



MINISTRY OF TRANSPORT

RAILWAY ACCIDENTS

REPORT ON THE ACCIDENT

which occurred on the
10th December, 1947, at

MANCHESTER (VICTORIA)

on the

London, Midland & Scottish Railway

LONDON: HIS MAJESTY'S STATIONERY OFFICE

1948

ONE SHILLING NET

LONDON, MIDLAND AND SCOTTISH RAILWAY.
(NOW LONDON MIDLAND REGION, BRITISH RAILWAYS)

Ministry of Transport,
Berkeley Square House,

London, W.1.

3rd March, 1948.

Sir,

I have the honour to report for the information of the Minister of Transport in accordance with the Order of 11th December, 1947, the result of my Inquiry into the accident which took place at about 3.52 a.m. on 10th December, 1947, at Manchester (Victoria) Station on the London, Midland and Scottish Railway.

Whilst descending the steep incline from Miles Platting, the engine of the 6.50 p.m. special petrol train, Neville Hill to Eccles, was overpowered, the train ran down the falling gradient at increasing speed and was diverted into No. 7 bay platform, where it collided violently with the hydraulic buffers. I regret to report that Driver G. H. Brewin died of his injuries, Fireman L. W. Hopper was injured, and Guard W. O. Lewis suffered from shock.

The train consisted of 20 loaded petrol tanks and 2 runner wagons, one next the engine and the other next to the 20 ton brake van, the whole weighing approximately 500 tons, including 280 tons of petrol, equivalent to a load of 30 standard 13-ton mineral wagons. It was hauled by engine No. 8903, Class 7, freight 0-8-0 type, left hand drive, with 6-wheeled tender, of a weight in working order of 99 tons 10 cwt.; the estimated weight at the time of the accident, after allowing for consumption of coal and water, was 92 tons 15 cwt. The total weight of engine and train was thus approximately 593 tons and the length over buffers was 527 feet.

The engine was fitted with vacuum brake operating cast iron blocks on all engine and tender wheels, giving brake power percentage of 66.2 with the tender partially loaded; sanders were fitted at the front of each of the first two pairs of coupled wheels. The van was fitted with a hand screw brake operating cast iron blocks on all wheels, giving 90% brake power; the runner wagons had standard side brakes. The brakes of the petrol tank wagons were not used, as is explained later.

The train, which was diverted from the main line at Victoria Millgate box, collided with the hydraulic buffers at a speed of about 25 m.p.h. The engine overrode the stops, mounted the platform and came to rest in the concourse a few feet from the booking office. The main shock of the collision was absorbed by the buffers and the leading runner wagon, which was completely destroyed. The engine suffered comparatively minor damage and was hauled away on its own wheels. The front buffer beam was buckled; buffers, brake gear, sand pipes and rail guards were broken or damaged. The main frame and the back plates of the tender were buckled and the brake gear was damaged. Of the tank wagons, the first three were derailed all wheels, their underframes being badly bent and the tanks strained and leaking. Ten of the remaining petrol tanks, the rear runner wagon and the brake van were undamaged. The others sustained minor damage, the fifteenth and nineteenth from the engine each being derailed one pair of wheels.

Prompt action was taken by Inspector F. W. Payne, who was on duty at the station at the time of the accident; he called for ambulances and the fire brigade, and took immediate precautionary action to prevent an outbreak of fire. Driver E. Downs, who was returning home after a turn of duty, also assisted by putting out the fire in the engine. The fire brigade and ambulances arrived very quickly and the situation was dealt with expeditiously and efficiently by all concerned. The petrol from the three leading tanks was pumped into road vehicles before these wagons were removed later in the day, but the engine, which had ploughed through the concourse, could not be drawn back and sent to shed till 8.30 p.m. on the following day.

The weather was damp and foggy with visibility of about 40 to 50 yards. The rails were greasy.

DESCRIPTION

1. The train was routed in the Up direction from Neville Hill (Leeds) via Mirfield, Diggle, Micklehurst, and Ashton Moss to Miles Platting, and thence down the incline to Manchester (Victoria) and Eccles.

The layout of tracks from Miles Platting to Manchester (Victoria), together with relevant signal boxes, signals, gradients, etc., is shown in the accompanying diagram.

The line from Ashton Moss converges with that from Newton Heath at Miles Platting Station Junction. From here to Collyhurst Street Signal box, there are six tracks and then four lines descend the incline in a westerly direction past Newtown No. 2, Newtown No. 1 and Victoria Millgate boxes. These lines are named in order from North to South:—Down North, Up North, Down South and Up South; the petrol train was routed on the last named.

2. Approaching Miles Platting, the Ashton Moss line is on a falling gradient of 1 in 166, which changes to 1 in 178 at the junction. At Collyhurst Street box, the steep incline commences with a gradient of 1 in 47 for the first 720 yards, changing at Bridge No. 11 to 1 in 59 for a further 1,200 yards as far as Cheetham Hill Road overbridge. Thereafter the gradient rises at 1 in 452 into the terminal platforms and at 1 in 180 on the main lines into the through station.

About 150 yards back from the head of the 1 in 47 gradient there are two Stop Boards with the words "Goods trains must stop here to pin down brakes." One Stop Board is fixed immediately to the left, or south, of the Up Goods line, the other is attached to the post of the Up Starting Signal South line (Miles Platting Box) and is situated midway between the Up North and Down South lines.

3. The relevant instructions for working trains down the incline are printed in the General Appendix to the Working Time Tables and a copy is given as an Appendix to this Report. It will be noted that in the case of a *freight* train, the train crew are instructed to apply sufficient wagon brakes to hold the train without resort to the engine or van brakes. In the case of *petrol* trains, however, the pinning down of hand brakes is prohibited on account of possible danger from sparks and the relevant entry in the Working Time Tables is given on page 26 of Supplement No. 4 to the General Appendix which reads as follows :—

"The general instructions for working down inclines :—

Add note to first paragraph.—

Hand brakes of tank wagons loaded with spirit must not be pinned down for braking purposes on inclines."

In order to meet this situation, the Divisional Operating Manager, Manchester, issued instructions to all Chief Controllers on 20th May, 1946, of which the following is the relevant extract :—

"When trains consisting wholly of loaded petrol tanks are required to negotiate a gradient of the line over which A.W.B. Instructions apply, the train must be assisted by an engine coupled in front."

These instructions were issued to Chief Controllers only. No amendment was made to the Working Time Tables, nor were similar instructions issued to running shed staff.

NARRATIVE

4. The weather was fine when the train left Neville Hill at about 9.50 p.m. on 9th December. The journey was uneventful, apart from intermittent fog, and no difficulty was experienced descending the Micklehurst incline of 6 miles with gradients of 1 in 100 to 1 in 175. The fog was dense, with visibility of only 50 yards, when the train arrived at Miles Platting at about 3.45 a.m. After stopping for about 2 minutes, it was routed on the Up South line and passed Collyhurst Street box at 3.47 a.m. travelling at a normal speed of about 4 m.p.h. Newtown No. 2 box was closed, but Signalman Ballantyne of Newtown No. 1 box, who received the "Train Entering Section" Signal at 3.46 a.m. immediately obtained "Line Clear" from Signalman Shaw of Victoria Millgate box.

Shaw accepted the train up to his Home signal with his junction set for the Terminal Station because the Up South line ahead was blocked by a freight train from Ashton Moss which had descended the incline on the Up North line, had been transferred across to the South line at Millgate Junction and had stopped for the purpose of un-pinning brakes. Whilst awaiting the approach of the petrol train, Ballantyne heard the engine whistle sounding continuously and, realising it was out of control, sent the "Train Running Away on Right Line" 4-5-5 signal at 3.48 a.m., one minute before the train reached his box. This prompt action enabled Shaw to warn Signalman Jones of Victoria Turntable box that the train would be diverted into the Terminal Station, where the route was set for No. 7 platform, which was empty.

5. Prior to starting, Guard Lewis had discussed the train loading with the late Driver Brewin, who decided that, as he had a very good engine, he would not need any assistance whilst descending the Miles Platting incline. It appeared that all three members of the train crew knew that an assisting engine could be obtained if required, but, in view of Driver Brewin's confidence, no further steps in this direction were taken. Brewin was thoroughly familiar with the route, he had worked Engine 8903 on many previous occasions, and had specially asked for it for this trip.

6. When the train stopped at the Miles Platting A.W.B. board, Lewis pinned down the brake of the runner wagon next his van, but Fireman Hopper did not take similar action, because his driver was so confident that the engine would hold the load. On starting down the incline, Brewin eased his brakes and allowed the train to roll slowly forward with the regulator closed. It appeared to be under perfect control, travelling very slowly at a speed of only 3 to 4 miles per hour till it reached Newtown No. 2 box. At this point the wheels suddenly commenced to skid, whereupon Brewin applied sand, but this had no effect. Hopper noticed that the brake reservoir was showing 21in. of vacuum and the train pipe "zero," thus indicating that the brakes were fully applied.

Brewin then reversed his engine, eased the brake and opened the regulator, but the only effect was to make the wheels spin backwards. He closed the regulator again and reapplied the brakes and sand. Owing to the darkness and the fog, Hopper could not tell whether they were effective, so he walked along the engine frame and verified that they were working properly by the smell of the heated sand; he also saw sparks flying from the wheels. The train, however, continued to gather speed with engine and tender wheels skidding. Hopper did not realise that they had been diverted to the bay platform until he saw Victoria Turntable box through the fog. Nothing further could be done to reduce speed and the train collided with the buffers at the end of No. 7 platform at a speed which Hopper estimated to be at least 25 m.p.h. As soon as the train began to get out of control, Brewin sounded the engine whistle continuously and thus gave warning to Signalman Ballantyne.

7. Guard Lewis applied the brake in the van as soon as the train started, but he did not notice anything unusual, until the wheels began to skid, when the van was between Nos. 12 and 13 bridges. He released and reapplied his brake several times but thereafter speed began to increase and the van wheels kept picking up. Lewis also estimated that the train was travelling at about 25 m.p.h. at the moment of collision.

8. Driver Downs, who as already stated, was returning from work when the collision occurred, acted promptly; he got on to the engine footplate, helped Fireman Hopper to the platform and then put out the fire. He noticed that the brake handle was right across in the "on" position, the regulator was closed, the cylinder cocks were open, and the reversing wheel was nearly in full backward gear. The vacuum was showing 20in. with the train pipe showing "zero."

9. Examination of the engine after the accident showed that the brake blocks, although worn, were in good condition, as also were the tyres which were without flats. The sanding gear was in working order with plenty of dry sand in the boxes. The brake van was found with the hand brake applied ten turns and the brake blocks hard on all wheels.

10. The Control Staff, Manchester, under the charge of Mr. Pickup, the Chief Controller, had been advised that the 6.50 p.m. freight train from Neville Hill would consist of tank wagons for Eccles, but neither Mr. Pickup, nor his assistants, realised that they were full of petrol. The normal tank traffic to Eccles from the east was usually empties or molasses. The Control Staff were particularly busy on the night of 9th December, dealing with a heavy accumulation of coal traffic, which had first priority, consequently no one checked the load card to ascertain whether the tanks were empty or loaded. Mr. Pickup produced copies of the instructions regarding working petrol trains which have already been referred to, and stated that if he or any of his staff had realised that a loaded petrol train was to proceed down Miles Platting incline, an assistant engine would have been ordered in accordance with recognised practice.

CONCLUSION

11. The accident was due to the available brake power being insufficient to hold the petrol train on the Miles Platting 1 in 47 falling gradient, under the conditions prevailing at the time, when the rail was damp and probably very greasy. Both Driver Brewin and Guard Lewis appeared to have been conversant with the instructions regarding working trains down the incline, and they also knew that an assistant engine could be obtained if required. All the evidence, however, points to Brewin's being quite confident that his engine was capable of controlling the load; he had worked it on other occasions and was particularly satisfied with its performance. It was fine when the train left Neville Hill and Brewin may have been expecting similar conditions at Manchester,

The authorised maximum freight loading for this class of engine down the Miles Platting incline is equivalent to 48 standard 13-ton mineral wagons, but with such a load it would, of course, be necessary to pin down brakes in accordance with the instructions. The load of the petrol train, however, was only equivalent to 30 mineral wagons and Brewin must have thought that the braking power of his engine provided sufficient margin of safety to enable him to negotiate the incline without difficulty; but, as events showed, he made an error of judgement which cost him his life. He was 48 years old, and had 31 years' service with the Company, including 21 years as a fireman and five as a driver. He had worked over the route for a number of years both as fireman and driver and had a good record.

12. No blame attaches to Fireman Hopper, who carried out his Driver's orders satisfactorily and took what action he could to control the train; nor does any responsibility rest on Guard Lewis, who before starting, discussed the train loading with his Driver and asked him whether he required an assistant engine. Whilst descending the incline, he worked his brake in the normal manner and it was found fully applied after the collision.

13. Of the signalmen concerned, Ballantyne of Newtown No. 1 box took commendably prompt action in sending the "Train Running Away" signal as soon as he heard the engine whistling, whilst Shaw's action in accepting the train up to the Victoria Millgate home signals, with the main line trailing junction ahead blocked by the Ashton Moss freight train, was in accordance with the instructions, which permit such acceptance, when the facing junction is set from the Up South to the Terminal Station and the line is clear as far as Cheetham Hill Road bridge.

14. If Mr. Pickup, the Chief Controller, had realised or ascertained that the train consisted of loaded petrol tanks and had ordered an assistant engine the accident might not have occurred, but, in the circumstances prevailing at the time, when an accumulation of priority coal traffic had to be handled urgently, it is perhaps excusable that particulars of the train load card were not further checked, especially as the running of loaded petrol tanks to Eccles was quite unusual.

REMARKS

15. The circumstances of this accident have shown that the instructions regarding working loaded petrol trains down inclines require clarification. Although the Divisional Operating Manager had issued instructions to Chief Controllers that an assistant engine must be provided for a loaded petrol train, similar instructions were not issued to the running shed staff. Driver Brewin, consequently, was placed in the difficult position of deciding on his own initiative, whether his engine was capable of controlling the load. This feature has been recognised by the Chief Regional Officer and the following amendment to the Working Time Tables was issued on 7th February, 1948:—

" General Instructions for Working Down Inclines.

AMENDED italic note to first paragraph :—

Hand brakes of tank wagons loaded with spirit must not be pinned down for braking purposes on inclines. Where in the case of trains conveying tank wagons containing spirit sufficient brake power would not be available on those sections of the line where these instructions apply without using the hand brakes of the tank wagons, additional brake power must be afforded by the provision of an assistant engine attached to the front of the train."

Although instructions now require an assistant engine to be provided *when necessary*, it is still left to the driver to decide whether or not this assistance is required. Unlike the procedure (set out in the Appendix) applicable to normal freight trains, there is no practical means of deciding this, and consequently, the danger of a runaway due to an error of judgement still exists. The risk can be reduced, however, either by providing an assistant engine in *all* cases, or by lifting the ban on pinning down brakes. I have discussed this with the Chief Operating Manager and I understand that the embargo is enforced only in the London Midland Region. It is for consideration whether there are any special conditions in this Region which justify the retention of this restriction.

I have the honour to be, Sir,

Your obedient Servant,

C. A. LANGLEY,

Brigadier.

The Secretary,
Ministry of Transport.

APPENDIX

Extract from General Appendix to the Working Time Tables.

"GENERAL INSTRUCTIONS FOR WORKING DOWN INCLINES."

(The letters AWB in the Loading Tables indicate where these instructions apply).

1. When it is necessary to apply wagon brakes to assist in controlling a train, the train must be brought to a stand before proceeding on to the heavy gradient, or in the cases of the places shown below, the train must be brought to a stand at the point named ; and the fireman must apply sufficient wagon brakes near the engine and the guard or guards at the rear of the train. The train must then be drawn slowly on to the incline, and the guard, or guards, must continue to apply as many more brakes as may be necessary until the whole of the vehicles are on the heavy gradient. When the driver feels that a sufficient number of brakes have been applied, he must give two short sharp whistles to indicate that he is satisfied sufficient brake power is available to properly control the train, and to stop it at any point on the incline, should it be necessary to do so, but the guard in charge will be jointly responsible with the driver for working the train safely down the incline. Should a train be worked by two engines in front, the whistles to indicate that sufficient brake power has been applied must be given by the driver of the leading engine, after exchanging hand signals with the driver of the second engine.

2. The driver must use steam to draw the whole of the train on to the incline in order to be satisfied that sufficient wagon brakes have been applied, and must not give the two whistles referred to in clause 1 until the whole of the train is on the heavy gradient.

3. The engine and van brakes must be off when the train is being drawn on to the incline, and be held as reserve brake power for use in emergency.

4. When the guard has rejoined his brake van he must exhibit a green hand signal to the driver to indicate that the train can go right away, and the driver must acknowledge the same by a short whistle. The train must not start right away until these signals have been exchanged.

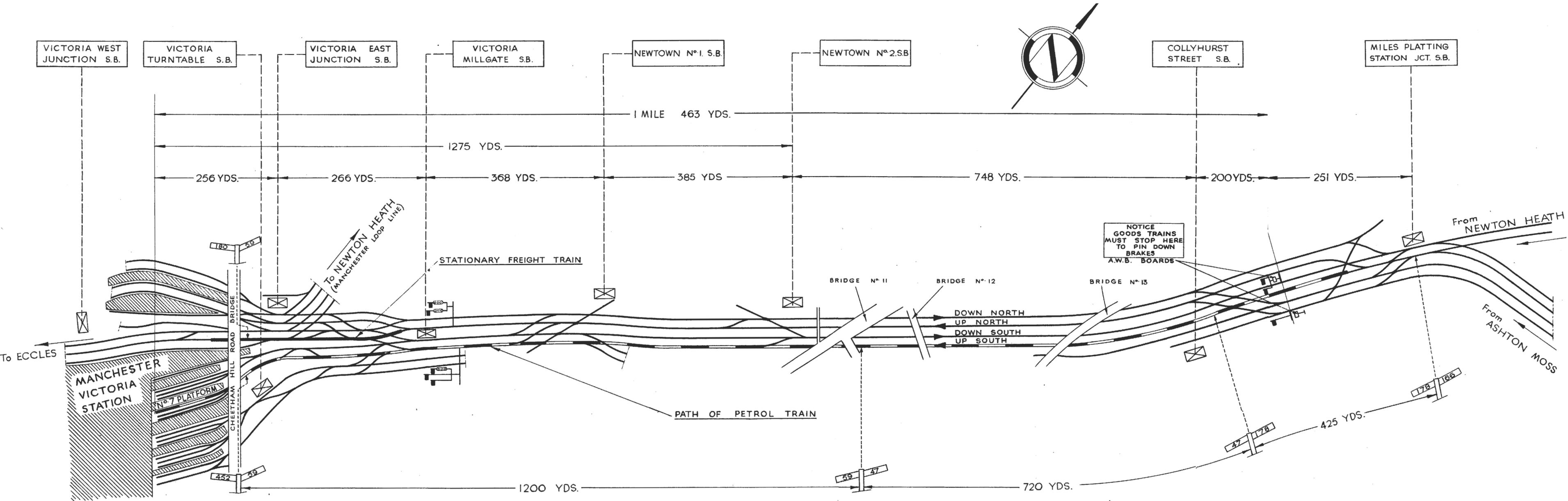
5. The guard must watch the speed of the train while descending the incline, and, if necessary, assist the driver to keep the train under control.

6. When a train has to attach wagons from a siding situated on an incline, a sufficient number of wagon brakes must be applied before removing the wagons from the siding, and the guard or shunter must accompany the wagons from the siding to the running line, and apply additional brakes, if necessary, to ensure the wagons being kept under complete control. When the wagons have been attached to the train, the instructions in clauses 1 and 3 must be strictly observed.

7. The driver must stop his train at the foot of the incline or where it may be necessary, and the fireman and guard, or guards, must release the wagon brakes.

Principal falling gradients at which notice boards are provided to indicate the point at which all freight trains must be brought to a stand for brakes to be applied :—

From.	Towards.	Distance Miles.	Gradients.
Miles Platting.	Victoria.	1½	1 in 47 and 59



L. M. & S. R.

COLLISION AT MANCHESTER (VICTORIA).

10TH. DECEMBER 1947.

DIAGRAM NOT TO SCALE.

RELEVANT UP MAIN SIGNALS ONLY SHEWN