MINISTRY OF TRANSPORT AND CIVIL AVIATION,
Berkeley Square House,
18th April 1958.

SIR,

I have the honour to report for the information of the Minister of Transport and Civil Aviation, in accordance with the Order dated 20th January 1958, the result of my Inquiry into the collision which occurred at 1.51 p.m. on 16th January 1958, at Preston in the Western Division of the London Midland Region, British Railways.

The 1.0 p.m. 4-coach steam passenger train from Blackpool Central to Wigan was passing through the crossover leading from the Up Slow line to No. 3 platform at about 10 m.p.h. when it struck a light engine which was standing on the Up Slow at the end of No. 2 platform. The engine had been used to resolve some vacuum brake trouble which had delayed a parcels train in No. 2 platform, and in consequence the light engine was standing foul of the route to No. 3 platform.

In the resulting collision the passenger train engine was derailed and the four coaches were buffer-locked. The tender of the light engine which was struck a glancing blow on the left-hand buffer was swung round at right angles to the track, and the engine was overturned to the right. The parcels train, which comprised 16 vehicles, was driven forward two or three yards and the last six vehicles were damaged. One of them, a motorcar van, was partially telescoped, another was derailed and mounted the platform, and the other four were buffer-locked.

Nine passengers and four members of the railway staff were injured or suffered from shock, and twelve of them were taken to the Preston Royal Infirmary where one passenger was detained, but only for a day.

The Down and Up Slow lines through Nos. 1 and 2 platforms and No. 3 platform line were blocked, but train working was not seriously affected because there were several alternative routes through the station.

The Preston steam crane arrived within an hour, and the crane from Crewe arrived later in the afternoon. The connections from Nos. 4 and 5 platforms to the Down Slow line leading to the north were re-opened at 4.50 p.m. on the same day and the Down Slow through the station was brought into use at 7.15 a.m. the next morning, normal working was resumed throughout the station at 10.35 a.m. after an interruption of nearly 21 hours.

The weather was misty, and visibility was further reduced by steam and smoke which hung about in the heavy atmosphere.

DESCRIPTION

The trains

1. The passenger train comprised four non-corridor bogie coaches drawn by a Class 5 mixed traffic engine with 4-6-0 wheel arrangement. The length overall of the engine and coaches was 306 ft., and their total weight was 236 tons. The vacuum brake operated on all wheels of the coaches, and the steam brake on the coupled and tender wheels of the engine. The maximum available brake force was 173 tons, equivalent to 73% of the total weight.

2. The light engine No. 90277 was a Class 8 freight engine with 2-8-0 wheel arrangement. Its length over buffers was 63 ft. 6 ins. and its weight in working order was 128 tons. The steam brake which operated on the coupled and tender wheels gave a brake force of 66 tons, equivalent to 51.7% of the weight, and it was fully applied at the moment of collision.

3. The parcels train comprised three 4-wheeled vans at the front, followed by a cafeteria car and twelve bogie vans, of which nine were brake vans, two were milk vans and one was a motorcar van. The train was hauled by a Class 5 mixed traffic engine similar to the passenger train engine. The total length of the engine and train was 841 ft., and the total weight was 493 tons.

The motorcar van, the body of which collapsed, had been built in 1922 and it had been converted to its present use in 1956. It had a steel underframe and a composite body of wood framing with steel panels. It was the fifth vehicle from the rear.

The vacuum brake operated on all wheels of the coaches and the steam brake on the coupled and tender wheels of the engine, but the brakes were off when the accident occurred.

The site and signalling

4. Preston is an important junction where the West Coast main line to Scotland is joined by the lines from Blackburn in the east, Southport in the south-west, and Blackpool and Fleetwood in the north-west; the junctions with the main lines from Liverpool and Manchester are about 2 and 5½ miles respectively south of the station.
There are 15 platforms, of which 5 are terminal bays. The only ones relevant to this Inquiry are Nos. 2 and 3, and their layout and signalling are shown in the accompanying drawing. The Up Slow line serves No. 2 platform and No. 3 is served by an Up and Down line; between them is a double-ended carriage siding with a short loop.

The northern connections to these lines are controlled from No. 4 signal box; No. 2A box controls the south entrance to the Slow line, and No. 2 box the south exit from and entrance to the Up and Down line; No. 1 box, which is further south, controls movements to and from that direction.

5. No. 4 box is between the Up and Down Fast lines and it is about 100 yards north of Fishergate overbridge, which crosses all the tracks just clear of the northern end of the platforms. No. 5 box is 390 yards further north, and between here and No. 4 box there are six running lines. They are, from west to east, the Down Through, Up Through, Down Slow, Up Slow, Down Fast, Up Fast. At No. 4 box the two Through lines pass to the west of the station platforms; the Slow lines form Nos. 1 and 2 and the Fast lines Nos. 5 and 6 platform lines; various connections give access to or exit from the other platform lines.

No. 4 box contains a long frame of 164 working levers, 17 spares and 3 spaces, and the signalmen standing at the frame face all the running lines, except the Up Fast which passes to the east of the box. Permissive block working is in operation on the Up Slow line through No. 2 platform, and absolute block, controlled by interlocked instruments in Nos. 2, 4, and 5 boxes, is in force on No. 3 platform Up and Down line. During the two busy shifts there are three signalmen on duty: one man at the north end of the frame controls Up movements, the man at the south end controls Down movements; and the third man, known as the middle man, helps the other two and is responsible for working the block instruments controlling movements in and out of No. 3 platform line. The long frame above which are mounted the instruments is divided into two sections by boarding over lever spaces 73, 74 and 75, thereby giving access to the middle of the west window; the signalmen can also look out from this window at either end of the frame. The ends of Nos. 2 and 3 platforms cannot be seen from the frame and the signalmen have to walk to one of the west window openings; visibility is sometimes obscured by smoke and steam hanging about under Fishergate Bridge, which spans all the tracks, and is 76 ft wide overall.

6. The relevant Up Slow signals are the Home, Nos. 118, and the Starters, Nos. 114 and 115, giving access to Nos. 2 and 3 platforms respectively. The route to No. 2 platform is through Nos. 11 and 66 points normal, and the route to No. 3 platform is through Nos. 11 and 10 points reversed. The relevant mechanical locking is:

- Signal 118 (which is slotted from No. 5 box) is released by signal 114 or 115.
- Signal 114 is released by lock bar 20, and it locks No. 11 points normal.
- Signal 115, which is slotted from No. 2 box, is released by No. 2 lever (the block release lever controlled from No. 2 box), Nos. 11 and 10 points reversed, and lock bar 20.

7. The Up Slow line is not completely track circuited, and it will be seen from the drawing that there is a gap between T.C. 11694 covering the junction with the Up Fast and T.Cs. 2397 and 2398 which are Nos. 2 and 3 platform track circuits respectively. These begin at the north ends of the platforms and consequently the lines through Nos. 10, 11 and 66 points, among others, are not covered by track circuits.

Modernisation of the signalling

8. In 1938 a scheme was approved for the installation of colour light signals, track circuits, and the amalgamation of signal boxes; there was to have been a new power-worked south box and a similar north box, which would cover the work of the existing Nos. 4 and 5 boxes. The contracts for the supply and installation of the two electric interlocking frames were let, but unfortunately work was stopped by the war. Afterwards there were so many urgent arrears of work to be overtaken that the Preston scheme was still further postponed.

In 1948 the lever frame in No. 4 box was in such a condition that it had to be replaced by a similar one but staff was not available to undertake the complete resignalling scheme. A number of additional track circuits were provided in the Fast lines to the east of No. 4 box when the permanent way was renewed in 1952, and in 1953 some work was done to the south of the station.

The complete resignalling of Preston Station and its approaches, including colour light signalling, continuous track circuiting, and relay interlocking has been included in the British Transport Commission's Modernisation Plan, but in view of the high priority which is being given to the resignalling of the lines which are now being electrified, it is improbable that the work at Preston can be undertaken until after 1970 when it is hoped that electrification will be extended to this area.

Train and shunting movements

9. Preston is one of the busiest stations in the country. In winter, train and light engine movements average about 640 per day, of which about half are passenger trains; in addition there are 400 daily shunting movements controlled from No. 4 box. In summer there are about 800 daily train and light engine
movements, of which more than 600 are passenger trains, and the shunting movements controlled from
No. 4 box rise to over 500 per day. Shunting movements controlled by other boxes are on a comparable
scale, though none of them is quite so busy as No. 4 box.

REPORT

10. The parcels train arrived from Carlisle in No. 2 platform at 12.52 p.m., stopping with the
engine close to the home signal and with the rear bogie of the last van on No. 66 points. The engine was
detached and taken to the carriage siding between Nos. 2 and 3 platforms where three 4-wheeled vans and
a cafeteria car were attached. These vehicles were coupled to the front of the train which was then "belled
out" to No. 2A signal box, but during the subsequent brake test some difficulty was experienced in
obtaining the correct vacuum; a few minutes later the departure was postponed and the signalman in No.
2A box replaced his signals. Station Inspector J. Cross sent for a Carriage & Wagon examiner, and later
he asked Passenger Yard Foreman C. L. Johnson to get another engine to test the brakes from the rear.

In the meantime the No. 4 box signalman, who was unaware of the delay, allowed light engine No.
90277 to enter No. 2 platform line at about 1.20 p.m. under the Permissive Station Yard Block Regulations
so that it could follow the parcels train which he expected would be leaving shortly. The light engine
stopped a yard or two from the rear of the parcels train, and Foreman Johnson rightly decided to use it
for the brake test in preference to getting the engine from a Wigan train on No. 3 platform as he had
originally intended.

Johnson coupled the light engine to the rear of the parcels train, and he was so engrossed in the test-
ing that he did not notice that the rear of the tender was standing foul of the crossover leading from the
Up Slow to No. 3 platform; nor did the engine crew realise this. Eventually the brake trouble was
overcome, and the parcels train was about to leave when the 1.0 p.m. Blackpool train entered the station.

11. Driver R. Bradshaw, who was in charge of the Blackpool train engine, stated that he ran into
Preston slowly, having been checked by the No. 4 box distant signal at caution; the home signal for the
Up Slow was off, and as he approached No. 4 box at about 10 m.p.h. his fireman told him that the signal
for No. 3 platform line was also clear. Bradshaw said that he himself saw this signal a moment later but
he did not see the light engine on No. 2 platform because it was "on his blind side" (he was driving from
the left and the light engine on the right would have been obscured by the boiler). He estimated that the
speed at the moment of collision was only 5 m.p.h. because he was slowing down to stop at the north end
of the platform.

Fireman S. Maxwell said that both the home and No. 3 platform signals were clear but he did not see
the light engine at the end of No. 2 platform because it was misty and there was smoke under the bridge.
He thought that the speed at the time of the collision was about 10 m.p.h.

12. Signalman J. Yates said that he was in charge of the north end of No. 4 box, and that he was
responsible for all movements into the station on the Up side. The parcels train was accepted into No. 2
platform and it passed his box at about 12.50 p.m. The next movement on the Up Slow line was the light
engine. Apparently the signalman at No. 5 box thought that it was for the Preston Motive Power Depot,
which is to the north of that box, and accordingly he offered it to No. 4 box under the 3-3-2 signal, "shunt-
ing into forward section", so that it could clear the connections leading to the Preston shed. The engine,
however, was for the Lostock Hall Motive Power Depot to the south of Preston, and consequently the
driver came forward to No. 4 box where Yates stopped him and enquired his destination. On hearing
this, Yates decided to let the engine follow the parcels train through No. 2 platform, which was quite a
normal procedure, though if he had known of the engine's destination earlier he could have sent it
through one of the unoccupied lines.

He looked out of the window at the north end of the box, and, thinking that there was sufficient room
for the engine to stand clear of the connections to No. 3 platform, he offered it to No. 2A box; he also
advised No. 1 box that its destination was Lostock Hall. The engine was accepted under the permissive
regulations, as already stated, and Yates cleared the calling-on arm: No. 116 to allow it to proceed ahead.
He did not know of the delay to the parcels train which he thought would be leaving at any moment,
because the signalman at No. 1 box said in reference to the light engine "He will be all right, No. 356 (the
parcels train) is now ready to go." The light engine passed the box but Yates did not look out to see
where it had stopped. After this he attended to some other movements, and at about 1.46 p.m. he was
offered the Blackpool train, which he accepted because he thought the line was clear up to the south end
of the overbridge.

13. Signalman R. Wilkinson, who was the middle man, obtained line clear from No. 2 box for the
Blackpool train to enter No. 3 platform and, after setting the route, he pulled No. 2 clearance lever so
that Yates could get signal No. 115. The track circuit in No. 2 platform line was still showing that the
line was occupied but Yates thought that by this time the parcels train had left and the light engine was in
the platform. He lowered signal No. 115 and the Blackpool train passed the box at about 10 m.p.h. On
hearing the collision he immediately sent the Obstruction Danger signal on the Up Slow line.
Yates admitted that he had misjudged the distance available for the light engine behind the parcels train and that he assumed that this train had left and that its place in No. 2 platform had been occupied by the light engine, thus leaving the route clear into No. 3 platform. He did not, however, look out again to check whether the line was clear. On the day of the accident he would have had some difficulty in seeing the rear of the light engine under Fishergate Bridge on account of the mist, smoke and steam, but he did not put this forward as an excuse.

14. Wilkinson confirmed Yates' account of the events which led up to the accident. He said that he did not look out to see whether the line into No. 3 platform was clear because the other signalman was responsible for working the signal which gave authority for the train to enter. Wilkinson added that the conditions under Fishergate Bridge often made it difficult for the signalmen to see whether or not the lines at the south end of the bridge were clear.

CONCLUSION AND REMARKS

15. This accident was due to Signalman J. E. Yates' failure to ensure that the line into No. 3 platform was clear for the Blackpool train. Driver Bradshaw had this train under proper control and no responsibility rests with him. In view of the bad visibility neither he nor his fireman could have been expected to see that the light engine was obstructing the route.

16. I am sure that Passenger Yard Foreman C. L. Johnson would have warned the signalman in No. 4 box that the light engine was standing foul of the connections to No. 3 platform if he had noticed it but he did not give the matter a thought, nor did he advise the signalman of the delay to the parcels train. Station Inspector J. Cross, who had already told the signalman in No. 2 box about the brake trouble, would, I believe, have warned the signalman in No. 4 box, but he thought that Johnson would do this when he asked for the Wigan engine from No. 3 platform as originally contemplated. Johnson, however, had no need to do this when the light engine arrived at the rear of the parcels train, and thus Signalman Yates was left in ignorance of the delay. This lack of knowledge may have contributed to his failure to see that the line was clear for the Blackpool train. Although the parcels train does not run to a rigid timing it would be good operating practice for the station staff to advise the signalmen concerned when the train was likely to be unduly delayed and I have no doubt that this will be done in future.

17. Track circuits on the Slow lines under Fishergate Bridge would have prevented this accident and their absence adds to the difficulties of the signalman in No. 4 box which controls much of the heavy traffic through this busy station. Although the lines are close to the box and can be seen from the west window, they can be obscured by the smoke and steam from engines standing under the bridge and in those circumstances it is extremely hard to judge whether or not the lines are clear.

18. The need for modernising the signalling at this important station has long been recognised and it is unfortunate that this work which was begun before the war has had to be postponed for so long and now will be still further delayed on account of other commitments in connection with the electrification programme. The completion of the track circuiting of the Up Slow lines between the north ends of Nos. 2 and 3 platforms and the existing T.C. 11694 is, however, a matter of urgency and it is satisfactory to report that the work is now in hand. It would also be desirable to review the working conditions throughout this station to see whether there are other places where similar safeguards should be provided in advance of complete modernisation of the signalling.

I have the honour to be,

Sir,

Your obedient Servant,

C. A. LANGLEY,
Brigadier.

The Secretary,
Ministry of Transport and Civil Aviation