Public Safety and General Purposes Department,
Ministry of Transport,
7, Whitehall Gardens,
London, S.W. 1.

23rd December, 1921.

SIR,

I have the honour to report, for the information of the Minister of Transport, in accordance with the Order of the 28th November, the result of an Inquiry into the circumstances attending the collision between two passenger trains, which took place on the 26th November, at about 4.25 p.m., at New Street Station, Birmingham, on the London & North Western Railway.

The 2.10 p.m. express train (Bristol to Sheffield) was entering the station by No. 4 platform line, and struck the rear of the 4.12 p.m. local train (Birmingham to Derby), which was standing at the same platform. I regret to report that three persons were killed and 24 injured.

The stationary train included:

- Engine and tender No. 293, and the following five vehicles:
  - M.R. No. 782, 8-wheeled bogie third class brake.
  - No. 3725, composite brake.
  - No. 359, coach.
  - No. 924, third class coach.
  - No. 447, 6-wheeled brake van.

At the moment the collision occurred, the engine had just backed on to the vehicles, and the tender of the engine was on the point of being coupled to No. 782. The continuous brake had been applied to the five standing vehicles about 4.6 p.m., when they were placed at the platform by a shunting engine, and the blocks were therefore hard on the wheels.

The express was drawn by engine No. 757 (type 4-4-0) with 6-wheeled tender, and included the following nine vehicles:

- M.R. No. 7, 6-wheeled brake van.
- Seven 8-wheeled bogie vehicles.
- M. & S.W. Jt. No. 18, 4-wheeled horse box.

This train was fitted throughout with the vacuum continuous brake, working blocks on all wheels except the centre pair of the 6-wheeled vehicle, whilst the engine was equipped for the steam brake, vacuum-controlled, working blocks on the four coupled wheels of the engine and all wheels of the tender.

The force of the collision drove the stationary train forward about four yards. After the accident, the underframe of No. 447 was found tilted sideways and lying across the rails towards the outside of the curve, the front of the underframe being clear of No. 924. The leading and trailing ends of the bodies of Nos. 417 and 924 respectively locked together, with the result that the bodies in each case broke away from the underframes, and the ends in contact rose vertically in the air, the rear end of No. 447 being supported on the frame of engine No. 757. The body work of coach No. 924 tilted upwards until the centre of the roof came in contact with the under side of a footbridge, which checked the movement and broke the back of the coach. The headstocks and buffer castings of vehicles Nos. 782 and 3725 were broken. The damage to the express was confined to breakage of buffer castings and bending of buffer rods, in the case of the engine and three other vehicles.

**Description.**

New Street Station, Birmingham (L. and N.W. Railway), has a general east and west direction. The south part of the station, and in particular what is known as No. 3 up line, as approached by Midland up trains from the south-west, is concerned in this case. The station is worked jointly by the L. and N.W. and Midland Railway Companies.

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The western approach to the station is controlled from No. 5 signal box, which is situated on the north of the railway in a cutting (about 110 yards in length) between two long overbridges, which are in the nature of tunnels. The Midland road from Gloucester emerges from the first of these tunnels (Sumner Street Bridge) on a curve to the south, to form a junction with the Wolverhampton road of the L. & N.W. Rly. The approach to Nos. 3 and 4 up lines diverges immediately from the junction in a south-easterly direction, and, after traversing the short length of open cutting, passes under Hill Street Bridge, which is 66 yards in length.

No. 4 platform commences at the eastern face of this bridge, and No. 3 up line is laid along the south side of the platform. The alignment of the platform is on a sharp curve (about 15 chains radius) to the north. The approach to the platform, it will be seen, is tortuous, and does not lend itself to freedom of view by enginemen approaching the platform. No. 4 up line is south of No. 3, and is laid along the north side of No. 5 platform, being separated from No. 3 up line by a middle siding road. On No. 5 platform are situated two signal boxes—No. 4 towards the west and No. 2 the extreme east end.

No. 4 up line, by which the train was entering, is designed to be operated from the home signals for Nos. 3 and 4 up lines, and, after passing under Hill Street Bridge, passes immediately into the open cutting. The approach to Nos. 3 and 4 up lines diverges immediately from the junction in a south-easterly direction, and, after traversing the short length of open cutting, passes under Hill Street Bridge, which is 66 yards in length.

No. 4 signal box, the home signal for Nos. 3 and 4 up lines, is situated on the north side of the platform. The approach to the platform, it will be seen, is tortuous, and does not lend itself to freedom of view by enginemen approaching the platform. No. 4 up line is south of No. 3, and is laid along the north side of No. 5 platform, being separated from No. 3 up line by a middle siding road. On No. 5 platform are situated two signal boxes—No. 4 towards the west and No. 2 the extreme east end.

The west end of No. 3 platform is situated under the protection of the platform signal box, which is controlled from No. 5 signal box. The platform signal box is situated on the north side of the platform. The approach to the platform, it will be seen, is tortuous, and does not lend itself to freedom of view by enginemen approaching the platform. No. 4 up line is south of No. 3, and is laid along the north side of No. 5 platform, being separated from No. 3 up line by a middle siding road. On No. 5 platform are situated two signal boxes—No. 4 towards the west and No. 2 the extreme east end.

The atmosphere at the time of the accident was hazy, and though there was a tendency for smoke and steam to lie low in the cutting, there was nothing in the nature of fog.

The slow train (Birmingham to Derby) was due to leave at 4:12 p.m. It was, however, delayed by the late arrival of a passenger train from the turntable of engine No. 203. The vehicles were standing on No. 3 up line at No. 4 platform when the collision occurred about 4:25 p.m. The vacuum brake was applied to the five vehicles composing the train, the rear buffers being in a position about 35 yards east of (i.e., under the protection of) the platform signal. The engine had just backed on to the east end of the standing vehicles, and was on the point of being coupled to them when the accident took place.

The express train, on the other hand, was running to time, and was first offered to signalman Harris in No. 5 signal box from Five Ways at 4:18 p.m. Harris, in accordance with the working instructions, immediately offered the train to signalman Barnbrook (No. 4 signal box), who gave it on to signalman Plewey (No. 2 signal box). Barnbrook tried the clearance bar fixed at the platform signal for No. 3 up line, to satisfy himself that the slow train for Derby was standing inside the protection of the signal. He then lowered his home signal for the express to enter No. 4 platform by No. 3 up line, and worked a disc in No. 5 signal box to notify the signalmen there that the train was accepted into the station by that road. The platform signal was at danger, with both controls exercised by the signalmen in Nos. 2 and 4 signal boxes in the normal position.

The necessary points and signals were set (No. 5 signal box), and at 4:23 p.m. Harris sent the signal man to Five Ways to order the line open. The express No. 757 was driven by Mr. Hudson, who was the assistant engineman. The brake was applied, and the engine, having stopped, was handed over to the signalman, who was the assistant engineman at the time of the accident. The express train was then allowed to proceed, and the signalman was stationed at the platform signal for No. 3 up line, to watch the express train as it passed into the station.

The west end of No. 3 platform is situated under the protection of the platform signal box, which is controlled from No. 5 signal box. The platform signal box is situated on the north side of the platform. The approach to the platform, it will be seen, is tortuous, and does not lend itself to freedom of view by enginemen approaching the platform. No. 4 up line is south of No. 3, and is laid along the north side of No. 5 platform, being separated from No. 3 up line by a middle siding road. On No. 5 platform are situated two signal boxes—No. 4 towards the west and No. 2 the extreme east end.

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My conclusion is that full effect was made by the signalmen, and that no responsibility for the accident can be attributed to them.
The necessary points and signals were set for the express by signalman Underhill (No. 5 signal box), and at 4:21 p.m. Harris sent acceptance to Five Ways. The train was belted into section at 4:22 p.m. and passed No. 5 signal box at 4:24 p.m. when "out of section" was sent. Harris stated that the express emerged from Summer Street Bridge and passed his post at the usual speed.

The express engine No. 757 was driven by William Shepherd. In his evidence he stated that after leaving Cheltenham he stopped the express at Bromegrove for the banking engine, and checked the speed of the train, in accordance with an existing speed restriction, at Kings Norton Junction and between Church Road and Five Ways. On these occasions the continuous brake was used and acted in a thoroughly satisfactory manner. All the signals west of New Street Station were lowered as he approached No. 5 signal box, and the home signal for No. 4 platform (worked from No. 4 signal box) indicated safety. He acknowledged that the clearance of all these signals told him that he had a clear road as far as the platform stop signal, but no further. He emerged from Summer Street Tunnel at a speed of ten miles an hour with steam shut off and brakes applied, in accordance with the usual practice, which is to close the regulator at Five Ways. He kept the continuous brake partially applied until he had passed under Hill Street Bridge, and arrived at the west end of No. 4 platform. His speed at that point had been reduced to about six miles an hour.

The platform stop signal, owing to left-hand curvature of road and obstruction to view caused by the boiler of the engine, is not visible to drivers from the right side of the footplate. There was no time to use the Sanders, as there was only an interval of about 18 yards between the platform signal and the standing train. He was therefore unable to avoid the collision.

Fireman Cowley stated that, when the train was running past the turntable, i.e., between Summer Street and Hill Street Bridges, Shepherd asked him to look out for the platform signal. He therefore leaned out of the cab as far as he could from the left-hand side of the footplate, but was unable to see the signal until he was halfway between it and the end of the platform, on account of the steam and smoke which was hanging about. The signal was at danger, showing a red light. He put his head inside the weather board and called out to Shepherd, "It's on," and received the reply, "Right." He did not expect that the driver would have any difficulty in stopping the train before passing the platform signal. He thought his knowledge of the station was adequate to qualify him to assist the driver in observing signals. In his experience it was the practice of drivers to observe signals themselves, even though they asked firemen to look out for them.

Ticket-examiner William Barrington stated that from his position on platform No. 4, alongside the vehicles of the standing train, he saw the engine of the express rounding the curve as it entered the platform road. He thought it was travelling at the usual speed, but judged from the quietness of its movement that the continuous brake was not applied. He consequently did his best to warn the passengers who had taken their seats in the standing train and endeavoured to get them out of the carriages.

Conclusion.

My conclusion is that full effect was given to the working instructions by the signalmen, and that no responsibility for the accident rests with them. The collision
was due to a misunderstanding between the engineman, driver Shepherd, and fireman Cowley, of the express, with regard to the position of No. 4 platform signal. For this misunderstanding I consider that driver Shepherd was mainly responsible, in that there was no adequate reason why, in accordance with what undoubtedly is the best practice of enginemen, he should not have satisfied himself, in the conditions that prevailed, what the position of the signal was. The Regulations are very explicit, and Shepherd was fully aware of the instructions to drivers entering New Street Station, viz.,

"All trains and engines emerging from any of the tunnels must be completely "under control, so that they can be stopped at any part of the station".

"That the lowering of the main line signals for entering the station indicates "that the line is clear to the platform stop signals near the middle of the "station."

Judging from the effects of the collision, I estimate that the speed of the express at the moment of impact was in excess of that stated by Shepherd—possibly ten miles an hour. I do not think that this speed is in accordance with the aforesaid instructions.

2. The approach to New Street Station is admittedly difficult. The gradient falls steeply actually to the level stretch of the platform; the traffic is of a complex and heavy character, and smoke and steam do not readily clear out of the open cuttings.

The general freedom from accident at the station is therefore remarkable, and speaks well for the care and caution normally exercised by enginemen.

3. It is, however, for consideration by the Joint Companies whether signalling conditions cannot be improved with advantage. Repeating lights, at all events for No. 4 platform signal, could be placed nearer the west end of the platform, or colour light signals could perhaps be placed centrally, over Nos. 3 and 4 up roads, in substitution for the existing semaphore and lamp signals on the platforms.

There is one other feature in this case to which I have to draw the attention of the Joint Companies, in connection with the working of the station. The failure to release the engine from the turntable for the 4.12 p.m. slow train was the cause of the delay to that train starting, and therefore the origin of the accident. The point is of special importance in respect of platform accommodation, even apart from the actual accident, because the platform space in rear of the platform signal is sufficient only for five or six coaches. With trains of the length of the express, these coaches would have been standing under Hill Street Bridge if the engine had stopped at the signal.

I have the honour to be, Sir,
Your obedient Servant,
J. W. PRINGLE,
Colonel.

The Director General,
Public Safety and General Purposes Department,
Ministry of Transport.

NORTH EAST
Public Safety and General
Ministry

SIR,
I have the honour to report, for the information of the Order of the 20th I cause of the collision which took place on Auckland Junction near Leamside Station.

In this case the 4.21 p.m. up express from Aberdeen and Inverness to Plymouth an when it collided with the rear of an empty goods train line immediately south of Auckland Junction, which was derailed, and fell over a leading wheels of the first passenger vehicle; the front empty vehicles were damaged, while thrown down the bank. Fortunately, no passengers subsequently complained of the express, who remained on the footplate miraculously escaped with no more serious injuries.

The express train was drawn by a 6-wheeled tender, and comprised seven passenger carriages. The engine and four vehicles 347 tons 141 cwt. The engine was a brake on twelve wheels; the train was being worked simultaneously by a combine.

The empty stock train included engine tender, and four 6-wheeled passenger vehicles 64 tons, and the vehicles 51 tons 15 cwt.

About two chains of permanent way was

Descriptentions

The branch double line to Durham, the Hill, unite at Auckland Junction, which is main road through the station has a general line, after running parallel with the main

The block posts adjoining Auckland J south Belmont and Frankland Junctions respectively.

Auckland Junction signal box is s.. opposite the junction points. In front junction crossings. The nearest of these is the down main line, and the two furth of the two up lines is the up departure Leamside Station; whilst the most easterly and up main lines form a trailing junction signal box, and east of the up main line, the East Siding.

Access to this siding is the up main line, which are immediately in

Measuring from the centre of the signal box, the Leamside signal box... Signal bridge carrying Auckland home signals and exit sign Siding.

Junction safety points, up main and safety points of East S

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