to Liverpool was entering No. 9 platform line at Lime Street Station, it came into collision with a train of empty coaches standing at the buffer stops on that line. The guard of the Birmingham train and 25 passengers sustained slight injuries, such as shock and bruises.

The stationary train consisted of a tank engine and six vehicles, of which five were eight-wheeled bogie carriages and one a six-wheeled parcel van. The total length of this train was 299 feet, or in round numbers, 100 yards.

The Birmingham train consisted of a four-wheeled coupled bogie passenger engine, a six-wheeled tender, and nine vehicles, of which two were eight-wheeled carriages with radial axles, and the remainder six-wheeled carriages. The total length of this train was 131 yards.

The stationary engine had its right leading buffer broken, both back buffers and back of the bunker damaged. The Birmingham engine had the front buffer plate and framings badly bent, and both front buffers broken. All the coaches of the stationary train were more or less damaged, and the two front coaches of the Birmingham train had their buffers bent. Some carriages standing in an adjacent platform line had a few windows broken through the scattering of the broken parts of the trains in collision. For full particulars of damage to rolling stock, see Appendix.

No wheels left the rails, and no damage was done to the permanent way.

Description.

There are seven arrival platforms in Lime Street Station—namely, Nos. 5, 6, 7, 8, 9, 10 and 11—No. 11 being at the extreme south side of the station. Several of these lines are signalled for both arrival and departure.

No. 9 platform is 218 yards long, of which about 118 yards was occupied by the Birmingham train, which, as already stated, was 131 yards long.

The signal-box is situated a short distance outside—i.e., to the east of—the station and is about 100 yards from the end of No. 9 platform. It is not in immediate connection with the movement of trains into the station. The line of signal-box controlling the movement of trains into the station is placed upon a gantry 178 yards east of the engine pit.

They are divided into two groups—one for the down slow line and the other for the down fast—each group containing a separate signal for each platform line, so that a driver, whether on the down fast or down slow line, knows by the lowering of one of the signals which platform line he is to enter. Although situated in a deep cutting, where the atmosphere is frequently hazy and dull, they are well-defined signals, and easily read.

As no question arose during the inquiry further described.

As it frequently happens here that trains stop short of the platform—one behind the other—special reg.

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As no question arose during the inquiry in regard to the signals, they need not be further described.

As it frequently happens here that two trains have to be signalled into the same platform—one behind the other—special regulations have been introduced for the purpose of informing drivers whether they may expect to find the platform clear as far as the buffer stops, or whether another train is already there. These regulations provide that in the event of a train being already at the platform, the home signal must not be lowered for the second train until the latter has come to a stand, or nearly so, and that a green flag shall then be exhibited from the window of the signal-box to the engine driver of the second train, by which he is to understand that there is already a train at the platform. But the green flag is not exhibited if an engine only, or not more than three carriages without an engine, are standing close up to the buffer stops.

The wording of the regulations is as follows:—

**Extract from Page 14 of Block Telegraph Working.**

39. **Terminal Stations.**—At all Terminal Stations at which instructions to the contrary are not given, if the Platform Line into which it is intended to turn the Train is not clear up to the buffer stops, the Signals must be kept at “Danger” until the Driver has brought the train thoroughly under control.

**Extract from Appendix to Working Time Book.**

**Liverpool—Lime Street Station.**

When Trains are already standing on the arrival lines at Lime Street Station, the Signalman at the Lime Street Signal Box will exhibit a green hand signal to the Engine Driver of a second incoming Train, but this will not be done if an Engine only, or not more than three carriages without an Engine, are in the bay and are standing close up to the buffer stops of the arrival line.

Drivers are instructed to run carefully into this Station at all times.

There is a falling gradient of 1 in 78 from the signals into the station.

**Evidence.**

James Ernest Spiers, guard, states: I have been a passenger train guard two years. On March 22nd I booked on duty at 7 a.m. at Birmingham to work the 7.40 a.m. excursion train from Birmingham to Lime Street, Liverpool. The train was composed of 9, equal to 10, vehicles. We left Birmingham to time and all went well till we were entering Lime Street Station. We had been stopped at the gantry signals in the tunnel for two minutes. On passing the signal-box I noticed a green flag in the window, and this denoted there was a train in front, and that my train was to be drawn down into the platform cautiously. I held the hand brake at a usual on passing the box. I afterwards went to apply the vacuum brake, but found the vacuum exhausted. I thought then that the train was going a bit too fast, because the green flag was exhibited at the signal-box. When the impact occurred I was knocked down in the van, and sustained a slight shock. I think we were going at three or four miles an hour at the time of the collision. The vacuum brake was in proper order. It was tested on leaving Birmingham, and again at Wolverhampton. The brake worked correctly at Edge Hill, when we stopped there for the collection of tickets.

Thomas Morris, driver, states: I joined the Company's service on the 31st August, 1886. I have been an extra engine-man for seven years. On March 22nd I booked on duty at 6.30 a.m. at Edge Hill Shed, for special work. I relieved the driver of the 7.40 a.m. excursion train, Birmingham to Liverpool (Lime Street), at Edge Hill at 10.45 a.m. and took the train to Lime Street. We had a load of 9, equal to 10 vehicles, worked by engine No. 2382 (“Precursor” class). I was stopped at the gantry signals at Lime Street for two minutes. On passing the box I did not see a green flag exhibited at the window. On approaching the end of the platform I saw a Manchester engine at the top end of No. 10 platform, and the driver was pointing in front. I then saw there was a train in front of me, standing down No. 9 platform line,—the line which I was entering. At this time I would be about 20 yards off the vehicles in front. I immediately applied the vacuum brake and reversed the engine, but was unable to stop in time to avoid the collision. I have frequently worked trains into Lime Street Station, and am thoroughly conversant with the working. I looked for the green flag when approaching the signal-box, but I did not see it. I did not ask the fireman if he could see the flag. I have occasionally driven an engine of the “Precursor” class, and I have worked as fireman on one for six or seven months. The vacuum brake was in order. I did not shut it off again. I thought I had a clear road right up to the end of the platform. The coaches standing in No. 8 platform interrupted my view of the train in No. 9 platform.

William Ward, fireman, states: I have been in the railway service nearly 10 years. I am an
extra fireman, and have been so 18 months. On the day of the collision we relieved some Bir-

mingham men at Edge Hill at 10.49 a.m. I booked on duty at Edge Hill at 8 a.m. for special
duty. We came to a stand with the train at the

station, and stood there from about 1½ to 2 minutes. On the

side of the signal being lowered we proceeded in

direction of No. 9 platform. On passing the

signal I did not see a green flag exhibited

from the cabin window. I looked for the green

flag on passing the signal-box, but could not see it. I have not often worked as fireman in and

out of Lime Street Station. I have worked with

a passenger train into Lime Street about a dozen

times. I have never worked with driver Morris

before. I know the rule as to the use of the

green flag when entering Lime Street. I had the

hand brake on, I applied it on entering the tun-
el. I did not see the empty train until we had

entered No. 9 platform. The driver stepped

down from the block on which he was standing

and bent down to look up at the signal-box. This

was just as he reached the box. I think we were

going at four or five miles an hour when we

struck the empty train.

Hugh Evans, signalman, states: I have been in

the Company’s service 22 years, six years as sig-

nalm an at Lime Street signal cabin. On March

22nd I came on duty at 6 a.m. to work till 2 p.m.

At 10.52 a.m. I accepted a Birmingham excursion

train from Edge Hill on the down fast line, and

brought it to a stand at the signals. I was

instructed by Inspector Boardman to run the

train into No. 9 platform line. There was a train

already at the bottom of this platform, and on

asking Inspector Boardman if he would hold it

there, he replied “Yes.” I then placed a green

flag in the socket outside the box window, then

set the road for No. 9 platform line, and pulled

off the signal for the train to proceed from the

signals, where it had been standing two

minutes. I kept the flag at the window until the

guard’s van was passing the box. Then I

passed the box at the ordinary speed, namely,

about four or five miles an hour. I did not see

the driver as he passed the box. Everything was

in normal course of working.

John Boardman, Inspector, states: I have been

in the Company’s service 17 years, 10 years in my

present position at Lime Street Station. On the
day of the collision I booked on duty at 6 a.m. to

work till 3 p.m. I was at the tunnel mouth when
the accident happened. I instructed the signal-

man (Evans) to place the Birmingham excursion

in No. 9 platform, knowing at the time there was

already a train in front at the bottom end. The

Birmingham train was stopped at the signals,

and when it was allowed to draw down, the

driver was running quietly into the platform,
at a speed of about four or five miles an hour.
The signalman had a green flag exhibited at the

box window. The next thing I heard was the

noise caused by the impact, There was a train of

coaches in No. 8 platform line, and this would

obstruct the driver’s sight of the bottom end of

No. 9 platform, where the coaches of the 9.47 a.m.

train ex St. Helen’s Junction stood.

Conclusion.

This collision was due to the failure of driver Thomas Morris of the Birmingham

station. As explained in the earlier part of this report, it is the rule that when a train

has to enter a platform at this place, part of which is already occupied by another train,

the home signal for the second train shall not be lowered until the latter has come nearly

to a stand, and that a green flag shall be exhibited from the window of the signal-box.

In this case the train was brought to a stand at the home signal because the signalman

was in doubt as to the platform into which it was to be turned. It remained at the

signal for two or three minutes, until the signalman received instructions from Inspector

Boardman that the train was to run into No. 9 platform, where a train which had

previously arrived from St. Helen’s Junction already stood. The signalman then placed

the green flag in the socket outside the signal-box window, and after setting the road for

No. 9 platform line lowered the signal for that line. The driver thereupon gave the

engine sufficient steam to start it, after which he closed the regulator, and allowed the

train to travel down the incline into the station by gravity.

Driver Morris says he looked for the green flag as he passed the signal-box, and,

failing to see it, thought that the platform was clear, and that he was to run up to the

buffer stops. Unfortunately there were some coaches standing alongside No. 8 platform,

which, owing to the curvature of the line, concealed from Morris’s view the train already

at No. 9 platform, and he did not become aware of the presence of the latter train until

he was about 20 yards from it. As soon as he saw it he applied the vacuum brake,

reversed his engine, and did all he could to stop his train, but this he failed to do before

striking the stationary train.

All the witnesses, including Inspector Boardman, say that the speed of the Bir-

mingham train when it entered the platform did not exceed 4 or 5 miles an hour. The

violence of the collision was due to the fact that the stationary train was close up to the

buffer stops, and was not able to yield to the impact, and doubtless the reason why so

many passengers were injured, was that they were standing up preparing to alight.

The working, so far as the signalman was concerned, was perfectly correct, and there

is no doubt that the green flag was properly exhibited, and that Driver Morris should have

seen it. But there is this to be said in Morris’s favour, namely, that the signal-box is
situated in a deep cutting, and the light, which is always bad, is made worse by the mist and smoke which usually hang about the place. Moreover, owing to the relative positions of the line and of the signal-box, the side of the latter forms the background for the flag, as seen from the foot-plate of an engine on the down fast line. The exterior of the signal-box, owing to local conditions, is dirty and discoloured, and forms a very bad background, especially for a green flag, the colour of which has also lost its freshness. In order to test this I travelled on an engine of the same class as the one concerned in the accident from the home signal into the station, and I found it by no means easy to distinguish the green flag which was displayed in the usual manner from the signal-box window. It is difficult to suggest a remedy for this, but perhaps a white square or circle in the middle of the green flag would tend to make it more conspicuous.

Taking all the facts of the case into consideration, I am of opinion that the occurrence may be attributed to a mistake on the part of driver Morris.

I was informed that the question of re-signalling Lime Street station, in accordance with more modern ideas, is under consideration by the Railway Company. When this is done, it will no doubt be possible to dispense with the use of the green flag, and to substitute a "calling-on" arm, or some other form of fixed signal, to convey to drivers the information now afforded by the green flag.

I have, &c.,
H. A. Yorke.

The Assistant Secretary,
Railway Department, Board of Trade.

APPENDIX.

**PARTICULARS OF DAMAGE TO ROLLING-STOCK.**

<table>
<thead>
<tr>
<th>Engine</th>
<th>Class</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>Engine 2582, “Precursor” Class</td>
<td>Front buffer plate and framings badly bent and both front buffers broken.</td>
<td></td>
</tr>
<tr>
<td>Engine 817, 5 ft. 6 ins., Passenger Tank, 8 wheels</td>
<td>Right front buffer broken, both back buffer seals broken, and back of bunker damaged.</td>
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<tr>
<td><strong>Birmingham Train.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Brake, 957</td>
<td>Buffer knees and buffer rod bent.</td>
<td></td>
</tr>
<tr>
<td>Saloon, 2151</td>
<td>Buffer rod bent.</td>
<td></td>
</tr>
<tr>
<td><strong>Liverpool and Leeds Train.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Brake, 708</td>
<td>Buffer castings, buffer spring, bogie centre casting, and five quarter lights broken; steam pipe, dynamo, and end damaged; buffer rods bent.</td>
<td></td>
</tr>
<tr>
<td>Third Class, 969</td>
<td>Buffer castings, stepboard, steam pipe, vacuum train pipe and one quarter light broken; drawbar and buffer rods bent and end panels damaged.</td>
<td></td>
</tr>
<tr>
<td>Third Class, 965</td>
<td>Buffer castings, bogie centre casting, one buffer rod, one buffer spring and one quarter light broken; dynamo, end steps, steam pipes and end damaged.</td>
<td></td>
</tr>
<tr>
<td>First Class, 122</td>
<td>Buffer castings, steam and vacuum pipes broken; buffer rods bent and end damaged.</td>
<td></td>
</tr>
<tr>
<td>Second Brake, 92</td>
<td>Buffer castings, end steps, buffer spring and steam pipes broken. Both ends damaged and buffer rods bent.</td>
<td></td>
</tr>
<tr>
<td>Parcels Van, 29</td>
<td>Buffer and buffer castings, axlebox, two brake timbers and vacuum pipes broken; buffer rods, knees and drawbar bent; end damaged and brake-work displaced.</td>
<td></td>
</tr>
<tr>
<td>Second Brake, 180</td>
<td>Stepboard split.</td>
<td></td>
</tr>
<tr>
<td>Third Class, 783</td>
<td>One quarter light broken.</td>
<td></td>
</tr>
<tr>
<td>Third Brake, 291</td>
<td>One quarter light broken.</td>
<td></td>
</tr>
<tr>
<td>Corridor Composite, 560</td>
<td>One large side light broken.</td>
<td></td>
</tr>
<tr>
<td>Corridor Third, 2469</td>
<td>One large side light broken.</td>
<td></td>
</tr>
<tr>
<td>Composite, 200</td>
<td>One quarter light broken.</td>
<td></td>
</tr>
<tr>
<td>Composite, 761</td>
<td>One axlebox broken.</td>
<td></td>
</tr>
</tbody>
</table>

Damage to carriage stock standing in the vicinity of mishap caused by the scattering of broken parts of the damaged vehicles.

Second Brake, 180 | Stepboard split. |
Third Class, 783 | One quarter light broken. |
Third Brake, 291 | One quarter light broken. |
Corridor Composite, 560 | One large side light broken. |
Corridor Third, 2469 | One large side light broken. |
Composite, 200 | One quarter light broken. |
Composite, 761 | One axlebox broken. |

Printed copies of the above Report were sent to the Company on the 4th June.