RAILWAY ACCIDENT

Report on the Derailment that occurred on 24th June 1984 at Morpeth

IN THE
EASTERN REGION
OF BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE
Sir,

I have the honour to report for the information of the Secretary of State, in accordance with the Direction dated 24th July 1947, the results of my Inquiry into the high-speed overrunning derailment that occurred about 40 minutes after midnight on the morning of Sunday, 24th June 1947, on the Up line on the Morpeth Curve some 16 miles north of Newcastle upon Tyne in the Eastern Region of British Railways.

The train was a locomotive-hauled Aberdeen to Kings Cross sleeping-car train which comprised seven modern Mk III sleeping cars with two bogie brake vans, placed at each end of the train. It was running at speed under clear signals at the approach to Morpeth. The Morpeth Curve is of some 13 miles radius (253 metres). From the north, the curve is left-handed and commences within the length of Morpeth Station platform. The maximum permitted speed around the curve at a point about 85 and 90 miles/h and overtook shortly afterwards. The driver, who suffered a bad cut over his left eye, a broken collar bone and a badly lacerated leg, later remembered nothing of the accident.

The first vehicles to overtake were probably the leading two sleeping cars and the coupling between them parted. The leading car remained coupled to the van and locomotive causing them to overtake too. The second sleeping car led the remainder of the train on a tangential curve across the Down line and into a group of bungalows, two of which were badly damaged. All the coaches were on the sides of the sleepers, except the rear sleeping car and a van which remained upright although both were derailed.

The emergency services were quickly called by local residents who were broken by the crash and who turned out with torches, ladders and ladders to break the sleeping-car windows, and gave immediate assistance to passengers in the train, which was already beginning to assemble to start work after the train had passed. Assistance was given immediate assistance.

The accident was the third at Morpeth in living memory. The first, in 1926, was the result of a malicious act of vandalism. The second, due to excessive speed, occurred on the Down line on 28th May 1966, also to a sleeping-car train, caused six deaths and 21 injuries, of which 19 were serious. It is a measure of the excellence of the design of the current Mk III sleeping car of the present type which was killed in the latest accident, and of the 29 passengers and 6 train crew taken to hospital with injuries, all the passengers and 1 of the crew were discharged after treatment; only the driver and 2 sleeping-car attendants were detained with more serious injuries.

The derailment not only destroyed both lines, but all communications between Morpeth and the South were also cut. However, the Down line was closed to traffic for engineering maintenance purposes North of Morpeth and no other train was signalled at the time. Breakdown cranes and difficulty raising the locomotive because it was embedded in a bank, but the Down line was restored to traffic at 14.30, and the Up line at 16.30, on 26th June, with restrictions of speed to 10 miles/h. In the meantime trains were routed via the Blyth and Tyne lines which bypass the scene of the derailment.

At the time of the accident it was dark but it was a clear and warm night.

DESCRIPTION

Location and Signalling
1. Figure 2 at the back of this report illustrates the Up line from Berwick upon Tweed at 65 miles 78 chains up to the Morpeth Curve at 16 miles 50 chains. Mileages are from Newcastle. The maximum permitted speed on the north as far as Alnwick is 125 miles/h with the many permanent restrictions of speed as shown but thereafter it is reduced to 90 miles/h. After passing over the viaducts at Alnwick where the speed is 80 miles/h, the line speed is 90 for 2 miles, 80 for 2 miles reducing to 65 for half a mile until the Southside Curve. Thereafter the line speed is 80 for half a mile and then 100 miles/h for 4 miles until the Up and Down loops and crossovers at Chewingstone are passed. The speed is thereafter 90 miles/h for 2 miles to Widdington Level Crossing where the
SIR,

I have the honour to report for the information of the Secretary of State, in accordance with the direction dated 4th July 1964, the results of my inquiry into the high-speed overrunning derailment that occurred 40 minutes after midnight on the morning of Sunday, 26th June 1964 on the Up line on the Morpeth Curve some 16 miles north of Newcastle upon Tyne in the Eastern Region of British Railways.

The train was a locomotive-hauled Aberdeen to Kings Cross sleeping-car train which comprised seven modern Mk III sleeping cars with two bogie brake vans, one at each end of the train. It was running at speed under clear signals as it approached Morpeth. The Morpeth Curve is of some 1/2 miles radius (285 metres). From the north, the curve is left-handed and commences within the length of Morpeth Station platform. The maximum permitted speed around it is 50 mph by the train entered the curve at a speed of between 85 and 90 mile/h and overturned shortly afterwards. The driver, who suffered a bad cut over his left eye, a broken collar bone and a badly lacerated leg, later remembered nothing of the accident.

The first vehicles to overturn were probably the leading two sleeping cars and the coupling between them parted. The leading car remained coupled to the van and locomotive causing them to overturn too. The locomotive came to rest on its off-side against a bank having crossed over the Down line, which it destroyed, and the two vehicles following it jack-knifed behind it and came to rest on their sides across both lines completely blocking the railway.

The second sleeping car led the remainder of the train on a tangential course across the Down line and into a group of bungalows, two of which were badly damaged. All the coaches were on their off-sides except the rear sleeping car and van which remained upright although both were derailed.

The emergency services were quickly called by local residents who were whipped by the crash and who turned out with torches, ladders and hammers to break the sleeping-car windows, and gave immediate assistance to passengers in the train, a civil engineers' gang which was already beginning to assemble to start work after the train had passed also gave immediate assistance.

The accident was the third at Morpeth in living memory. The first, in 1926, was the result of a malicious act of vandalism. The second, due to excessive speed, which occurred on the Down line on 7th May 1925, also to a sleeping-car train, caused six deaths and 21 injuries, of which 19 were serious. It is a measure of the excellence of the design of the current Mk III sleeping car that not a single person was killed in this latest accident, and of the 29 passengers and 6 train crew taken to hospital with injuries, all the passengers and 3 of the crew were discharged after treatment; only the driver and 2 sleeping-car attendants were detained with more serious injuries.

The derailment not only destroyed both lines, but all communications between Morpeth Signal Box and the South were also cut; however, the Down line was closed to traffic for engineering maintenance purposes North of Morpeth and no other train was signalled at the time. Breakdown cranes had difficulty raising the locomotive because it was embedded in a bank, but the Down line was restored to traffic at 14:30, and the Up line at 16:30, on 26th June, with restrictions of speed to 10 mile/h. In the meantime trains were routed via the Blyth and Tyne lines which bypass the scene of the derailment.

At the time of the accident it was dark but it was a clear and warm night.

DESCRIPTION

Layout and Signalling

1. Figure 2 at the back of this report illustrates the Up line from Berwick upon Tweed at 65 miles 78 chains up to the Morpeth Curve at 16 miles 50 chains. Mileages are from Newcastle. The maximum line speed from the north as far as Alnwick is 125 mile/h with the many permanent restrictions of speed as shown, but thereafter it is reduced to 100 mile/h. After passing over the viaduct at Alnwick, where the speed is 80 mile/h, the line speed is 90 for 2 miles, 80 for 2 1/2 miles reducing to 65 for half a mile around the Southside Curve, 80 for half a mile and then 100 mile/h for 42 miles until the Up and Down loops and crossovers at Chevington are passed. The speed is thereafter 90 mile/h for 2 miles to Widdrington Level Crossing where the
speed increases to 100 mph for 5 miles past Longslie Level Crossing and Pegsdon Station. These were the permanent speed restrictions as shown in the Northern Area Sectional Appendix at the time.

2. Prior to 30th December 1967 the maximum line speed from Pegsdon was 80 mph reducing to 70 mph at 18 miles 16 chains to the viaduct, and then to 60 mph for the right-hand Morpeth North Curve, and 40 mph for the left-hand main Morpeth Curve. On that date the line speed was increased to 100 mph reducing to 80 mph at 17 miles 61 chains to pass over the Morpeth North Curve, and finally to 90 mph around the main Morpeth North Curve where the man was increased from 41 to 114 mph to accommodate the increased speed.

3. The start of each change of line speed is marked by a yellow metal "cut-out" sign placed at the side of the line where it is easily seen by day and can be seen in a train's headlamps by night. But drivers are expected to know the line and its restrictions of speed to enable them to reduce speed in good time for each restriction.

4. The gradients approaching Morpeth from the north are somewhat undulating but are hardly noticed by the drivers of most trains. They are rising at 1 in 230 to 1 in 300 miles 50 chains approaching Wellingdon Level Crossing where they begin to fall at various gradients of between 1 in 230 to 1 in 690. The gradients approach the Butterton Bend with a 1 in 370 bend. The line then rises, with one short exception, firstly at gradients of 1 in 374 and 1 in 825, and then more steeply at gradients between 1 in 139 and 1 in 177 to near the 16th mile post where it falls at 1 in 272 for one mile approaching Morpeth Station where the line is nearly level.

5. The Morpeth Curve. On the Up line the Morpeth Curve begins at 16 miles 50 chains which is nearly at the centre of the platform. The 50 mph line restriction at "cut-out" sign is mounted at the foot of the northerly end platform ramp where it is clearly visible. The curve in all is 34.8 chains (700 m) long and consists of a transition curve 101 m long leading into a 385 m radius curve which extends for a further 77 m. There is then an intermediate curve 26 m long to a curve of 370 m radius which continues for 125 m. It then reduces over a transition curve 17 m long to 336 m radius which extends for 236 m where the final 144 m loop transition curve begins.

6. There is a rail lubricator 20 m beyond the start of the curve to lubricate the high rail and a continuous lubrication unit in the middle of the curve which is geographically lubricated, commences 4.7 m further on. The check rail was normally 50 mm from the low rail. The top of the south-end platform ramp is only 4.5 m beyond the start of the 385 m radius curve.

7. The following are the accurate measurements of rails of curvature were made and a reduced radius of 250 m was made as part of the 385 m radius of the curve using 14 mm on rail sides and 34 m on the platform ramp. The first signs of derailment were 41 m beyond the top of the ramp. Both rails in the Up and Down lines were co-planar and were held at 6 in. (150 mm). The track prior to the curve was laid in 110A Rb. FB continuous welded rail on concrete sleepers, but at the time of the accident the Up line throughout the curve was in 83B dual-head jointed rail secured by steel bands on timber sleepers spaced 38 in 60 feet 61 rail length. Figure 1 illustrates the curves and the position of the locomotive after the derailment and the baulks that were damaged.

8. The Signalling and "Morpeth" Warning

7. Trains are signalled under the track-circuit block regulations: signals are controlled from Morpeth Signal Box which stands beside the Up line some 260 m north of the station. The signal box has a single "block-circuit" panel on which a red or green light is indicated by signals at the high rail or a red light of the position of a train by a red or yellow light and the details of the speed by a yellow or red light. Signal aspects are also indicated by signals at adjacent signal box or bell signal. These boxes are Shantungon some 2 miles to the south and Cheltenham some 9 miles to the north. The lines are standard gauge, and railway telephones, there is a GRP telephone on the signal box and the next signal box at the southern end of the line.

8. Signals are 4 aspect colour-light equipped with the automatic warning system (AWS). AWS consists of a permanent magnet placed in the door which is in the approach area to each signal. When the display is a blue or green light, the signal is clear and no driver action is necessary. The signal then automatically de-energises after 15 seconds and the signal will eventually stop. When the display is a yellow or red light, the signal is clear and the driver must then action the signal to proceed. The green and red lights being set to warn the driver of the approach to a signal where the train is clear of the track.

9. Colonel Robertson, in his report into the 1968 accident, concluded that the driver had relaxed his customary precautions and had failed to reduce his train's speed suitably to negotiate the Morpeth Curve. His conclusion was based on the use of an AWS permanent magnet placed in the path of the train and that the magnetic field of the AWS permanent magnet was not sufficiently strong to produce an approach to an illuminated permanent speed restriction sign to be noticeable, not at the commencement of the restriction itself, but at the point from which a driver would have to begin braking his train suitably to reduce its speed. This was introduced and has become known as the "Morphet Warning" or an "Automatic Warning Indicator".

10. The locomotive was designed with a low-profile which enabled the driver to see passing "cut-out" restriction of speed. The cabs of all Class 47 locomotives are fitted with AWS equipment (See Paragraph 9). Each driver position also has a "Driver's Safety Device" (DSD), consisting of a foot pedal which has to be continuously depressed. Releasing the DSD causes the brakes to be automatically applied. The cabs of High Speed Trains have also been furnished with an alternative facility termed a "Vigilance Device" by which a pedal has to be depressed at regular intervals. Failure to do so starts an alarm and failure to then react applies the brakes. Class 47 locomotives, however, are not so fitted. The cab instruments (brake handles, speedometer, etc.) are internally electrically fitted with a control switch on the panel. The cab have air-conditioning as well as an electric footwarmer. At the rear of the cab there is a window-opening door at each side and forward of these a window with a sliding opening section.

11. The locomotive weighed 120 tonnes and had a brake force of 85,900 lb or 102 tonnes. Its maximum permitted speed was 95 mph. It was 184 m long overall and its estimated centre of gravity, considering the quantity of fuel, was probably on board at the time of the accident, was 1440 mm above rail level. Coupled stock 4. The Brake Van Corridor weighing 32 tonnes, and 18.47 m long overall. Its centre of gravity was quite low. The seven sleeping cars were all Mk III which are of two types. Each have two lavatories, and either 13 sleeping compartments or 12 compartments and an attendant's pantry. The corridor taper slightly towards the ends but are about 3.45 m wide (11 ft 8 in) at wall level. There are about 3.66 m (12 foot) on the corridor which are held open against springs when released. The corridor is automatically closed. The main access doors are at the ends of the corridor on the sides. Each sleeping compartment has a fixed window and there are five windows in the length of the corridor, all of which are glazed. A hammer for breaking windows in an emergency is mounted in a case beside the passenger alarm in each sleeping compartment, together with a suitable notice for its use.

12. The sleeping cars are of integral steel construction without separate under-frames, and are carried on BT 10 bogies which incorporate air-brake suspension giving them a very smooth and quiet ride. The cars are also fully air-conditioned by equipment mounted beneath the floor level. The coaches weigh 45.4 tonnes, are 25 m long overall, and are designed to run at 110 mph. Their estimated speed is 44.5 mph. They are fixed window and have water tanks full of 1600 mm above rail level. A further Brake Van Corridor was coupled at the rear of the train.

13. The Corridor of the Derailment and Accident Damage

14. As shown in Figure 1, the point of initial derailment was easily identified at 16 miles 940 yards which is 41 m beyond the top of the south-end Morpeth Station platform ramp. (See Paragraph 40). The Up line was not at all damaged up to this point and for a distance of 5.5 miles below it, and thereafter, though damaged for a length of 0.5 miles downhill, the track was still in use. The Down line, however, was deranged for a length of 144 m commencing 9 m south of the point of derailment on the Up line. One rail was thrown out of the Down line and across the Up line and lay up the bank beside the Up line, end, of the end of the corridor in a garden in a house at the top, behind a telephone and run over their roofs into the roadway beyond them; roof tiles, windows and doors were damaged.

15. The locomotive came to rest on its 'Off side' against the side of the cottage and 7 m clear of the Down line. Its rear cab was stove in but the leading cab suffered little damage. The leading van and first sleeping car (Coach G) jack-knifed across both tracks between the two cutting slides. (See Photograph B).

16. The second sleeping car (Coach F) broke away from the car ahead of it and followed a path almost tangential to the track at the point of derailment. It came to rest about one third of its length embedded in an incorporated bedroom of a timber-framed building in a cottage. The building was 188 m from the point of derailment. The following buildings were very close to the building and were damaged by the momentum of the following Coaches D to B, breaking the back of the sleeping car and severely damaging this building too.
speed increases to 100 mph for 5 miles past Longhirst Level Crossing and Pegsdon Station. These were the permanent speed restrictions as shown in the Northern Area Sectional Appendix at the time.

2. Prior to 30th December 1997 the maximum line speed from Pegsdon had been 80 mph reducing to 70 mph at 11 miles 16 chains to the viaduct, and then to 60 mph over the right-hand Morpeth North Curve, and to 40 mph on the left-hand main Morpeth Curve. On that date the line speed was increased to 100 mph reducing to 80 mph at 17 miles 61 chains to pass over the Morpeth North Curve, and finally to 60 mph around the main Morpeth North curve and the limit was increased from 41 mph to 150 mph to accommodate the increased speed.

3. The start of each change of line speed is marked by a yellow label "cut-out" sign placed at the side of the line where it is easily seen by day and can be seen in a train's headlightst by night. But drivers are expected to know the line and its restrictions of speed to enable them to reduce their speed in good time for each restriction.

4. The gradients approaching Morpeth from the north are somewhat unhelpful but are hardly noticed by the drivers of most trains. They are rising at 1 mile 550 to 25 miles 50 chains approaching Widdrington Level Crossing where they begin to fall at various gradients of between 1 in 175 to 1 in 825, approaching the Butterley Tunnel at 1 in 500. The line then rises, with one short, gentle, at first, and then steeply at gradients of between 1 in 361 and 1 in 295, and more steeply at gradients of 1 in 199 and 1 in 157 to near the 16 mile post where it falls in 1 mile 273 for one mile approaching Morpeth Station where the line is nearly level.

5. The Morpeth Curve. On the Up line the Morpeth Curve begins at 16 miles 50 chains which is nearly at the centre of the platform. The 50 mph speed restriction "cut-out" sign is mounted at the foot of the northern platform ramp where it is clearly visible. The curve in all is 34 chains (760 m) long and consists of a transition curve 101 m long leading into a 285 m radius curve which extends for a further 77 m. There is then a transition curve 26 m long to a curve of 370 m radius which continues for 125 m. It then reduces over a transition curve 17 m long to 356 m radius which extends for 216 m where the final 164 m long transition curve begins.

6. There is a rail lubrication 20 m beyond the start of the curve to lubricate the high rail and a continuous drainage channel through the centre of the signal box. The box is of the type fitted with all signals are controlled by a red "stop" signal and a yellow "take" signal. Signals are also mounted at all changes of speed at the end of the transition curve and at the end of the platform ramp. The external signals are 4 aspect colour light equipped with the automatic warning system (AWS).

The Signalling and Morpeth: Warning

7. Trains are signalled under the track-circuit block regulations: signals are controlled from Morpeth Station from a signal box which sits beside the Up line some 240 m north of the station. The signal box has a small "take-as" panel on which a route is shown when set, is indicated by a row of white lights and the position of a train by a row of red lights. Signal aspects are also included but trains are signalled by adjacent signal boxes by bell signal. These boxes are situated some 2 miles to the south and Chevington some 5 miles to the north. In addition, the block, signal and railway telephone, there is a GPO telephone on the signal box's adjacent to the signal panel.

8. Signals are 4 aspect colour light equipped with the automatic warning system (AWS). AWS consists of primary magnets placed on the footplate of the point to the approach side of each signal. When the signal is displaying a display of a "stop" or a "caution" signal, the magnets cause a horn to sound in the driver's cab and the warning is shown on an indicator. If the driver does not acknowledge this warning, the magnets automatically applied for about 8 seconds and the train will eventually stop. When the signal is displaying a green aspect however, an electromagnet is used to cancel the permanent magnet's signal and rings a bell in the cab. Acknowledgement of the bell is not required.

9. Colonel Robertson, in his report into the 1989 accident, concluded that the driver had relaxed his customary control and had failed to reduce his train line speed sufficiently to negotiate the Morpeth Curve. This was due to the use of an AWS permanent magnet to be placed magnetically further from the point of a station. The lower the height of an AWS permanent magnet, the further from the point of a station. The lower the height of an AWS permanent magnet, the further from the point of a station.
17. All the cases so far mentioned came to rest on their off-sides. Couches F, D and B had their sleeping compartments windows uppermost and their corridors against the ground, but with Couches G, E and C, the situation was reversed and the corridors were uppermost. The leading end of Coach D which had veered off course and driven the rear end of Coach E ahead of it around the house, had parted from it, and there was access from these ends of both coaches. Couch A and the van behind it remained upright although derailed.

18. Although the off-sides of the overturned coaches were badly scored, surprisingly the internal accommodation was hardly damaged and few of the double glazed windows were broken in the accident; they were later broken by rescuers, as were the locomotive's windscreen. A noteworthy aspect of the derailment was that all the bogies of Coaches F to B came to rest on the Up Main Line by Couch A, indicating that all five coaches had derailed and lost their bogies in a similar manner as they left the track in the same area as each other.

19. The signalling and telecommunications equipment was little damaged except that the main cables carried in trenching beside the Down Main Line were destroyed over a considerable distance, and some signal was destroyed.

20. Although the locomotive had a maximum permitted speed of 95 mile/h, the sleeping-car train was scheduled for an average speed of 80 mile/h for the comfort of passengers to which could be added a 4-minute allowance for temporary restrictions of speed between Edinburgh and Newcastle, of which there was none on the night of the accident. The Schedule could therefore be adhered to at an average speed of about 76 mile/h.

EVIDENCE—PART I

Foreword

21. On 13th July, prior to my Inquiry which I opened in Newcastle upon Tyne on 17th July, I received a verbal request from the Director of Public Prosecutions via the Department of Transport's Legal Advisor, that I should adjourn my Inquiry before taking evidence from the driver of the train, Driver Allan, and associated witnesses. This I agreed to do. Part I of this report, therefore, covers the evidence of witnesses as to the facts of the derailment and my conclusions, and Part II the subsequent enquiries, including matters concerning Driver Allan's trial.

As to the Running of the Train and the Derailment

22. The Signalman at Morpeth at the time of the accident was Relief Signalman J. Earle. He had come on duty at 21.00 on the Saturday evening and was awaiting the passage of train 1E48 which was the last train due to pass that night. Following its passage, all trains were to be diverted onto the Byth and Tyne Line so as to enable the civil engineering work to commence on the Up line and within the length of the platform. One member of the civil engineer's gang was in the box awaiting Earle's authority to commence work.

23. Signalman Earle acknowledged the bell signal from Chevington as 1E48 passed that box at 00.31 and he immediately described the train on to Stanhope. He then lowered the level crossing barriers at Longhirst, set the route and cleared all his signals in good time for the train to pass. The train passed his box at 00.39, which, in his view, did not indicate that the train had been speeding; many passenger trains took only 8 minutes over this section.

24. He was sitting in his chair with the signalling panel between himself and the railway, when the train passed, and had been a signalman for 27 years and had served at Morpeth for over 5 years, and had no conception that the train might have been speeding as it passed. Very soon afterwards the power to the south of his box failed but he assumed, at first, that it was only a power failure. He heard no sound of the derailment from his box, probably because it occurred around the curve and behind the station buildings; but at about 00:42 the guard telephoned him from the station and told him what had happened.

25. He immediately sent the emergency alarm signal to Stanhope, which was not acknowledged. He replaced signal M148 protecting Longhirst Crossing to Danger and placed a reminder collar on its operating button. He was not similarly able to protect his Down line but the line had been cut for engineering works and no train was signalled. After warning the signalman at Chevington and Alnemouth he called the emergency services on his GPO telephone at 00.45.

26. The guard in charge of 1E48 was Guard W. G. Brown. He had taken up duty at Edinburgh (Waverley) at 22.30 and at about 22.50 had met his driver on Platform 1 although, at that time, he did not know his name. When they realised they were working the same train Brown told the driver that he would see him later. When the train arrived at Aberdeen he went to his van to collect the train consist; then walked to the front of the train to tell his driver the composition of the train and that the first stop was to be Newcastle.
17. All the cars so far mentioned came to rest on their off-sides. Couches F, D and B had their sleeping compartment windows uppermost and their corridors against the ground, but with Couches G, E and C, the situation was reversed and the corridors were uppermost. The leading end of Coach D which had veered off course and driven the rear end of Coach E ahead of it around the house, had parted from it, and there was access from these ends of both coaches. Coach A and the van behind it remained upright although derailed.

18. Although the off-sides of the overturned coaches were badly scored, surprisingly the internal accommodation was hardly damaged and few of the double glazed windows were broken in the accident; they were later broken by rescuers, as were the locomotive's windscreen. A noteworthy aspect of the derailment was that all the ten bogies of Coaches F to B came to rest on the Up Main Line by Coach A, indicating that all five coaches had derailed and lost their bogies in a similar manner as they left the track in the same area as each other.

19. The signalling and telecommunications equipment was little damaged except that the main cables carried in trenching beside the Down Main line were destroyed over a considerable distance, and one signal was destroyed.

20. Although the locomotive had a maximum permitted speed of 95 mile/h, the sleeping-car train was scheduled for an average speed of 80 mile/h for the comfort of passengers to which could be added a 4-minute allowance for temporary restrictions of speed between Edinburgh and Newcastle, of which there was none on the night of the accident. The Schedule could therefore be adhered to at an average speed of about 76 mile/h.

EVIDENCE—PART I

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As to the Running of the Train and the Derailment

22. The Signalman at Morpeth at the time of the accident was Relief Signalman J. Earl. He had come on duty at 21.00 on the Saturday evening and was awaiting the passage of train 1E48 which was the last train due to pass that night. Following its passage, all trains were to be diverted onto the Bithyn and Tyne Line to enable another civil engineering work to commence on the Up line and within it from the rear and the length of the platform. One member of the civil engineer's gang was in the box awaiting Earl's authority to commence work.

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26. The guard in charge of 1E48 was Guard W. G. Brown. He had taken up duty at Edinburgh (Waverley) at 02.30 and at about 02.50 had met his driver on Platform 1 although, at that time, he did not know his name. When they realised they were working the same train Brown told the driver that he would see him later. When the train arrived at Aberdeen he went to his van to collect the train list; then walked to the front of the train to tell his driver the composition of the train and that the first stop was to be Newcastle.
Brown told me that the leading brake van was empty. They did not do a brake test because the train had already been in service under another crew, and the train left, on time, at 03.25.

27. Guard Brown told me that he had stayed in his van at the rear of his train throughout the run to Morpeth, which was uneventful, and he had no feeling that the train might have been speeding. He had looked out the van windows just before the various stops and his readings indicated that the train was not speeding appreciably. He said that he was coupled throughout the train, and should have been working. He was reading a book a train as the approach where he saw the lights of the town approaching he became aware that the driver was not making the necessary brake application to slow the train, which seemed to be coasting. The gauge in his van confirmed his belief and he got up to apply the brake himself when there was a loud bang and he was thrown forcibly forward.

28. The train soon came to a stand, so he picked up his lamp and got out. On seeing people coming out of their houses beside the Up line he climbed up the side of the cutting towards some garden fences and asked a local resident to call the emergency services, which he did. Brown then returned to the signal box but the lights were off at the station where there were some farmers. He also had misread the signals from there to tell him what had happened. He then returned to his train to continue to assist passengers.

29. Guard’s Inspector R. Simpson also joined the train at Edinburgh. He spent the first ten minutes of the journey with the guard and then proceeded to check the sleeping car attendants. Having done this he went into 6E to write his check sheet where he opened the blind and saw that the train was passing Tweedmouth. He told me that the journey to Morpeth was uneventful and normal and that there were no noticeable brake applications. When approaching Morpeth, however, he was held against the side of the coach by centrifugal force until the coach rolled over and finally came to a stand. He managed to climb out of his compartment door, which was above his head and crawled along the corridor and out at the rear end of the coach. He found himself in the garden where a local resident told him that the emergency services had been called. He was then joined in the general rescue operations until the fire brigade arrived.

30. Several passengers have written to me concerning their experiences in the derailment. Some thought that the train had been travelling far too fast and that others had had different experiences. In particular, Mr. A. Barker, who was the Marketing Manager of the Scottish Road Safety Organisation, told me that his regular travel in the car and was confident that there was some movement of the coach which was rather alarming. He had been called to the scene the day after the accident to examine the site. Some of the firemen arrived some 48 hours later. He had not noticed the hammer in his compartment, nor any emergency instructions there.

31. On the morning of 16th July I called on Chief Fire Officer D. McNeil at Morpeth Fire Brigade Headquarters. He described how his men had been rescued from the carriage by local residents and passengers and the difficulty they had experienced in getting into the coaches which had their windows broke. The firemen had managed to get into the coach, which was Mr. Mee’s car and Mr. Mee gave him. After getting through one of the three central corridor windows, his men were in an 18 in. high space with the locked doors below them. The keys with which they had been provided would not fit the doors and there was insufficient room to use crowbars. Finally, their own cutting equipment was capable of cutting through the roof of the coaches.

32. Sub Officer W. E. Crossman of Cranleigh Fire Brigade had reported that he had arrived on the scene at 08.10 after being called at 00.41. He detailed three men to set up some lighting while he and a fireman rescued five people from the leading sleeping car. He then went to the locomotive’s driving cab where he found the driver being supported by two people. He maneuvered himself to the driver’s seat to discover how badly he had been hurt but a doctor very soon arrived. To the best of his knowledge he did not come into contact with any of the driving controls.

33. I called on the doctor, Dr. A. S. Cunningham on the afternoon of 16th July, and asked him to describe how he got to the driver’s side. Photograph B shows the locomotive on its side. Dr. Cunningham told me that those who had attended the driver had got in through the lower (left) broken window from the inside, and that the driver had fallen from his chair and was sitting across the side of the cab with his hands on the side of the locomotive. The driver was conscious and conscious of his requests to move his limbs. Although he was close beside him he did not notice any smell of alcohol on his breath. After detaching that the driver could be moved, the firemen and others took him out of the top window and onto a stretcher.

34. Early on the morning of Tuesday, 17th July I travelled in the driving cab on the same service having joined it at Berwick upon Tweed; it had been delayed earlier and was running some 40 minutes late. My train was hauled by a similar Class 7 locomotive which was also fitted with a headlight (the light on locomotive 47 452 can be seen in Photograph B). The accident occurred on a Sunday morning when the lights at stations at which trains do not stop would not have been extinguished, whereas on the Tuesday morning they were still lit, this included Pegswood and Morpeth Stations.

35. I noticed that the yellow speed restriction signs were clearly visible in the train’s headlight as they passed which gave the driver a good indication of whereabouts. The cab instrument lights were turned on and the speedometer was also very easy to see. We crossed the river at Sunthelshott with the town lights beyond, followed by Wooden Gauge Level Crossing, and pasted the lights of Warkworth town. The lights of Warkworth Automatic Half-Barrier Level Crossing, followed by the lights of Morpeth town, were clearly visible. Then followed the 100 mph sign, the bright lights of Longhirst level crossing, and the 80 mph sign as we approached the viaduct which was also clearly visible. The bright lights of Morpeth town then came into view and we passed over the crossovers and ran alongside long lines, under a bridge, passing the 70 mile/h sign, the red position-light signal at the end of the Up loop to our left, and Morpeth Level Crossing; this was very easily seen, with many houses and street lights including a row of bright yellow lamps on our right. After passing under another bridge we then saw the lights of Morpeth Signal Box on our left.

36. Shortly after midnight on the morning of 24th June when I was 15 years old, Leading Fireman W. M. Brown was acting as lookout man on a tamping machine on the Down line near Uplatham Grade Level Crossing, some 6 miles north of Morpeth. He saw the train’s headlight approaching when the train was about a quarter of a mile away. He sounded the machine’s warning signal and the driver sounded his horn as he passed.

As to the State of the Track.

37. Leading Fireman T. R. Air normally patrolled between Longhirst and Widdington, but on the 18th June he patrolled the Morpeth section of the line, taking the passenger train through the derailing point. In patrolling the track on Friday, 22nd June, he noted to loose fishplates, no missing keys, and no movement of base plates. The track drainage in the area was good and there were no remarks in his patrolman’s book that the track was other than in good condition. He did, however, notice oil contamination in the area of Morpeth Station platform from locomotive which had stopped there.

38. Permanent Way Supervisor J. D. McLauchlan, who was based at Morpeth, was responsible for the East Coast Line from Newcastle to Amble Junction, including the Ryne and Tyne Goods Line. Mr. McLauchlan told me that the high-speed track record had lost any trace over the curve on 10th April and the first track record on 24th May, and that this showed the track to be in excellent condition. He had last personally examined the Morpeth Curve on Friday, 25th May, when he had found nothing of any concern. He told me that the track was well formed and stood well to the traffic on it. He noted the oil spillage in the station and made plans to clean out the oily waste. The works were due to be done following the passage of the last train on the night of the accident and his men were due to report at Morpeth at 01.00.

39. At 01.00 on 24th June he called from Berwick where he was working, arrived at Morpeth at about 02.00, where he met Mr. Brodhead, and together they determined the point of first derailment and checked the track gauge and other levels for 40 miles to Berwick, the good sleepers on the approach side within 2 mm and the cant to within ±10.6 mm, which were well within working tolerances. Also checked to see if the speed restriction cut-out signs were present, which they were. They had been repositioned some time before the accident.

40. Mr. R. P. Brodhead, who was the Assistant to the Permanent Way Maintenance Engineer arrived at the scene of the derailment at 01.45 whilst the emergency services were still busy. After helping the Police set up an incident control room at the station, he joined Mr. McLauchlan in inspecting the track. The point of first derailment was easily seen extending for 3.6 m from 16 miles 940 yards to 16 miles 936 yards. (This is 1 m south of the top of the Up platform ramp). He told me that it was not noticeable that there was any matching mark or surface on the outside of the track, but on the sleepers near the derailment there was, however, very deep mark on the chair leg beyond the derailment mark on the outside of the rail. He confirmed that this was good gauge and that the largest cant variation was 4 mm. He inspected the track for 10.12 on the approach side of the point of derailment but could see no faults in it that could possibly have caused the derailment. He was categorical that the work of ballast replacement to clear wet and oily bases in the station area as planned by Mr. McLauchlin had not taken place. He confirmed that the track gauge on the Curve was consistently 6 mm wide, which is normal for this curvature and considering the age of the track.
Brown told me that the leading brake van was empty. They did not do a brake test because the train had already been in service under another crew, and the train left, on time, at 03.25.

27. Guard Brown told me that he had stayed in his van at the rear of his train throughout the run to Morpeth, which was uneventful, and that he had no feeling that the train might have been speeding. He had looked at the various instruments and readings indicating that the brakes were properly adjusted throughout the train and should be working. He was reading a book as the train approached Morpeth but when he saw the lights of the town approaching he became aware that the driver was not making the necessary brake application to slow the train which seemed to be coasting. The gauges in his van confirmed his belief and he got up to apply the brake himself when there was a loud bang and he was thrown violently forward.

28. The train soon came to a stand, so he picked up his lamp and got out. On seeing people coming out of the houses beside the Up line he climbed the side of the cutting towards some garden fences and asked a local resident to call the emergency services, which he agreed to do. Brown then returned towards the signal box and enquired the signal box at the station at which there were some lights on. He then asked the signalman from there to tell him what had happened. He then returned to his train to continue to assist passengers.

29. Guard's Inspector R. Simpson also joined the train at Edinburgh. He spent the first ten minutes of the journey with the guard and then proceeded to check the sleeping car attendants. Having done this he went into his room to write his check sheet where he opened the blind and saw that the train was passing Tweedmouth. He told me that the journey to Morpeth was uneventful and normal and that there were no noticeable brake applications. When approaching Morpeth, however, he was held against the side of the coach by centrifugal force until the coach rolled over and finally came to a stand. He managed to climb out of his compartment door which was above his head and crawled along the corridor and out at the rear end of the coach. He found himself in a garden where a local resident told him that the emergency services had been called. So he joined in the general rescue operations until the fire brigade arrived.

30. Several passengers have written to me concerning their experiences in the derailment. Some thought that the train had been travelling far faster than usual and others that it had been stopped. In particular, Mr. Mark Barker, who is the Marketing Manager of the Commonwealth Games (Scotland 1990) Organisation, told me he was on his way to the circuit by train, and it was on one of the booked journeys that he had noticed the signs. He was concerned about the movement of the coach which was pitching and rolling unusually for some 20 minutes prior to the accident and that his body was sliding up and down in his bed. He also told me that the coach was on a collision course with a truck.

31. After the derailment the coach was sent out of the track and crawled along the corridor in the same manner as Inspector Simpson and the other passengers. His body was clearly illustrated in the Photograph C which Mr. Mee gave me. After getting through one of the three central corridor windows, his men were in an 18 in. space. He had no chance as his body was under the tracks. We later heard his body was hit by the coach.

32. Sub Officer W. E. Crompton of Crumlin Fire Brigade had reported that he had arrived on the scene at 03.28 after being called at 03.24. He detailed three men to set up some lighting while he and a firefighter rescued five people from the leading sleeping car. He then went to the locomotive's driving cab where he found the driver being supported by two people. He manoeuvred himself to the driver's side to discover how badly he was hurt but the driver very soon arrived. To the best of his knowledge he did not come in contact with any of the driving controls.

33. I called on the doctor, Dr. J. A. Cunningham, on the afternoon of 21st July, and asked him to describe how he got to the driver's side. Photograph B shows the locomotive on the side. Dr. Cunningham told me that those who had attended the driver had got through the lower (left) broken window from the fire engine, and that the driver had fallen from his chair and was sitting on the side of the coach with his head by the fire. The driver was conscious and was asking to have his suit's collar cut to move his limbs. Although he was close beside him he did not notice any smell of alcohol on his breath. After deciding that the driver could be moved, the firemen and others took him out of the front window and onto a stretcher.

34. Early on the morning of Tuesday, 17th July I travelled in the driving cab on the same service having joined it at Berwick upon Tweed; it had been delayed earlier and was running some 60 minutes late. My train was hauled by a similar Class 57 locomotive which was also fitted with a headlight (the light on locomotive 47 452 can be seen in Photograph B). The accident occurred on a Sunday morning when the lights at stations at which trains did not stop would have been extinguished, whereas on the Tuesday morning they were still lit. I noticed that the yellow speed restriction signs were clearly visible in the train's headlight at the passed which gave the driver a good indication of their whereabouts. The cab instrument lights were turned on to ensure visibility and the speedometer was also very easily seen. We crossed the river at Alnmouth with the town lights beyond, followed by Wooden Canal Level Crossing, and passed the lights of Warkworth town. The lights of Warkworth Automatic Half Bar, Barrier Level Crossing, followed by the lights of Alnwick on the other side, were easily seen. Then followed the 100 mile/h sign, the bright lights of Longhirst Barrier Level Crossing, and the 80 mile/h sign as we approached the viaduct which was also clearly visible. The bright lights of Morpeth town then came into view and we passed over the crossovers and ran alongside long lines, under a bridge, passing the 70 mile/h sign, the red postbox signal at the end of the Up loop to our left, and Morpeth Level Crossing, which was very easily seen, with many houses and street lights including a row of bright yellow lamps on our right. After passing under another bridge we then saw the lights of Morpeth Signal Box on our left, then passed over the tracks, the barrier signal in Morpeth Station and had a good view of the 30 mile/h sign at the end of the Up platform.

36. Shortly after midnight on the morning of 24th June when I passed, Leading Trackman W. M. Brown was acting as lookout man on a tamping machine on the Down line near Upland Green Level Crossing, some 6 miles north of Morpeth. He saw the train's headlight approaching when the train was about a quarter of a mile away. He sounded the machine's warning siren and the driver sounded his horn as he passed.

As to the State of the Track.

37. Leading Trackman T. A. R. Air normally patrolled between Longhirst and Widdrington, but on the 18th June he patrolled the Morpeth section in place of the regular trackman. In patrolling the track on the evening of 20th June, he noted no fouled switch, no missing keys, and no movement of base plates. The track drainage in the area was good and there were no reports in his report of the weather. He not only exercised the points at all times but also checked the track drainage in the area. He had, however, noticed oil contamination in the area of Morpeth Signal Box platform from locomotives which had stopped there.

38. Permanent Way Supervisor J. D. McLaughlin, who was based at Morpeth, was responsible for the East Coast Line from Newcastle to Harrow, including the Bynt and Tyne Goods Line. Mr. McLaughlin told me that the high-speed track record had last passed over the curve on 10th April and the Matka track record on 24th May, and that both showed the track to be in excellent condition. He had last personally examined the Morpeth Curve on 25th May, and when he found nothing of any concern. He told me that the track was well formed and stood up well to the traffic on it. He noted the oil spillage and had made plans to clean up the oil in the water. The work was due to be done following the passage of the last train on the night of the accident and his men were due to report to Morpeth at 01.00.

39. At 01.00 on 24th June he was called from Belvoir where he was working; he arrived at Morpeth at about 02.00, where he met Mr. Broddle, and together they determined the point of the first derailment, and checked the track gauge. The track gauge was within 4000 mm of the correct gauge, and the correct gauge was only 2 mm and the coach to within 300 mm, which were well within working tolerances. He also checked to see that the speed restriction cut-off signs were present, which they were. They had been repaired some time before the accident.

40. Mr. R. P. Broddle, who was the Assistant to the Permanent Way Maintenance Engineer arrived at the scene of the derailment at 01.45 whilst the emergency services were still busy. After helping the Police set up an incident central room at the station, he joined Mr. McLaughlin in inspecting the track. The point of the first derailment was then easily seen extending for 3.6 m from 16 miles 940 yards to 16 miles 936 yards. From 16 miles 940 yards to 16 miles 936 yards (this is 41 m south of the top of the Up platform ramp), he told me that it was noticeable that there was no matching track or mark on the surface of the shock rail, but, on the sleepers between the rails, there was, however, a mark on the sleepers which indicated the derailment mark. He confirmed that the track gauge was good and that the largest base variation was 2.3 mm. He also examined the track to 12.0 m on the approach side of the point of derailment but could find no faults in it that could possibly have caused the derailment. He went on to say that the track was considered to be in good condition in the station area as planned by Mr. McLaughlin and had been in good condition. He confirmed that the track gauge on the Curve was consistently 4 mm to 6 mm wide, which is normal for this curvature and considering the age of the track.
41. He noted that the Up line was undamaged for some 5.5 m beyond the initial point of derailment but was badly damaged for 90 m thereafter, being virtually undamaged where the first two coaches lay across both lines. He also noted that the Down line was completely demolished for 147 m. He therefore started to arrange for the Up line to be reinstated using materials taken from sidings, to enable the breakdown crews to gain access to the site.

As to the Locomotive, its Controls and the train's brakes

42. Rolling Stock Engineer G. T. Proctor from Tyne and Wear arrived at the scene of the accident at 0210 and, following a short briefing, was asked to examine the locomotive's controls. He told me that there was no-one at the cab when he got there and he entered it through the broken-off side window which was close to the ground (which everyone seems to have done). Once inside, he had to climb up to the driver's chair, which was well above his head, using various items at the back of the cab as footholds. He then noted the controls as follows:

(a) The master key was 'inserted and unlocked' and the master switch was in the 'forward' position.

(b) The locomotive's air brake was fully released and the train brake was in the 'running' (i.e. not applied) position. (Both these brakes are on the left side of the driver's desk).

(c) The 'power control' was in the 'full power' position. This is on the right side of the desk, and Mr. Proctor suggested that the driver might have pulled it into this position with his right hand as he was thrown out of his seat.

(d) The FPS indicator was 'all black' as if the train had been running on clear signals.

(e) The A/S 'change over handles' were in the 'On' position (not in the 'Off' or 'Rear' cab) as they should have been, and the isolating handle in the engine room was in the working position and wired so as it should have been. He did not check the position of the D/S isolating cock.

(f) All gauges in the cab were reading zero.

(g) The brake selector switch was in the 'Passenger' position.

(h) The 'Control' and 'Lighting' circuit breakers in the engine room had tripped out—thus stopping the engine.

(i) There were no signs of the brakes having been violently applied as there would have been had an emergency brake application been made.

43. From the report book carried in the locomotive, he noted that the brake blocks had been changed on 11th and 18th June—one was noted of any AWS or D/S equipment fault having been reported. Mr. Proctor later examined the brake pipe connections throughout the train. They were all 'open' except for those at the rear of the train which were closed as they should have been, and except for some where the train had passed and where he could see the reason for them being moved in the derailment. All the train pipe connections were fit with safety handles as required.

44. He examined the trailing couplers of Coach G (E0059) which was still locked in the closed position. From the damage to it and the coach's tread plate he concluded that the coupling had parted after the sleeping cars were on their sides and had begun to 'jack-knife' from each other.

Assistant Engineer (Traction and Equipment) C. Wood examined the locomotive in Gateshead Depot on 28th June, after its recovery. He tested the brakes, the AWS equipment and the D/S equipment. He has made a full report from which it can be concluded that everything was in working order prior to the accident. In particular, the AWS and D/S equipment were still functioning and the brakes would have automatically applied 3 seconds after passing a magnet at a signal at 'Caution' (or an AWS). In the case of the D/S the brakes began to apply 5 seconds after its release. He noted that the speed on the D/S isolating cock was broken although the cock was correctly set in the 'open' position. There was no entry in the repair book as to why the seal was broken as there should have been.

46. The speedometers in both cabs of the locomotive were tested by Traction Maintenance Engineer M. Hayhoe on 27th June. Both were reading high as follows:

<table>
<thead>
<tr>
<th>Miles/h setting</th>
<th>No. 2 Cab (Leading)</th>
<th>No. 1 Cab (Rear)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>54</td>
<td>55</td>
</tr>
<tr>
<td>70</td>
<td>73</td>
<td>77</td>
</tr>
<tr>
<td>80</td>
<td>83</td>
<td>88</td>
</tr>
<tr>
<td>90</td>
<td>94</td>
<td>98</td>
</tr>
</tbody>
</table>

He explained that, as the speedometers measured the rotational speed of axles, their readings were dependent on wheel type wear; the normal tolerance was ±3%. Reading high, as they were, the train would have been travelling slower than 50 miles/h if the speedometer was reading 50 and hence the speedometer errors were 'false side'.

47. On 27th June, Mr. Hayhoe also examined the D/S pedal and its operating mechanism. In the leading No. 2 cab, it was found to be mechanically free and unobstructed. On 11th July, he carried out tests to measure its 'depression' and release leads, and also on a similar locomotive, No. 47426. The results were as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Depression Lead</th>
<th>Release Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>47426</td>
<td>23 lbs</td>
<td>15 lbs</td>
</tr>
<tr>
<td>47426</td>
<td>27 lbs</td>
<td>13 lbs</td>
</tr>
<tr>
<td>47426</td>
<td>30 lbs</td>
<td>11 lbs</td>
</tr>
</tbody>
</table>

In each case the leads were measured at the mid points of the pedals.

As to the Speed and Mechanism of Derailment

48. Mr. M. McLaughlin, a Principal Scientific Officer at the British Railways Board, Railway Technical Centre, Derby, was called to attend the derailment and arrived there shortly after 0830 on the morning.

Mr. McLaughlin had many years' experience in examining the results of derailments and in studying their causes.

49. He found that engineers on site had already identified the point of first derailment and had numbered the sleepers from it '7' in the direction of approach (i.e. towards the station) and '-7' beyond. It is noted that a number of wheel flanges had crossed the high level line and confirmed the change in level as being about 10 miles per hour. He counted at least five derailing marbles between sleeper 7 and 19, and confirmed that there were four corresponding marks on the outside edge of the rail, indicating that the left-hand wheels had lifted clear of the rail.

50. He also noted (at the time of the accident) that there was a small area of the outer edge of the rail head some 13 mm to 14 mm below the panel and 30 mm beyond the point of derailment and 8 m after this there was blue paint on the 'six-foot' rail of the Down line. He also noted that the track had been moved in the direction as shown in Figure 2a) for a period of 21 m prior to the point of derailment. He had only seen the track once before some 13 years previously when he witnessed some cabled controlled experiments. Therefore, the rail lubricator had been smeared over the gauge corner of the rail to some 18 m.

51. Damage marks to the concrete sleeper ends of the Down line began 15 m beyond the point of derailment and 8 m after this there was blue paint on the 'six-foot' rail of the Down line, indicating that a coach was on its side at this point. There were wheel marks on the check rail of the Up line commencing at sleeper 8 beyond the point of derailment and continuing over 6 sleepers following which there were marks of wheels having run derailed on the sleeper in the 'four foot'. He considered these to have been made by the last sleeping car in the train which had remained upright, with the van behind it.

52. From the above evidence he believed that the train had overturned quite quickly, beginning at a point some 18 m from the top of the platform ramp and that wheels had derailed some 21 m further on. He concluded that the first coaches to overturn were the first and second sleeping cars which had been derailed from each other. He thought that the leading sleeping car and the van behind it had caused the locomotive to over turn very soon afterwards and that the Down line, the very serious damage to the Down line, and the fact that all the bogies from the rear half of the train had been discarded by the overturning coaches in the same area, supported this view.

53. Mr. McLaughlin presented calculations carried out by Dr. R. A. Clark of his organisation. The calculations were based on an iterative process which considered over-rotating inertial forces which drove the vehicle body over onto its bump stops and the primary and secondary suspensions until, unless the remainder of the body was completely unloaded. The speeds at which this occurs, based on calculations of the centre of gravity and a curve radius of 260 m with 130 mm of cast, were as follows:

<table>
<thead>
<tr>
<th>Centre of gravity above rail level</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mm 11 Sleeping Car</td>
<td>1600 m</td>
</tr>
<tr>
<td>Class 47 Locomotive</td>
<td>1440 m</td>
</tr>
</tbody>
</table>

He had used the Radius of 260 m (instead of the design radius of 285 m) as being the average of a number of measurements taken after the accident at the point of derailment. A slight local tightening of the radius of
41. He noted that the Up line was undamaged for some 5.5 m beyond the initial point of derailment but was badly damaged for 90 m thereafter, being virtually undamaged where the first two coaches lay across both lines. He also noted that the Down line was completely demolished for 145 m. He therefore started to arrange for the Up line to be renovated using materials taken from sidings, to enable the breakdown crews to gain access to the site.

As to the Locomotive, its Controls and the train's brakes

42. Rolling Stock Engineer T. Proctor from Tyne and Wear arrived at the scene of the accident at 0210 and, following a short briefing, was asked to examine the locomotive's controls. He told me that there was no-one at the cab when he got there and he entered it through the broken off-side window which was close to the ground (which everyone seems to have done). Once inside, he had to climb up to the driver's chair, which was well above his head, using various items at the back of the cab as footholds. He then noted the controls as follows:

(a) The master key was 'inserted and unlocked' and the master switch was in the 'forward' position.
(b) The locomotive's air brake was fully released and the train brake was in the 'running' (i.e. not applied) position. (Both these brakes are on the left side of the driver's desk).
(c) The 'power control' was in the 'full power' position. This is on the right of the desk, and Mr. Proctor suggested that the driver might have pulled it into that position with his right hand as it was thrown out of his seat.
(d) The AWS indicator was 'all black' as if the train had been running on clear signals.
(e) The AWS 'change of hand' was shown as 'on' in the 'rear cab' position: as they should have been, and the isolated handle was in the engine room was in the working position and wire sealed as it should have been. It was noted that the position of the DSS isolating cock.
(f) All gauges in the cab were reading zero.
(g) The brake selector was shown in the 'passenger' position.
(h) The 'Control' and 'Lighting' circuit breakers in the engine room had tripped off—thus stopping the engine.

43. There were no signs of the brakes having been violently applied as would have been had an emergency brake application been made.

44. From the repair book carried in the locomotive, he noted that the brake blocks had been changed on 11th and 18th June—there was no mention of any AWS or DSS equipment fault having been reported. Mr. Proctor later examined the brake pipe cocks throughout the train. They were all 'open' except for those at the rear of the train which were closed as they should have been, and except for some where the train had passed and where he could see that the train was moving in the derailment. The train pipe cocks were fitted with safety handles as required.

45. He examined the trailing brake wheel coupling of Coach E (E/50) which was still locked in the closed position. From the damage to it and the coach's tread plate he concluded that the coupling had parted after the sleeping cars were on their sides and had been 'jack-knifed' from each other.

Assistant Engineer (Traction and Equipment) C. Wood examined the locomotive in Gateshead works on 28th June, after its recovery. He tested the controls, the AWS equipment, and the DSS equipment. He had made a full report from which it can be concluded that everything was in working order prior to the accident. In particular, the AWS and DSS equipment were still functioning and the brakes would have been automatically applied 3 seconds after passing a magnet at a signal at 'Caution' (or 'A1W'). In the case of the DSS the brakes began to apply 5 seconds after its release. He noted that the soil on the DSS isolating cock bore was broken although the cock was correctly in the 'open' position. There was no entry in the repair book as to why the soil was broken as there should have been.

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</tbody>
</table>

He explained that, as the speedometers measured the rotational speed of axles, their readings were dependent on wheel tye wear; the normal tolerance was ± 3%. Reading high, as they were, the train would have been travelling slower than 30 miles/h if the speedometer was reading 50 and hence the speedometer errors were 'half side'.

47. On 27th June Mr. Hayhoe also examined the DSS pedal and its operating mechanism in the leading No. 2 cab. It was noted that it was satisfactorily fitted and unobstructed. On 11th July he carried out tests to measure its 'depression' and 'release' loads, and also on a similar locomotive, No. 47 426. The results were as follows:

<table>
<thead>
<tr>
<th>Depression load</th>
<th>Release load</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2 Cab</td>
<td>No. 1 Cab</td>
</tr>
<tr>
<td>23 lb</td>
<td>27 lb</td>
</tr>
<tr>
<td>11 lb</td>
<td>15 lb</td>
</tr>
</tbody>
</table>

In each case the loads were measured at the mid-points of the pedals.

As to the Speed and Mechanism of Derailment

48. Mr. M. McLaughlin, a Principal Scientific Officer at the British Railways Board, Railway Technical Centre, Derby, was called to attend the derailment and arrived there shortly after 08.30 on the morning of 11th June. He had many years' experience in examining the results of derailments and in studying their causes.

49. He found that engineers on site had already identified the point of first derailment and had numbered the sleepers from it ' + ' in the direction of approach (i.e. towards the station) and ' - ' beyond it. He noted that a number of wheel flanges had crossed the high (60 feet) rail and confirmed thechange as being 16 miles 940 yards. He counted at least five derailing marcs between sleeper 0 and 19, and confirmed that there were no corresponding marks on the outside check rail, indicating that the left-hand wheels had lifted clear of that rail.

50. He also noted (as others had not) that there was a small flat on the outer corner of the rail head some 3 mm to 4 mm wide commencing at sleeper 20, indicating that wheels had been running with their edges on the outer edge of the rail and their flanges on the gauge face (i.e. with their axles already lifted as shown in Figure 2a) for some 21 m prior to the point of first derailment. He had only seen this once before some 13 years previously when he witnessed some controlled experiments. Greene from the rail lubrication had been smeared over the gauge corner of the rail for some 18 m.

51. Damage marks to the concrete sleeper ends of the Down line began 15 m beyond the point of derailment and 8 m after this there was blue paint on the 'six-foot' rail of the Down line, indicating that a coach had run on its side at this point. There were wheel marks on the check rail of the Up line commencing at sleeper 19 (beyond the point of derailment) and continuing over 6 sleepers following which there were marks of wheels having run on the sleeper in the 'four-foot'. He considered these to have been made by the last sleeping car in the train which had remained upright, with the van behind it.

52. From the above evidence he believed that the train had overturned quite quickly, beginning at a point some 18 m from the top of the platform ramp and that wheels had derailed some 23 m further on. He concluded that the first coaches to overturn were the first two sleeping cars which had left the track at right angles to it from each other. He thought that the leading sleeping car and the van ahead of it had caused the locomotive to overturn very soon afterwards and to cross the Down line; the very serious damage to the Down line, and the fact that all the bogies from the rear half of the train had been derailed by their over-turning coaches in the same area, supported this view.

53. Mr. McLaughlin presented calculations carried out by Dr. R. A. Clark of his organisation. The calculations were based on an initial speed of 30 m/s which considered the slope of the track over which the vehicle travelled, the van and cargo cars. The speed at which this occurred, based on calculated centres of gravity and a curve radius of 280 m with 150 mm of cast, were as follows:

<table>
<thead>
<tr>
<th>Centre of gravity above rail level</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mk III Sleeping Car</td>
<td>85 m/s</td>
</tr>
<tr>
<td>Class 47 Locomotive</td>
<td>91 m/s</td>
</tr>
</tbody>
</table>

He had used the radius of 280 m (instead of the design radius of 285 m) as being the average of a number of measurements taken after the accident at the point of derailment. A slight local tightening of the radius of
The speed with which the train was travelling was not fully known, but it was estimated that the train was travelling at a speed of 80 to 90 miles per hour. The locomotive controls indicated that the train was not braking and was therefore travelling at a high speed.

The signalman had set the route for the train to travel through the distance between Alnouth and Morpeth. The train was travelling at a speed of 80 to 90 miles per hour at this point.

On reaching Alnought, the train was braking to 65 miles per hour for the Southwold Curve and was on full power thereafter. In this case it would have achieved 86 miles per hour at the Morpeth Curve and the average speed would have been 71 miles per hour. It is likely that the train almost exceeded the restriction around the Southwold Curve, which accounted for the reports by passengers, and was on full power thereafter.

Summary and Conclusions—Part 1

I am satisfied that the signalman had set the route for the train to travel through the distance between Alnought and Morpeth. The train was travelling at a speed of 80 to 90 miles per hour at this point.

The point of derailment was easily identified, and I am also satisfied that the track on the approach to the curve was in a safe condition. A new railroad was going to be opened after the passage of the train had been made.

A further investigation concerning the brake gauge readings, the thorough examination of the air pipes throughout the train, and the braking equipment on the locomotive, indicates that the brakes were in working order. The locomotive controls indicated that no brake application had been made on the Morpeth Curve, or even a final emergency measure.

A trackman's evidence shows that the driver was alert by sounding his horn some 6 miles out or 4 minutes running time north of Morpeth. From my own experience of the journey on 17 July, I am satisfied that, had Driver Allan been alert, he could have noticed the signals as he was approaching the crossing.

The marks on the rails and at the junctions of the signals indicate, without doubt, that the train was travelling on the curve. Calculations show that the train's probable speed was somewhere between 85 and 91 miles per hour, whereas the maximum permitted speed was 85 miles per hour. From the signals the train was speeding at between 85 and 91 miles per hour and probably began accelerating some 12 miles from Morpeth for it to have attained its over-speeding speed.

I therefore conclude that Driver Allan failed to reduce his train's speed before entering the Morpeth Curve.
EVIDENCE—PART 2, Concerning Driver Allan, The Charges Made Against Him

63. Driver Allan was originally charged before a magistrate at Bridlington Court on 23rd October, under two Acts. The first was Section 17 of the Regulation of Railways Act 1842—"It shall be lawful for any Officer . . . of a railway company . . . to seize and detain any engine, driver, wagon driver (etc.), employed by the said company . . . who shall be found drunk . . . or who shall negligently do any act whereby the life or limb of any person upon such a railway might be injured or endangered." (etc.). A fine of £20 or two months' imprisonment was later amended to £200 and/or three months' imprisonment (see Appendix B for the whole of Section 17).

64. Section 17 replaced the similar Section 11 of the Act of 1840 which was read in conjunction with Section 14 of that Act. Section 14 permitted more serious cases to be remanded to the Quarter Sessions. Both sections of the 1840 Act however, were repealed by Section 85(1) of Schedule 12 Part 3 of the Transport Act 1962. This meant that Section 17 of the 1842 Act could only be tried in a Magistrate's Court.

65. The second charge was under Section 34 of the Offences against the Person Act 1861: "Whoever by any wilful omission or neglect shall endanger the safety of any person conveyed upon a railway shall be guilty of a misdemeanour." Offences under this Act may be tried by the Crown Court. Accordingly, the first charge was withdrawn and application was made for trial in the Crown Court which was granted.

66. Driver Allan was charged under three counts before the Honourable Mr. Justice Kennedy on 5th June 1985 at Newcastle Crown Court as follows:

Count 1—Damaging property with intent contrary to Section 12 of the Criminal Damage Act 1971.

Count 2—Endangering the safety of passengers contrary to Section 32 of the Offences against the Person Act 1861.

Count 3—Endangering the safety of passengers contrary to Section 34 of the Offences against the Person Act 1861.

In his summing up to the jury on 17th and 18th June, Judge Kennedy directed that the case should be tried on the third count only and that they should disregard the first two. The following evidence pertinent to my own inquiry is drawn from the summing up, and from statements made available to me.

Evidence as to Driver Allan's Actions

67. Six passengers gave evidence. Mr. Clark who had not travelled by sleeper for four or five years, had noticed the train rocking for about half a minute some time before the accident to the extent that it was "shaking". Mrs. Finlay had placed a bouquet of flowers on the parcel table above her bed. The train "rocked like a ship at sea" and the bouquet fell to the floor. She had climbed down and retrieved it, spoken to her husband and climbed back onto the top bunk; the only time thereafter that the train rocked badly was immediately before the crash. Mrs. McHaffie said that her case fell off the rack when they were near the end of Morpeth. She got up and restored it. Other passengers spoke of feeling up and down in their beds but were not unduly alarmed by it.

68. Four men working on the adjacent Down Line gave evidence. In addition to Leading Trackman Britton, who was only some five miles north of Morpeth, and who heard the train's horn sound as it passed his tamping machine, Mr. Quigley also said that the train was running normally past his works the same some 2 miles further north and Noel his look-out man heard the train sound its horn as did Mr. Mackelle, a permanent way Trackman walking south near Belford level crossing, 35 miles north of Morpeth.

69. In addition to Dr. Cunningham who attended Driver Allan in the cab of his locomotive (See Paragraph 33) and who did not smell any alcohol on the driver's breath, five people who were with the driver after the accident gave evidence. Police Constable Felham got into the cab and asked Driver Allan how he felt. Allan at first did not reply but later said that he could move his legs. Felham sheltered Allan while firman broke the locomotive's windscreen to gain easier access. He did not notice any alcohol on the driver's breath, but Mr. Thompson an ambulance driver who accompanied Driver Allan to the Royal Victoria Infirmary and who spoke to the driver, did. So did Dr. Garden who later took a blood sample from the driver.

70. When Driver Allan reached hospital at 01.47 he was seen by Dr. Adams. He described his injuries as a large bruise on the back of the head, and a 'lap laceration' some 60 mm long. He had a graze over the crown and described the pain in his neck as severe. He had a cold sweat and was pale. He was conscious but in considerable pain. The ambulance driver who travelled with him said that he noticed his mind did not seem to be normal. He was unable to speak coherently, and at one stage was not able to answer any questions at all.
of his head and grip in his eye together with a brused and swollen right hand, and he was tender at the back of his neck. He was conscious but disoriented although he was speaking coherently and responding to questions. Although Allen remained conscious, he had no apparent recollection of the accident or the vehicle the route in which, Dr. Adams said, was consistent with a head injury. He did not smell any alcohol on his breath.

71. Dr. Gardner, a police surgeon of Newcastle visited Allen with Police Inspector Guthrie at Newcastle at 03.55. Allen said that he remembered passing Berwick and Alnwick (50 miles and 18 miles respectively north of Morpeth), but nothing further. Dr. Gardner did observe that Allen smelled of alcohol but it was not overpowering and he had none of the usual signs of intoxication. He was not flushed, he had no marked breath and his skin was not dry, and his behaviour memory seemed normal. He could do ‘fine movements’ by way of testing and he was not breathing heavily. In his opinion, at that time, Allen was not adversely affected by alcohol. Allen admitted then to Inspector Guthrie that he had taken a drink before joining his train.

72. Dr. Gardner was interviewed by Detective Inspector King in the presence of Detective Sergeant Crowhurst both of Newcastle, in Ward 19 of the hospital at 06.40 on the morning of 25th June, the day following the accident. Allen then said that he had signed on duty at Haymarket Depot at 21.45 on the evening of Saturday 25th June and that he had driven a train down to Waverley Station. He had parked his car and after drinking two cans of Tarmets Lager (he said at about 21.15) in the car park he walked around the station until his train arrived, which he boarded at about 22.20. His last food before being served was at Alnwick and he ordered a substantial dinner before leaving home. His train left on time at 23.05 and the run was a normal one. He remembered going through Alnmouth but after that he remembered nothing. He had his head down and his head and feet were on the floor and the cab window shut. He could only assume that he had a coughing fit, his head and knocked himself unconscious. He admitted that he had had a drink for 20 years and that he regularly suffered from coughing fits; he also said that he had not had a coughing fit for 18 months previously; on that occasion he had had a small coughing fit which made him pass out for about a second.

73. As for the train’s run, he thought he would have been coasting towards Alnmouth at 12 miles per hour for the 6 miles to the south of it. His D303 signal was working normally and he had not ‘wedged’ it in any way.

74. On 12th July Inspector King together with Detective Sergeant Crowhurst again interviewed Inspector Guthrie. Allen but at his home address in Drem. After being allowed to read the statement he made on the 25th June, he answered Inspector King’s questions as follows: He said that he had left home on the night of the accident at about 20.30. He stopped at a public house in Northumburland where he drank, ate, and changed car. He next stopped at about 22.00 at a public house in Alnmouth where he drank and ate. He at that time ordered a beer and dinner. He then boarded a train at about 22.18 at Waverley Station. He entered the ‘East End’ sticking his foot into the Haymarket Depot. He showed a ticket for one of his own. He then collected his two cans of Tarmets Lager from the bar and drank them on his own in the Haymarket Depot. He was a regular passenger on the 22.15 train and was Extra Strong in each of them. He had been under one pint. He left the depot at 21.55 and spoke to Mr. Paul whom he passed on the station. He wandered around the station until boarding his train at 22.50.

75. During this interview he said that he did not normally drink before driving a train nor whilst on duty and was not a heavy drinker. But he could suggest no reason why he had done so that occasion. He had no family rule nor any money problems. He knew that it was an offence against British Railways Rules to drink on duty or to be intoxicated by it. In answer to the question ‘Would you consider that the drink you had on that night was a heavy intake, is that abnormal for you?’ he replied ‘Yes’. When Inspector King asked him ‘Surely, as you have admitted being an infrequent and light drinker that the quantity of your alcohol intake was quite abnormal for you’ he replied ‘It was the same as above’ and consequently your driving ability was therefore effectively illusory’ he replied ‘It could have been’.

76. When Inspector King reminded him that he had said that he thought he had had a coughing fit at Alnmouth and whether he could remember that, he replied ‘I thought I could remember it’, but he claimed in this, his second, interview that he could remember nothing after passing through his home town at Drem.

77. The blood sample taken from Driver Allan at 04.42 on 24th June was analysed that day by Dr. R. M. King a Scientific Officer of the Home Office Forensic Laboratory at Wetherby. It was found to contain 39 milligrams (mg) of alcohol per 100 cubic centimetres of blood (mg/100cc) Dr. R. M. King considered that an alcohol level of 39 mg/100cc was consistent with the stated amount of alcohol taken. Although the Rate of Metabolism of Alcohol varies between individuals he used an average figure of 15mg/100cc of blood per hour to conclude that the maximum concentration is most likely to have been between 1 and 2 hours after the last drink was taken, i.e. between 22.25 and 23.55. Assuming it to have been at 23.10, the maximum concentration would have been about 120mg/100cc at that time.

78. Professor M. D. Routley of the University of Newcastle made a similar calculation based on the driver’s age of 38 and 34 stone weight, and the fact that he ate a substantial dinner before leaving home. He estimated that the level lay at 23.00 on 23rd June when the train left Edinburgh would have been between 74 and 90mg/100cc. He agreed that the maximum concentration would have been between 2 and 3 hours after the last drink was taken.

79. He described the effects of alcohol as a depressant of the function of the brain but not all are equally at the same time. Hence on varying inhibitory mechanisms resulted in less restraint of the activity of other areas of the brain. This first depressive action were upon the higher intellectual and integrated functions impairing discrimination and memory, as well as concentration. The effects were being roughly proportional to the blood alcohol concentration. Studies had established a relationship between alcohol concentration and the time of recovery from below 100mg/100cc. An increase in the relative risk probability, but thereafter the risk increased; scientific information was in accordance with experience gathered by traffic accidents. In a judgement therefore, blood alcohol levels of 50mg/100cc, and possibly less, would lead to impairment of judgement, of mental function, and of psychomotor performance resulting in a diminished driving performance. The degree of impairment would be much greater, on average, in an individual unaccustomed to regular alcohol consumption. Finally he said, alcohol promotes sleep.

80. At Driver Allan’s trial the defence suggested that a severe bout of coughing leading to fainting had occurred as the train closely approached the Morpeth bend. Driver Allan’s wife’s statement that they had been married since 1952 and that his branch ended in 1979. She described one occasion in October 1972 when he suffered a terrific fit of coughing leading to Allan blowing back his head and fainting; he turned very red as his face swelled up and when he fainted went blue. She called their doctor’s partner Dr. Waugh but he never came. She thought that the black-out had lasted for almost a minute.

81. Mrs. Allan’s cousin Miss Rodgers described a second episode when she called at the Allans’ home in the autumn of 1961 or 1962. (Mrs. Allan thought that it was in June 1962). While sitting in the garden Allan began to sneeze and faintly and finally stood up. On Dr. Waugh’s advice on that occasion she was a convulsions for a minute or two. Mrs. Allan had wanted to call the doctor on that occasion too but her husband would not let her. Her was a Sunday and she was due to start work on the Monday. She did however phone on Monday morning and the doctor visited Miss. Allan and he was on sick leave for three weeks. He was told to visit the hospital and that he could use his car to get there. He was never told not to drive his car or to drive a train because of his coughing.

82. Driver Allan was seen by Dr. Cull on 10th August 1962, six weeks after the accident. He found that Allan suffered from bronchitis and emphysema and he thought there were some signs of the alleviation of ‘cough syndrome’, which he thought the driver’s wife and cousin had described. He explained that a middle-aged man with lung disease, and without a chronic respiratory disease such as bronchitis could become unconscious after a bad bout of coughing. The coughing so distresses and interrupts the normal movement of the blood supply in the lung that the patient loses consciousness and may lose the reflex. The blood then returns to the normal flow. In the present case, the patient is conscious and is conscious of it. The patient is conscious and may be aware of it. He concluded that there was no unusual chest problem having been present on the night of the accident which could be more likely to have occurred. The driver had not recently had any flares of chest troubles or complained of any chest noises in the chest.
of his head and grins in his eyes together with a brazen and swollen right hand, and he was tender at the back of his neck. He was not just a drunk but also a trained alcoholic, and the incident that occurred at the scene of the accident... which Dr. Adams said, was consistent with his head injury. He did not smell any alcohol on his breath.

71. Dr. Gardner, a police surgeon of Newcastle visited Allan with Police Inspector Gourley of Newcastle at 03.55. Allan said that he remembered passing Berwick and Alnwick (30 miles and 18 miles respectively north of Morpeth), but nothing further. Dr. Gardner did observe that Allan smelled of alcohol but it was not overpowering and he had seen the usual signs of intoxication. He was, however, flooded with no memory of his conversation and his skin did not droop, and his body and memory seemed normal. He could do "fine movements" by way of testing and he was not breathing heavily. In his opinion, at that time, Allan was not adversely affected by alcohol. Allan admitted then to Inspector Gourley that he had taken a drink before joining his train.

72. Allan was interviewed by Detective Inspector King in the presence of Detective Sergeant Crossley both of Newcastle, in Ward 19 of the hospital at 06:40 on the morning of 25th June, the day following the accident. Allan said that he had signed on duty at Haymarket Depot at 21:45 on the evening of 23rd June and had then driven his car down to Waverley Station. He had parked his car and after drinking two cans of Tenants beer (as he said at around 21:15) in the car park he walked around the station until the train arrived, which he boarded at about 22:50. His last food had been a substantial dinner before leaving home. His train left on time at 23:05 and the run was a normal one. He remembered going through Alnwick but after that he remembered nothing. He had driven his car to the train and had forgotten the cab window which had been left open. He only remembered having a couple of drinks at Berwick. He took medicines for it as necessary. He said that he had had a good night’s sleep and that he regularly suffered from chest pains; he also said that he had a small coughing fit at Berwick. He took medicines for it as necessary. He said that he had had a good night’s sleep and that he regularly suffered from chest pains.

73. As for the train’s run, he thought he would have been coasting towards Alnwick at 30-35 miles/h to slow for the 65 miles/h restriction to the south of it. His speed was normal and he did not "wedged" it in any way.

74. On 12th July Inspector King together with Detective Sergeant Crossley again interviewed Allan but at his home address in Drem. After being allowed to read the statement he made on the 25th June, he answered Inspector King’s questions as follows: He said that he had left the station on the night of the accident at about 20:50. He stopped at a public house in Alnwick where he drank a pint of beer, with another man, before returning to the train at 22:50. He left the public house at about 23:00 for the car park at Waverley Station. He entered the "Emlen Shunter's Booth" and telephoned Haymarket Depot to sign in. He then collected two cans of beer from the bar and drank them on his own in the car. He drove back to Alnwick, where he was Extra Strong, each of them being just under one pint. He left the booth at 21:55 and spoke to Mr. Paul who passed him on the station. He wandered around the station until his train left at 23:50.

75. During this interview he said that he did not normally drink before driving a train on the East Coast or on any money duty and was not a heavy drinker. He could not suggest reasons why he had done so on that occasion: he had no family rules nor had any money problems. He knew that it was an offence against British Railway Rules to drive a train on duty or on any money duty and he was aware that it is an offence to drink alcohol before driving a train. He was asked if he had considered that the drink he had taken on that night was likely to be a heavy intake of alcohol and he replied "Yes". When Inspector King asked him "Surely, as you have admitted being an infrequent and light drinker that the quantity of alcohol that you have drank could not have affected your driving ability", he replied "Surely, as you have admitted being an infrequent and light drinker that the quantity of alcohol that you have drank could not have affected your driving ability, and consequently your driving ability was therefore likely to be impaired". He replied "It could have been".

76. When Inspector King reminded him that he had said that he had had a drinking fit at Alnwick and whether he could remember that, he replied "I thought I could remember it", but he denied it, and he claimed, in both interviews, that he could remember nothing after passing through his home town station at Drem.

77. The blood sample taken from Driver Allan at 04:42 on 24th June was analysed that day by Dr. R. M. King a Scientific Officer of the Home Office Forensic Laboratory at Wetherby. It was found to contain 49.5 mg of alcohol per 100 ml of blood. (09:45:00) Dr. R. M. King considered that this level of alcohol was consistent with the stated amount of alcohol taken. Although the pharmacist of the college of alcholic varies between individuals he used an average figure of 15mg/100ml of blood per hour to conclude that the maximum concentration is most likely to have been between 0.0 and 0.02% after the last drink was taken, i.e.

78. Professor M. D. Rawling of the University of Newcastle made a similar calculation based on the driver’s age of 34 and 34 stone weight, and the fact that he ate a substantial dinner before leaving home. He estimated that the alcohol level at 03:00 on 23 June was exactly 0.02% and that at the time of the accident this would have been 0.02%, and at 03:30 the last drink was taken.

79. He described the effects of alcohol as a depressant of the function of the brain but not of all areas equally at the same time. Hence the body will feel the effects of alcohol more quickly if the drinker is already ill or tired. He described that the first depressant actions were upon the higher intellectual and integrated functions including discrimination and memory, as well as concentration. The effects were broadly proportional to the blood alcohol concentration. Studies has established a relationship between alcohol concentration and results of intelligence testing, and the degree of reasoning below 0.02% alcohol concentration and the risk of errors in reasoning increase in the relative risk probability, but there is no significant increase in the relative risk probability, but thereafter the relative risk increased and scientific evidence was in accordance with experience gathered from road traffic accidents. In his judgement therefore, blood alcohol levels of ±0.02% are not bad, and possibly worse, would lead to impaired judgment, of motor function, and of psychomotor performance resulting in a diminished driving performance. The degree of impairment would be very different, on average, in an individual accustomed to regular alcohol consumption. Finally he said, alcohol promotes sleep.

80. At Driver Allan’s trial the defence suggested that a severe bout of coughing leading to fainting had occurred as the train closely approached the Morpeth bend. Driver Allan’s wife’s story that they had been married in 1952 and that his branch tin was born in 1957. She described one occasion in October 1958 when he had a severe bout of coughing leading to Allan throwing back his head and fainting; he turned very red as he then became blue and he fainted as her. She called their doctor’s partner Dr. Waugh but he never came. She thought that the black-out lasted for almost a minute.

81. Mrs. Allan’s cousin Miss Rodgers described a second episode when she called at the Allans’ home in the autumn of 1958 or 1959. (Mrs. Allan thought it was in 1958). While sitting in the garden Allan began to break out and finally fell. When he came to he said that he had been to the pub that day and had had a few drinks. On that occasion he seemed to be unconscious for a minute or two. Mrs. Allan had wanted to call the doctor on that occasion too but her husband would not let her because it was a Sunday and he was just due to start work on Monday. She did not phone on Monday morning and the doctor visited Mrs. Allan and he was sick leave for three weeks. He was told to visit the hospital and that he could use his car to get there. He was never told not to drive his car or not to drive a train because of his coughing.

82. Driver Allan was seen by Dr. Cull on 18th August 1964, six weeks after the accident. He found that Allan suffered from bronchitis and encephalitis and he thought that there were some signs of the alleged "cough syncope", which he thought the driver’s wife and her cousin had been. He explained that a minor episode of elderly man’s cough with an episode of syncope could be due to a chronic respiratory disease such as bronchitis, and indeed Allan was susceptible to syncope after a bad bout of coughing. The coughing did not simply interrupt the normal movement of the blood supply and a patient on the other hand, being conscious of the hyperventilation, has been described as "cough syncope", just before the accident; he expressed it as being perhaps an over-excitement. But he conceded that there was no unusual chest problem having been present on the site of the accident which would have made it more likely to have occurred. The driver did not have any fire alarm of chest troubles or complained of any chest pains in the chest.
Mr. Taylor described the signing-on arrangements in force at the time of the accident. All members of train crew were controlled by the Operating Department but footplate staff (e.g. drivers and firemen) were still located at Haymarket Depot and booked on and off duty there. The remainder of the train crew booked on and off duty at Waverley Station. In this case Driver Allan was required to sign on at Haymarket depot at 55 minutes past 8. A minibus is provided 'round the clock' to convey footplate staff to Waverley Station and to other points within the Edinburgh area. However, the minibus service was not available for a number of turns of duty and an appropriate 'walking times allowance' was included within a shift time of 8 hours for pay purposes, and this was in Driver Allan's case.

Mr. G. C. J. Tully was on duty as a minibus driver on the night of the accident. At 21.45 Driver Allan telephoned him on a Railway network telephone to say that he was 'on duty'. Tully told the fact and said that he would tell the time clerk who was not then in the office. Tully had then been in the office for about an hour and had seen the previous clerk leave the office at about 20.00, and Driver Allan had sounded quite normal on the telephone.

The time clerk on duty that night was A. R. Campbell, although he normally changed duty at 22.00. He told me that when he arrived at 22.00, the previous time clerk had just gone to change duty at 20.30, and he (Campbell) had been on duty since 19.45. At 21.45 he went to the office and told Tully to stand in until he was ready. When he returned at 21.50 Tully told him that Driver Allan had signed on by telephone, and that he, Campbell, did not actually see the driver. He told me that about one-third of drivers who signed on by telephone; they were mainly the men who lived to the east of Edinburgh, the same applied to Haymarket Station which was some 20 minutes walk from his office in the depot, and to those joining their trains (nominally the high-speed trains) at Craigentinny Depot.

Campbell told me that minibus-driver Tully had a full programme of booked work and that the service was not available for all drivers. The practice of signing on by telephone was limited to the 'usual hours' and was allowed for the first 12 hours each night. Campbell had worked as a time-keeping clerk for 5 or 6 months and the practice was the 'accepted norm' when he joined the office; he had previously worked on the parcels and passenger side since 1979.

W. D. Currie had worked at Waverley Station on the night shift at 22.00. At about 21.45 he was on his way to Platform 10 to supervise the departure of the 22.05 train, he saw Driver Allan walking towards the car park towards the station. One hour later he again saw him on Platform 1 from where he was watching the 23.05 sleeping car train. All was in order and he was talking to the 23.05 train's sleeping car guard. Driver Allan passed between the train and himself, about 4 yards away; they did not speak to each other. He described his gait as slow but quite normal. He had known Allan for 35 years and found him to be quite normal. He had been passed as being fit for service and had been a station supervisor for 30 years and in the last 10 years he had only had to check men for drinking on three occasions — there were a railman at Craigentinny, a charge hand at Waverley, and a porter (railman) at Waverley. In each case the men had been immediately suspended and reported for disciplinary action. The charge-hand had been dismissed. He told me that if he thought that a man had been drinking and the man denied it, he would seek a second opinion, where possible.

A. P. Paul was on duty at Waverley Station until 22.00 on the night of the accident. He told me that he would check that all cars were properly locked and to a passenger at the time and Driver Allan had taken the train last. He was not aware of any staff meeting to discuss new procedures. He was not aware of any staff meeting to discuss new procedures.

Mr. J. Walker ASLFE told me that Scottish Region have 'alcohol panels' to deal with those men who admit to having an alcohol problem. Such men were helped and not disciplined.

Driver P. M. Allan had joined the Railway in 1942 as a porter and became a driver as a 'passed fireman' in 1952. He had been a main-line driver since 1972 based at Haymarket Depot. He had last 'signed for' the East Coast Main Line Route in September 1982 indicating that he knew the route well.

On the night of the accident he had completed one week of night duty as follows:

<table>
<thead>
<tr>
<th>Day</th>
<th>On duty</th>
<th>On spare</th>
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<tbody>
<tr>
<td>Sunday 17th</td>
<td>22.51</td>
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<tr>
<td>Monday 18th</td>
<td>22.10</td>
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<tr>
<td>Tuesday 19th</td>
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<td>Wednesday 20th</td>
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<td>Friday 22nd</td>
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</tr>
<tr>
<td>Saturday 23rd</td>
<td>22.10</td>
<td>22.45</td>
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</table>

He told me that night shift did not worry him at all but when the change came from night to day shift he lay awake half the night and wanted to go to sleep when it was time to get up.

He had lived in Drem for 17 years. On his way to work he had stopped in Musselburgh and visited a public house 'down a side street' but he could not remember its name. He had arrived at Waverley Station at about 21.25 and had telephoned from the station's booth which was beneath the old Waverley East Signal Box, using the Railway telephone there. He had had two cabs of lager in his car for a considerable time and took them to the boating and drank them there. After reading the driver's notices on the first floor of the station building he had 'wandered around the station' walking for his train to arrive. He told me that from time to time he had met friends in Edinburgh and had a drink with them.

I asked Driver Allan two questions. The first was — why had he drunk so much on his way to work and after signing on for duty when he claimed to be a light drinker; he had absolutely no explanation to give.

The second question was — why had he admitted to Inspector King that he had drunk at all, to which he replied "It seemed the easiest thing to do". Driver Allan told me that his memory of the journey on the night in question had not returned and he could remember nothing after having passed through Drem, which was his home town.

The Regional Medical Officer, Dr. F. Heyes, in a written statement, said that Driver Allan had had his routine medical examination for the first time in 1976 when he had been 35 years old and was examined again in 1980 when his clinical examination was normal and within the standards required, nor was anything noted when examined on 1st November 1982 aged 57. He had no need for any other examination since 1976 when he injured his left leg, was off sick for 10 days and gained a full recovery.

Dr. Heyes had been in discussion with Allan's own general (lady) practitioner on 3rd July 1984. She told me that about two years before he had had a heart attack and was referred to him. She said that he had also fallen into between his locomotive and the platform in January 1983 and was possibly concussion but gained a full recovery. These are all the two events for which he was consulted and he had no other significant information from his personal knowledge over the past few years. Dr. Heyes had no other information on the health of Allan.

I am informed that on the second occasion when he fell between the platform and the locomotive, the platform was at risk and Driver Allan made a claim against British Railways which was settled.

Following my interviews on 4th July I visited those parts of Waverley Station where Driver Allan had been seen on the night of the accident. The station has been considerably altered since that date but the diagram at Figure 3 depicts it at that time. Driver Allan parked his car at 21.35 as stated to Mr. King in paragraph 74 of the Goods Depot not far from the (then) site of where he was hit and had walked about 21.25 from Mr. Currie and at about that time by Mr. Paul ascending the stairs which would have taken Driver Allan 3 to 4 minutes to walk. Assuming that the telephone call took 1 minute, from his evidence he must have collected from his car and then drunk almost two pints of lager in the intervening 7 to 8 minutes.

On leaving the station building and turning right one ascends steps up onto a station overbridge. Turning left (southward) the bridge gives access across East Market Street, and not far away on the other side of the street, known as 'Fresh Market Close' lies the building of the new public houses in this area open all night. Driver Allan was next seen at about 22.50 walking along platform 11 towards the head of his train by Mr. Curry and his guard. In spite of his claim that he had wandered around the station, he had apparently not been seen in the intervening 45 to 50 minutes.

I have taken advice on the effects of cough syncope from Dr. D. P. Winter an Employment Medical Advisor of the Health and Safety Executive. He tells me that cough syncope is a physiological and not a disease process. The condition occurs in middle-aged smokers with bronchitis and it is almost exclusively confined to men and frequently inhaled, bad teeth and other infections play some part in initiating an attack. It is not unusual and is usually brought about by prolonged and violent coughing. Because of
85. Mr. Taylor described the signing-on arrangements in force at the time of the accident. All members of train crew were controlled by the Operating Department but footplate staff (i.e., drivers and secondmen) were still located at Haymarket Depot and booked on and off duty there. The remainder of the train crew booked on and off duty at Waverley Station. In this case Driver Allan was required to sign on at Haymarket Depot, which is some 10 minutes drive by car west of Waverley Station at 20 minutes walk. A minibus is provided 'round the clock' to convey footplate staff to Waverley Station and to other points within the Edinburgh area. However, the minibus service was not available for a number of turns of duty and an appropriate 'walking time allowance' was included within a half-hour shift for pay purposes, and this was so in Driver Allan's case.

86. Mr. G. C. I. Tully was on duty as a minibus driver on the night of the accident. At 21.45 Driver Allan telephoned him on a Railway network telephone to say that he was 'on duty'. Tully noted the fact and said that he would tell the time clerk who was not then in the office. Tully then had been in the office for an hour and had seen the previous clerk leave the office at about 20.00. Driver Allan had sounded quite normal on the telephone.

87. The time clerk on duty that night was A. R. Campbell. Although he normally changed duty at 22.00, he was on duty that night. Mr. A. D. Pullock, the previous time clerk, had arranged with him to change duty at 20.00, and that he (Campbell) had been on duty since 21.45. At 21.45 he went to the toilet and asked Tully to stand in for him. When he returned at 21.50 Tully told him that Driver Allan had signed on by telephone, and that he, Campbell, did not actually see the driver. He told me that about one third of drivers who signed on did so from train working duties from Waverley sign on by telephone; they were mainly the men who lived to the east of Edinburgh. The same applied to Haymarket Station which was some 20 minutes walk from his office in the depot, and to those joining their trains (the normals or high-speed trains) at Craigtoun Garage.

88. Campbell told me that minibus-driver Tully had a full programme of booked work and that the service was not available for all drivers. The practice of signing on by telephone was limited to the 'unusual hours' and Tully had almost 60.00 each night. Campbell had worked as time-keeping clerk for 2 to 3 months and the practice was the 'accepted norm' when he joined the office; he had previously worked on the parcels and passenger side since 1979.

89. Station Supervisor W. D. Currie had started work at Waverley Station on the night shift at 22.00. At about 21.55 he was on his way to Platform 10 to supervise the departure of the 22.05 train, when he saw Driver Allan walking through the car park towards the station. One hour later he again saw him on Platform 1 from which he was changing over to Platform 2 at about 22.05, the 22.05 train. He described him as a 65-year-old man, wearing a dark jacket and tie. He had not seen him during the day and, when he asked him how he was, he replied that he had seen him at the station that night. He had described him as a railwayman and a porter (railman) at Waverley. In each case the men had been immediately suspended and reported for disciplinary action. The station manager had been informed. He told me that if he thought that a man had been drinking and the man denied it, he would seek a second opinion, where possible.

90. Train Crew Supervisor A. P. Paul was on duty at Waverley Station until 22.00 on the night of the accident. He was of the view that checks should be made to passenger at the time and Driver Allan was considered to be under the influence of alcohol. He had passed Driver Allan on the platform and it was his opinion that the man had left the train at the previous stop. He had been in touch with the National Health Service (NHS) about the situation and had been told that Driver Allan was under treatment.

91. Mr. J. Walker ASLEF told me that Scottish Region have 'alcohol panels' to deal with those men who admit to having an alcohol problem. Such men were helped and not disciplined.

92. Driver P. M. Allan had joined the Railway in 1942 as a porter and became a driver as a 'passenger fireman' in 1952. He had been a main-line driver since 1972 based at Haymarket Depot. He had lost 'sign-on' for the East Coast Main Line Route in September 1982 indicating that he knew the route well.

93. On the night of the accident he had completed one week of night duty as follows:

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</tbody>
</table>

He told me that night shift did not worry him at all when the change from night to day shift he lay awake half the night and wanted to sleep when it was time to get up.

94. He had lived in Drem for 17 years. On his way to work he had stopped in Musselburgh and visited a public house 'down a side street' but he could not remember its name. He had arrived at Waverley Station at about 21.25 and had telephoned from the station's office which was the old Waverley East Signal Box to the British Rail telephonists there. He had been waiting for some time in the Signal Box. He had been in the Signal Box and had been talking to the telephonists there. After checking the driver's notices on the first floor of the station building he had 'wandered around the station' waiting for his train to arrive. He was told that it was time to return to Edinburgh and had a drink with them.

95. I asked Driver Allan two questions. The first was—why had he drunk so much on his way to work and after signing on for duty when he claimed to be a light drinker; he had absolutely no explanation to give. The second question was—why had he admitted to Inspector King that he had drunk at all, to which he replied 'It seemed the easiest thing to do'. Driver Allan told me that his memory of the journey on the night in question had not returned and he could remember nothing after having passed through Drem, which was his home town.

96. The Regional Medical Officer, Dr. F. Heyes, in a written statement, said that Driver Allan had had his routine medical and an electrocardiogram examination at the appropriate times. Nothing unusual was detected when examined at the age of 55 on 27th October 1980 when his clinical examination was normal and within the standards required, nor was anything noted when examined on 1st November 1982 aged 57. He had had no need for any other examination since 1976 when he injured his left leg, was off sick for 10 days and gained a full recovery.

97. Dr. Heyes had been in consultation with Allan's own general (lady) practitioner on 3rd July 1984. He told me that about two years ago he had had to be passed for work as a result of his head and was possibly confused but made a good recovery. He had also fallen in his locomotive and the platform in January 1983 and was possibly confused but gained a full recovery. These are the two events for which he was consulted and he acknowledged that his knowledge of the man's medical history over the past few years. Dr. Heyes had no other information concerning the health of Allan.

98. I am informed that on the second occasion when he fell between the platform and his locomotive, the platform was not clear, and Driver Allan made a claim against British Railways which was settled.

99. Following my interviews on 4th July I visited those parts of Waverley Station where Driver Allan had been seen on the night of the accident. The station has been considerably altered since date but the diagram at Figure 3 depicts it as it was then. Driver Allan parked his car at 21.35 (as stated to Mr. King in paragraph 74 below) beside the Goods Depot not far from the booking office where he had worked. He had passed through the platform at about 21.25 by Mr. Currie and also at about that time by Mr. Paul. Ascending the stairs which would have taken Driver Allan 3 to 4 minutes to walk. Assuming that the telephone call took 3 minutes from his own evidence he must have collected his car from his seat and then driven almost two sets of points to enter the intervening 7 to 8 minutes.

100. On leaving the station building and turning right one ascends steps up onto a station overbridge. Turning left (southwest) the station building gives access onto East Market Street, and not far away on the left side street, known as 'Nash Market Close' lead up between buildings. A number of public houses in this area stay open all night. Driver Allan was next seen at about 22.50 walking along platform 11 towards the head of his train by Mr. Curry and his guard. In spite of his claim that he had wandered around the station, he apparently not been seen in the intervening 45 or 30 minutes.

101. I have taken advice on the effects of cough syncope from Dr. D. P. Winter an Employment Medical Advisor of the Health and Safety Executive. He tells me that cough syncope is a physiological and not a disease process. The condition occurs in middle-aged smokers with bronchitis, and is almost exclusively confined to men and frequently alcohol, bad teeth and other infections play some part in initiating an attack. It is not unusual, and is usually brought on by prolonged and violent coughing.
tergrade amnesia," a subject may honestly believe that he became unconscious after coughing once or twice even though a witness would know that the coughing had been prolonged. During an attack, a subject's muscles are violently flailed and he will collapse to the floor unless restrained in some way. Dr. Winter considers it unlikely that the subject would remain conscious under those circumstances, which will be transitory and nearly always last for only a few seconds. It would be exceptional if he remained unconscious for a minute or more.

**Conclusions**

102. Following my public inquiry I concluded that the train's speed traversing the Mørpeth Curve was between 85 and 91 mile/h, and that Driver Allan had clearly failed to properly control his train. There are two possible reasons for this: he suffered a severe bout of coughing shortly before he should have begun to reduce the train's speed and remained incapable until the train overtook the viaduct. It seems that Driver Allan had never reported to the Railway medical officers the fact that he suffered from an incapacitating coughing condition. In any case he had only to take his feet off the DSD pedal to stop the train if he had begun to cough uncontrollably and he could also have shut off power and applied the brakes very quickly. Alternatively it is possible that he became drowsy and inactive because of the drink he had taken. Although he may have failed to reduce the train's speed sufficiently for the 68 mile/h restriction some 13 miles north of Mørpeth, he was alert enough to sound his horn as he passed Bream's 7 mile further on. In the six miles approaching Mørpeth at some 80 mile/h or more he may well have fallen asleep, or become drowsy, and that completely forgot about the approach curve. I must say that I am strongly inclined to the possibility that he fell fully or nearly asleep as being the most likely.

**Discussion**

**Provision of the AWI Mørpeth Warning**

104. Had the restriction of speed from 100 to 50 mile/h been applied in one stage, the rules agreed following the 1969 accident for the provision of a 'Mørpeth' AWI warning would have led to such a warning being given to the train up to the 75 mile/h speed limit, and had he not been drowsy, that warning would have been given to him within 6 seconds, his train would have been automatically braked to reach a safe speed before entering the curve. But the 'cascade' of three successive permanent speed restrictions which had historically applied on the curve, 70 mile/h round the North Curve, and 50 mile/h round the main curve itself, fell outside these rules, and no AWI was provided.

105. Since this second accident on the Mørpeth Curve, the Rules have been amended to take account of serious restrictions of speed where the restrictions are 'cascaded.' In general, each restriction must be considered as a separate event from the initial approach speed. Where this is greater than 75 mile/h and the restriction is greater than one third of it, then an AWI will be provided. The requirements have been extended to include approach speeds to 75 and 60 mile/h although the criteria is slightly different and consideration is being given to extending the use of the equipment below 60 mile/h, but at a later stage. Having decided that an AWI is to be provided, its position and that of its associated permanent magnet must be such that the train's speed, when the train is automatically braked, would not exceed other permanent restrictions within the cascade. Nor must the AWI magnet and warning board conflict with the normal AWI signalling system. Almost all 'cascade' restrictions occur within a distance of 4 miles.

106. In agreeing this extension of the Rules for AWI, it has been necessary to consider to what extent and to what speed restrictions AWI should be applied, for it is not practicable to extend the system to cover all restrictions of speed. Col. Robertson who agreed the original provisions in 1969 did not think it was adequate at the time, and a great step forward in achieving the safety which it was. But even now there will be situations where cascaded restrictions extend over a considerable distance, such as on the approach to Kings Cross main line terminal in London, and each such case will have to be individually considered.

107. AWIs has not always been effective in preventing drivers' posting signals at Danger; they sometimes automatically cancel the horn and drive as if no warning had been given. I am told that the new Rules for AWI on Eastern region will involve the installation of 57 sets of equipment at restrictions where Stop is required, a further 47 for speeds between 60 and 75 mile/h and a further 92 if the warning is to be extended to lower speeds, making 176 in all. The figures on the other Regions are similar. There is the fear that drivers may cancel and ignore these warnings as they sometimes do at the similar AWI warnings.

108. There is however a system installed on a number of high-speed and metro railways that has virtually eliminated such accidents; I refer to automatic train protection or 'APT.' This involves indicating to the driver a method of cal signalling, the safe speed at which he can drive either because the train is ahead, or because there is a permanent speed restriction on the line ahead. The driver's required to keep his train's speed below that indicated, and if he does not do so, he is first warned and then the brakes are applied.

He cannot overrule this application. The high-speed railways I have referred to include the Japanese Shinkansen, the French TGV lines, and the Italian Frecciarossa line from Florence to Rome. Most modern metro railways also have this protection, including the new Dublin 'DART' metro but in Britain only the Piccadilly line of the London Underground has it. Had AWI been applied at Mørpeth the accident would probably not have occurred, and if ATIP had been provided it could not have occurred.

109. It has been suggested that all high-speed trains should be fitted with a 'black box' which could record their speed, acceleration, braking, and the position of the main controls. One had been fitted could have provided evidence on which a better judgement could have been made on the way in which the driver lost control of his train, but it could not have prevented the accident. In my view therefore the limited funds available are much better spent on the provision of AWI (or APT) equipment, and vigilance devices in place of DSD on the locomotives. I do not therefore support the suggestion.

**The Driver's Safety Device**

110. This accident, in common with a similar one to a sleeping-car train as at approached Paddington Station on 23rd November 1963, has shown that some designs of Driver's Safety Devices (DSD) fitted to locomotives may not be reliable in detecting if a driver is drowsy or asleep, and of automatically stopping the train. Had Driver Allan suffered from an attack of cough syncope the DSD clearly did not stop the train on this occasion either. Mr. A. W. Waters, Traction and Train Crew Manager of Eastern Region BR told the court at Allan's trial, that BR drivers become incapacitated for a good two to three times a year and on twelve occasions when they did so during the last four years the DSD was known to have operated successfully seven times. On the five occasions on which it had not, a second man in the cab had applied the brakes, or a train had hit the buffers before the brakes had been applied. Since the Paddington derailment trials have been carried out to test more sophisticated driving aid and, in the meantime, standard vigilance devices as fitted to the high-speed trains will be installed in certain classes of locomotive including the Class 475s involved in this accident.

**Drinking on Duty on British Railways**

111. Following this accident British Railways were asked to carry out a survey of disciplinary cases involving the taking of alcohol. Their findings are set out in Appendix C. Drivers (4.7% of all incidents) but they can rarely cause a serious accident. Civil Engineers' staff and Guards are next on the list (10% and 13% respectively) followed by drivers (8.1%) clerical staff (6.7%) and mechanical and electrical staff (5.3%). There is a clear link between alcohol and the sample tests. Considering the Regions, South West Region with over 100 cases each one of which 12 were drivers and 15 were guards, had 55.8% of all incidents, the other Region each having only about a quarter of this number, and Western Region only about 10 per year. As for Scottish Region, the overall figures for the three years were 95, 113, and 121 illustrating a similar trend in the three years. Reported cases of train crew being drunk have therefore reduced over this period from 18 to 5 for drivers and from 17 to 11 for guards per year.

112. The British Railways Board points out that in terms of the number of staff employed the incidence of drinking on duty is statistically very small, and that there have been only two serious accidents since 1972 when alcohol was the prime cause. The most serious accident concerned Driver Wilibald at Ebbisham (Well Hall) Southern Region on 11th June 1972, which was the subject of an inquiry, but a strong smell of drink remained on the breath of Driver Tuck's. 9 hours after he had driven a freight train into the rear of a passenger train at Wembdon on 12th October of that year. The driver's breath was tested because he had been late for work and had missed his first duty. Col. Robertson, who inquired into the first accident, recommended that the Railways Board should consider taking powers to enable their supervisors to demand a blood alcohol test at the time of an accident; he suggested that such a machinery would "act as a considerable deterrent on drivers who are aware of the consequences of any attempt to deceive the Board." In my own Report on the second accident I commented: "had there existed the machinery there need have been no doubt about this aspect," i.e. that the driver had been drinking. The Board took no action on that occasion.

113. The British Railways Rule Book (see Appendix B) lays down that the Board may not report for duty under the influence of drink and must not drink on duty. By his own admission Driver Allan, a senior and experienced driver who clearly knew what the Rules were, drank with both these orders; and on the morning of the accident. If the driver's breath were checked when the driver arrived at his workplace he was declared fit for duty. In my own Report on the second accident I commented: "had there existed the machinery there need have been no doubt about this aspect," i.e. that the driver had been drinking. The Board took no action on that occasion.
...terrograde amnesia... A subject may honestly believe that he became unconscious after coughing once or twice even though a witness would know that the coughing had been prolonged. During an attack, a subject's muscles are totally flaccid and he will collapse to the floor unless restrained in some way. Dr. Winter considers it unlikely that the subject would remain conscious in such an unconscious state, which will be transient and will probably last for only a few seconds. It would be exceptional if he remained unconscious for a minute or more.

CONCLUSIONS

102. Following my public inquiry I concluded that the train's speeding traversing the Morpeth Curve was between 85 and 91 mile/h, and that Driver Allan had clearly failed to properly control his train. There are two possible reasons for this: he suffered a severe bout of coughing shortly before he should have begun to reduce the train's speed and remained incapable until the train overran. It seems that Driver Allan had never reported to the Railway medical officers the fact that he suffered from an incapacitating coughing condition. In any case he had only to take his feet off the DSD pedal to stop the train if he had begun to cough uncontrollably and he could also have shut off power and applied the brakes very quickly. Alternatively it is possible that he became drowsy and inattentive because of the drink he had taken. Although he may have failed to reduce the train's speed sufficiently for the 65 mile/h restriction some 13 miles north of Morpeth, he was alert enough to sound his horn as he passed Belsey 7 miles further on. In the six months approaching Morpeth at some 80 mile/h or more he may have been too fast asleep or too drowsy to completely forget the approach to the curve. I must say that I am strongly inclined to the possibility that he fell fully or nearly asleep as being the most likely.

DISCUSSION

Provision of the AWI Morpeth Warning

104. Had the restriction of speed from 100 to 50 mile/h been applied in one stage, the rules agreed following the 1969 accident for the provision of a Morpeth AWI warning would have had to such a warning being applied from the Kidderminster end, he had indicated in a letter to me within about 6 seconds, his train would have been automatically braked to avoid a further 500 yards speed before entering the curve. But the 'cascade' of three successive permanent speed restrictions which had historically applied in the past, 70 mile/h round the North Curve, and 50 mile/h round the main curve itself, fell outside these rules, and no AWI was provided.

105. Since this second accident on the Morpeth Curve, the rules have been amended to take account of serious restrictions of speed (or the restrictions are 'cascade'). In general, each restriction must be considered as if it were from the initial approaching speed. Where this is greater than 75 mile/h and the restriction is greater than one third of this, then an AWI shall be provided. The requirements have been extended to include approach speeds between 75 and 60 mile/h although the criteria is slightly different, and consideration is being given to extending the use of the equipment below 60 mile/h, but at a later stage. Having decided that an AWI is to be provided, its position and that of its associated permanent magnet must be such that the train's speed, when the train is automatically braked, would not exceed other subsequent restrictions within the cascade. Nor must the AWI magnet and warning board conflict with the normal AWS signalling system. Almost all 'cascade' restrictions occur within a distance of 4 miles.

106. In agreeing this extension of the rules for AWI, it has been necessary to consider to what extent, and to what speed restrictions AWI should be provided, for it is not practicable to extend the system to cover all restrictions of speed. Col. Robertson who agreed the original provision in 1969 no doubt thought that it was adequate at the time, and a great step forward in achieving the criteria which was set. But even now there will be situations where cascaded restrictions extend over a considerable distance, such as on the approach to Kings Cross main line terminal in London, and in such cases will have to be individually considered.

107. AWS has always been effective in preventing drivers' posting signals. But, these times automatically cancel the horn and drive inquisitively if no warning had been given. I am told that the new rules for AWI on Eastern region will provide for the installation of equipment at restrictions where it is advisable, a further 47 speeds for speeds between 60 and 75 mile/h and a further 92 if the warning is to be extended to lower speeds, making 176 in all. The figures on the other Regions are similar. There is the fear that drivers may cancel and ignore these warnings as they sometimes do at the simple AWS warnings.

108. There is however a system installed on a number of high-speed and metro railways that has virtually eliminated such accidents; I refer to automatic train protection or 'ATP', This involves indicating to the driver a method of cab signalling, the safe speed at which he can drive either because there is a train ahead, or because there is a permanent speed restriction on the line ahead. The driver is required to keep his train's speed below that indicated, and if he does not do so, he is first warned and then the brakes are applied. He cannot overrule this application. The high-speed railways I have referred to include the Japanese Shinkansen line, the French TGV lines, and the Italian Frecciarossa line from Florence to Rome. Most modern metro lines also use similar protection, including the new Dublin 'DART' metro line but in Britain only the Riverford line of the London Underground has it. Had AWI been applied at Morpeth the accident would probably not have occurred, and if ATP had been provided it could not have occurred.

109. It has been suggested that all high-speed trains should be fitted with a 'black box' which could record their speed, acceleration, braking, and the position of the main controls. One has been fitted it could have provided evidence on which a better judgement could have been made on the way in which the driver lost control of his train, but it could not have prevented the accident. In my view therefore the limited funds available are much better spent on the provision of AWI (or ATP) equipment, and vigilance devices in place of DSD on the locomotives. I do not therefore support the suggestion.

The Driver's Safety Device

110. This accident, in common with a similar one to a sleeping-car train at approached Paddington Station on 23rd November 1969, has shown that some designs of Driver's Safety Device (DSD) fitted to locomotives may be of no value in detecting if a driver is drowsy or asleep, and of automatically stopping the train. Had Driver Allan suffered from an attack of cough syncope the DSD clearly did not stop the train on this occasion either. Mr. A. W. Walters, Traintion and Train Crew Manager of Eastern Region BR told the court at Allan's trial on 24th, that BR drivers became incapacitated for about three times in a year and on twelve occasions when they did so the last four years the DSD was known to have operated successfully seven times. On the five occasions on which it had, a second man in the cabin had applied the brakes, or a train hit the buffers before the brakes had been applied. Since the Paddington derailment trials have been carried out to test a more sophisticated driving aid and, in the meantime, standard vigilance devices as fitted to the high-speed trains will be installed in certain classes of locomotive including the Class 4750 involved in this accident.

Drinking on Duty on British Railways

111. Following this accident British Railways were asked to carry out a survey of disciplinary cases involving the taking of alcohol. Their findings are attached to Appendices 8-12. I believe the figures are accurate, Railways' staff and Guards are next on the list (13.0% and 13.1% respectively) followed by drivers (2.0%) clerical staff (6.7%) and mechanical and electrical staff (5.2%). There is an appreciable variation in the figures obtained by the various Regions. Considering the Regional, South West Region with over 100 cases each year, of which 12 were drivers and 15 were guards, had 55.8% of all incidents, the other Regions each having only about one quarter of this number, and Western Region only about 10 per year. As for Scottish Region, the overall figures for the three years were 95, 113, and 121 illustrating an increase of 23% over the three years. Reported cases of train crew being drunk have however reduced over this period from 18 to 8 for drivers, and from 17 to 11 for guards per year.

112. The British Railways Board points out that in terms of the number of staff employed the incidence of drinking on duty is statistically very small, and that there have been only two serious accidents since 1972 when alcohol was the prime cause. The most serious accident concerned Driver Whittaker at Elsham (West Ridlington, Southern Region on 11th June 1972, which was the subject of an inquiry, but a strong smell of drink remained on the breath of Driver Tufts 9 hours after he had driven a freight train into the rear of a passenger train at Waddington on 12th October of that year. The driver had been drinking because he had been laid off work and had missed his first duty. Col. Robertson, who inquired into the first accident, recommended that the Railways Board should consider taking powers to enable their supervisory to demand a blood alcohol test at the time of an accident; he suggested that such a machinery would 'act as a considerable deterrent on drivers who are aware that I am going to be receiving my own Report on the second accident I commented---'had there existed the machinery there need have been no doubt about this aspect'... (i.e. that the driver had been drinking). The Board took no action on that occasion.

113. The British Railways Rule Book (see Appendix B) lays down that drivers may not drive for duty under the influence of drink and must not drink on duty. By his own admission Driver Allan, a senior and experienced driver who clearly knew what the rules were, drank both before and during his 12.5 hour shift. In his evidence the Board's Officers believe that he can deal with the problem under their own rule book more effectively than having to rely on statutory powers. I support them in this; Nevertheless, statutory powers have existed since 1840, and the 1842 Act is still the most used provision.

Various Statutory Powers

114. The relevant Sections of various Acts concerning drinking applicable to Railways (1852 and 1856 Acts) Merchant Shipping (the 1920 and 1979 Acts), Aircraft (the 1980 Order), and for the drivers of road
vehicles (the 1972 Act) are given in Appendix B. In every case except one, the law leaves a judgement to be made as to whether a drink has adversely affected a person's ability to operate safely. This includes Section 6 of the Road Traffic Act 1972. The exception is Section 6 of the Act which makes it an offence to drive with an alcohol level exceeding a prescribed limit. In the case of blood-alcohol tests, this is 80 mg/100 ml of blood; only a doctor can carry out such tests. In the case of Alcolmeter breath-alcohol test it is 50 microgrammes per 100 ml of breath; police staff can carry out these tests. This is not to say that levels of alcohol below those limits cannot adversely affect a person's driving, and convictions under Section 5 of the Act are not uncommon.

The Rule Book

115. The relevant extracts of the British Railways Rule Book are also included in Appendix B as a similar extract from the British Caledonian Airways—Operations Manual. They both ban the taking of alcohol whilst on duty but, whereas the Railway Rule forbids a person coming on duty under the influence of alcohol and ‘might impair their performance, the airline rule forbids any drinking for nine hours before an aircraft departs.

Breath, Blood or Urine Alcohol Testing

116. Following the accident, the British Railways Board were asked to say whether or not they contemplated taking powers to enable their staff to be tested. They were asked a number of questions and their replies may be summarised as follows.

117. Firstly they thought that their powers under their Rule Book Section 2.2.1, which enabled them to dismiss without notice, was a much more severe punishment than that available in statutory powers. They point out that it is their practice to suspend a person from duty for up to 5 days for the first offence (this in itself involves a 'fine' of the same order as that available under the Act), and to dismiss following a second offence. In Scotland suspensions may follow if alcohol is used on a person's behalf.

118. The Board felt that powers to test for alcohol would unnecessarily reduce the impact of the Rule Book. They also felt that any level of alcohol below which action could be taken would not be taken. In this I believe they are confusing Sections 2 and 6 of the Road Traffic Act 1972; only in the latter section is any level defined. In any case their own Rule 1.2.2 implies a level of intoxication which has to be judged, and which puts a considerable burden on their own supervisors, such as Masters, Captains and Paul in this case. The Board says that the powers of supervisors are already adequate in 'clear-cut' cases, but one has to say that Driver Officer Ian's case was a 'clear-cut' as they envisage.

119. The Board attach great importance to the support of the Committee and all the Trade Unions to its policy and practice with regards to drinking on duty. They would be extremely loath to jeopardise that commitment. They point out that if they were to take the necessary powers themselves the Unions would be treating their members in a way that they were not used to treating. I have to accept that the incidence of drink amongst those who can affect Railways policy is statistically very low indeed, but I must point out that the cost of even one incident, as at Morpeth, can be very high.

120. The Board would like to achieve a situation 'for staff, particularly within working groups, to regard alcohol and drugs on duty as totally inadmissible', I fully support them in this but surmise that in Scotland they may still have some way to go before achieving it.

Other Industries

121. Drunkenness on larger vessels of the Merchant Navy can be dealt with on board, but a more serious situation exists amongst some smaller fishing vessels which may be 'owner-skipped'. I have studied a number of cases and, although they involved various drinking situations which generally led to little difficulty in obtaining convictions, I note a remark on the paper in the case of W. J. Grant when was convicted at Kirkwall Sheriff Court of being drunk on duty on board a fishing vessel in Grimsby, the police commented that he had no power to 'breathalise' a suspect in charge of a ship or fishing vessel but would find such a power useful.

122. In discussing the situation on the airlines with Mr. W. J. Campbell, the Flight Safety Advisor of British Caledonian Airways Ltd, he pointed out that airlines had very little problem. He attributed this to the fact that crew members, including pilots, navigator and engineers had to assemble for a significant period before each flight. For flight crews arranged to be a member of the crew to be under the influence of drink the fact would be easily detected by the others who would report the matter. Were any general power to be taken to enable staff to be tested for alcohol Mr. Campbell thought that the airlines could not object.

Signing On

123. In their paper on alcohol testing the Board accepts that signing on by telephone has been a common practice to help in large companies where it is not possible for all employees to be present for the formal procedure of reporting to work in small units to be supervised. I suggest, however, particularly to Edinburgh Waverley Station where, at the time of this accident one of the driver's apparently habitually signed on by telephone. This can hardly be described as "ratification".

124. I was therefore extremely glad to be told by Mr. R. D. Taylor on 4th July that, following the accident, it had been decided to completely overhaul the "signing-on" arrangement at Waverley. A new building is being built on the site where all train crews, including drivers, guards and supervisors will report prior to their train's departure. This will eliminate the need for 'walking time' allowance and will bring in close contact various members of staff and supervisors so facilitating the detection of those who have taken alcohol. It must be the practice that staff should remain in the building until the leave to join their trains. In spite of the fact that drivers will no longer have their own signing-on arrangements, Mr. Walker of ASLEF told me that he fully supported the development. This is the fifth major new signing-on facility in Scotland and one more at the planning stage.

Statutory Power to Test for Alcohol

125. The 1842 Act is limited in its application in that it can only be tried before a magistrate. The 1861 Act is based on "wilful omission or neglect" and the prosecution alleged that driver Allan allowed himself to 'nod off' having taken alcohol. Judge Kennedy referred to the Act's slightly earlier language, as it did, from the nineteenth century. I believe that there is a need to update these Acts so far as railwaymen are concerned to bring them into line with the intent of Section 5 of the Road Traffic Act 1972 and other similar Acts. Application of such an Act must still depend on a judgement being made of whether or not some take was done or does not affect a person's ability to carry out his duties safely and effectively.

126. I understand the Board's reluctance in not wishing to allow to air to air test on their own staff. And I support them in not wanting to and it would be inconsistent for it to apply to one grade of employee rather than to another, in particular for those who, as in the case of railwaymen, come under the same Act. But I recommend that powers should nevertheless be taken in a Public Act for three reasons. Firstly that there is no reason for any driver to be liable to a dock fine for any reason that is not a dock fine for any reason that is not a dock fine, secondly that is not a dock fine, thirdly that is not a dock fine for any reason that is not a dock fine, fourthly that is not a dock fine for any reason that is not a dock fine. Such a test could be taken in the presence of the police or in the presence of the police or in the presence of the police or in the presence of the police.

Secondly, it would give more support to those supervisors who, by the same token, and as I have said, have been drinking, wish to seek a second opinion. It would also protect those who have not been drinking. I was impressed by, and fully support, Supervisors Burke and Paul in their determination to apprehend men who have been drinking and who, in my view, should be treated in the same way as those who have been drinking on duty and who warrant the fullest support. My recommendation is therefore that they should be able to require a person to give a breath, blood or urine sample to prove, without doubt, whether or not that person had taken drink. This can be easily arranged through the British Transport Police in most cases. It was the blood/analysis test whilst Driver Allan was in hospital and the estimated analysis of Mr. King and Professor Rawlinson who brought the matter of this point to light. Driver Allan had then no other option but to admit it to Inspector King; and when asked by me who had admitted it he could only reply "I was the simplest thing to do". It should be noted that the case of Driver Tiptoe in 1972 at Weymouth was not included in the British Railways statistics of drink cases.

The third reason for my recommendation, and I consider this to be the most important, is that I believe that the powers to test for alcohol would serve as a significant deterrent to those who smoke the Rule Book; in this I strongly support Colonel Robertson's recommendation, not then adopted, which he made in his Report into the Eltham (Well Hall) accident in 1972.

Summary of Recommendations

In the Short Term

(a) The extension of the rules for the provision of the 'Morpeth Warning' to include vaccinated restricted environments. No action has been taken on the Up line approaching Morpeth.

(b) The 'signing on' arrangements at Edinburgh Waverley have already been redesigned, and a new building will be available early in 1985. The practice of signing on by telephone will be banned and supervisors will have a much better chance of detecting those who have been drinking than before.
vehicles (the 1972 Act) are given in Appendix B. In every case except one, the law leaves a judgement to be made as to whether or not the person has, the ability to operate safely. This includes Section 6 of the Road Traffic Act 1972. The exception is Section 8 which makes it an offence for a person to drive with an alcohol level exceeding a prescribed limit. In the case of breath-alcohol tests, this is 80 mg/100 ml of blood; only a doctor can carry out such tests. In the case of Alcimeter breath-alcohol tests it is 50 micrograms per 100 ml of breath; police staff can carry out these tests. This is not to say that levels of alcohol below these limits cannot adversely affect a person's driving ability, and convictions under Section 8 of the Act are uncommon.

The Rule Book

115. The relevant sections of the British Railways Rule Book are also included in Appendix B as a further extract from the British Caledonian Airways-Operations Manual. They both ban the taking of alcohol whilst on duty but, whereas the Railway Rule forbids a person coming on duty under the influence of alcohol that 'might impair their performance', the airline rule forbids any drinking for nine hours before an aircraft departure.

Breath, Blood or Urine Alcohol Testing

116. Following the accident, the British Railways Board were asked whether or not they contemplated taking powers to enable their staff to be tested. They were asked a number of questions and their replies can be summarised as follows.

117. Firstly they thought that their powers under their Rule Book Section A.2.1, which enabled them to dismiss without notice, was a much more severe punishment than that available in other powers. They point out that it is their practice to suspend a person for 3 days for the first offence and for 7 days for the second offence. In Scotland suspensions may follow if a staff member is on a staff's personal use.

118. The Board felt that powers to test for alcohol would unnecessarily affect the impact of the Rule Book Section A.2.1. In the event of a breach below which action cannot be taken, this would be considered an ambiguity of the rules. The duty of a railway officials is to ensure that the railway staff is adequately trained to keep a safe and efficient service, even if it results in a lower standard of service.

119. The Board agree that powers to test for alcohol would support the commitment to the Trade Union to its policy and practice with regard to drinking on duty. They would be extremely loath to jeopardise that commitment. They point out that if they were to take the necessary powers themselves the unions 'would be reflecting their members' views in insisting that railwaymen were being singled out and that there was no longer the same standard of conduct'.

120. The Board would like to achieve a situation where staff would be under all circumstances, to regard alcohol and any other drink as totally inadmissible. I fully support them in this but I am surprised that in Scotland they may still have some way to go before achieving it.

Other Industries

121. Drunkenness on larger vessels of the Merchant Navy can be dealt with on board, but a more serious situation exists amongst some smaller fishing vessels which may be 'owner-skipped'. I have studied a number of cases and, although they all involved serious drinking situations which generally led to little difficulty in obtaining convictions, I note a remark in the papers in the case of W. J. Grant who was convicted at Kirkwall Sheriff Court of being drunk on duty or being drunk on a vessel in Grimsby Firth. The police commented that they had no power to 'breathalize' a suspect in charge of a ship or fishing vessel but would find such a power useful.

122. In discussing the situation on the airlines with Mr. W. J. Campbell, the Flight Safety Advisor of British Caledonian Airways Ltd, he pointed out that the pilots had a little problem. He attributed this to the fact that aircrew, including pilots, navigators and engineers, as well as cabin crew, would be a member of the crew to be under the influence of drink the fact would be easily detected by the others who would report the matter. Were any general power to be taken to enable staff to be tested by the police for alcohol Mr. Campbell thought that the airlines could not object.

Signaling On

123. In their paper on alcohol testing the Board accepts that signing on by telephone has been a common practice for a considerable number of years and no doubt it is the case even for those who have not been involved in an incident. I suggest, however, that Edinburgh Waverley Station, where, at the time of this accident, one of the driver's básically handed off by telephone, can be less effective.

124. I was therefore extremely glad to be able to ask Mr. R. D. Taylor on the 4th July following the accident, it had been decided to completely over-turn the 'signing-off' arrangement at Waverley. A new building is being built on the station where all the trains are controlled by a central computer, and as a result of this, the driver's will no longer have to come on their own signing-on arrangements. Mr. Walker of ASLEF told me that he supported the development. This is the fifth major new signaling station in Scotland and the third to be on the main line.

Statutory Power to Test for Alcohol

125. The 1842 Act is limited in its application in that it can only be tried before a magistrate. The 1861 Act is based on 'willful omission or neglect' and the prosecution alleged that driver Allan had failed to 'sign off' having taken alcohol. Judge Kennedy referred to the Act's slightly unfair language, as it did, from the 19th century. I believe that there is a need to update these two Acts so that it is unlawful for railwaymen to enter into line with the intent of Section 5 of the Road Traffic Act 1972 and other similar Acts. Application of such an Act must still depend on a judgement being made whether or not the drink taken was a reason or not a reason to affect a person's ability to carry out his duties safely and effectively.

126. I understand the Board's reluctance in wishing to test powers to test for alcohol, and that they would be, if they were to apply to one employee of an employee rather than to another, to one railwayman rather than to any other railwaymen, or to any group of people involved with the safe conduct of the railway service. But I recommend that powers should be taken in a Public Act for three reasons. Firstly the more I study the subject, the more I am convinced that we need to be more stringent in our policies. Secondly, it would give greater support to the Board's position. In my view, this is of great importance. Thirdly, it would be of material help in clarifying the position of rail transport officers in the future.

127. In conclusion, I recommend that the Board's position be strengthened by making it clear that they are not prepared to allow any employee to be under the influence of alcohol whilst on duty, and that any employee who fails to observe this rule shall be subject to disciplinary action. I also recommend that the Board consider the possibility of introducing a new system of testing for alcohol, which would be more effective and more convenient than the present system of testing.

Summary of Recommendations

In order to prevent a recurrence

128. In the short term

(a) The extension of the powers for the provision of the 'breathalizer' to include other situations, as well as the speed limit and alcohol detection device for Waverley Station, could be introduced early in 1976. The practice of signing on by telephone will be reviewed and improved to ensure that each driver is properly signed off.
(c) As discussed in paragraph 110, a more effective form of DSD or vigilance device should be provided.

(d) The British Railways Board should take note of the Railways' Rule that staff should not drink for a period before reporting for duty and should consider its application for their own staff.

128. In the Longer Term

(c) Powers are required to include the necessary provisions to require staff involved with the safety of others on the Railway to submit to a breath, blood or urine test:

(1) if, when signing on for duty there is doubt expressed as to their sobriety, or

(2) following an accident, if the taking of alcohol may have been a contributory factor.

Consideration should be given to extending the provision to those, not already covered in other forms of transport e.g. to bus conductors, and to those involved in sea and air transport and, possibly, in fishing.

(f) The 1842 Act should be replaced by an up-to-date Act in the modern idiom making it an offence for any railwayman to be so under the influence of alcohol or drugs that he jeopardises the safety of others. The 1861 Act should also be updated. Scales of punishment when cases are tried by magistrates or by higher courts should apply to all railways, without the need for Private Acts to update them.

OTHER RECOMMENDATIONS

129. In designing future sleeping-car stock, easier access for firemen should be provided in the event of a car overturning corridor-side uppermost. Corridor windows should be placed opposite to the pairs of doors.

REMARK

130. The General Manager of Scottish Region is fully informed of the disparity between the statement made by A. R. Campbell (the time clerk) (see paragraph 87) which was at variance with that made by Mr. Tulley who took the call, and has taken the necessary action.

I have the honour to be,

Sirs,

Your obedient Servant,

A. G. TOWNSEND-ROSE
Lieutenant Colonel

The Permanent Under Secretary of State
Department of Transport

APPENDIX A

Table: DRIED RELATIVES OFFENCES—OPERATING AND ENGINEERING DEPARTMENTS
ANNUAL CASES AND PERCENTAGE OF TOTAL STAFF BY REGION, GRADE OR DEPARTMENT AND YEAR

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Average per year

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APPENDIX A

DRIED, RELINQUISHED OFFICES—OPERATING AND ENGINEERING DEPARTMENTS

ANNUAL CASES AND PERCENTAGE OF TOTAL STAFF BY REGION, GRADE OR DEPARTMENT AND YEAR

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<tr>
<th>Year</th>
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Remark

The General Manager of Scottish Region is fully informed of the disparity between the statements made by A. R. Campbell the time clerk (see paragraph 87) which was at variance with that made by Mr. Tulley who took the call, and has taken the necessary action.

I have the honour to be,

Sir,

Your obedient Servant,

A. G. TOWNSEND-ROSE

Lieutenant Colonel

The Permanent Under Secretary of State
Department of Transport
APPENDIX B

STATUTORY PROVISIONS

RELEVANT SECTIONS—

REGULATION OF RAILWAYS ACT, 1842

17. It shall be lawful for any officer or agent of any railway company, or for any special constable duly appointed, and all such persons as they may call to their assistance, to seize and detain any engine driver, wagon driver, guard, porter, servant, or other person employed by the said or by any other railway company, or by any other company or person, in committing traffic upon the railway belonging to the said company, or in repairing and maintaining the works of the said railway, who shall be found drunk while employed upon the said railway, who shall commit any offence against any of the bye-laws, rules or regulations of the said company, or who shall wilfully, maliciously, or negligently, or purposely do or omit to do any act whereby the life or limb of any person passing along or being upon such railway or the works thereof respectively shall be or might be injured or endangered, or whereby the passage of any engines, carriages, or trains be, or might be obstructed or impeded, and to convey such engine driver, guard, porter, servant, or other person so offending, or any person assisting, aiding, or assisting in such offence, with all convenient despatch before some justice of the peace for the place within which such offence shall be committed, without any other warrant or authority than this Act and every such person so offending, and every person assisting, aiding, or assisting therein, as aforesaid, shall, when convicted upon the oath of one or more credible witnesses or witnesses before such justice as aforesaid, (who is hereby authorised and required, upon complaint to him made upon oath, without information in writing, to take cognizance thereof, and to act summarily in the premises), in the discretion of such justice, be imprisoned, for any term not exceeding two calendar months, or, in the like discretion of such justice, shall for every such offence forfeit to her Majesty any sum not exceeding ten pounds.

NOTE. The original penalty of £10 was raised first to £25 and then to £200 for British Railways by Section 15 of the BR Act of 1965 and Section 13 of the BR Act of 1977. The same increase was authorised on LRT under Section 34 of the LRT Act of 1965 and Section 13 of the LRT Act of 1977. The £200 penalty was translated into a Reference to Level 2 on the standard scale by virtue of Section 46 of the Criminal Justice Act 1982 and under the Criminal Penalties Act. (Increase) Order 1984. Level 2 is now £400 which is now the penalty in relation to BRB and LRT staff.

OFEENCES AGAINST THE PERSON ACT—1861

24. Whoever, by any unlawful act, or by any wilful omission or neglect, shall endanger or cause to be endangered the safety of any person conveyed or being in or upon a railway, or shall aid or assist therein, shall be guilty of a misdemeanor, and being convicted thereof shall be liable, at the discretion of the court, to be imprisoned for any term not exceeding two years, with or without hard labour.

MERCHANT SHIPPING ACT—1970

27. (1) If the master or any seaman employed in a ship registered in the United Kingdom:
   (a) does any act which causes or is likely to cause the loss or destruction of or serious damage to the ship or its machinery, navigational equipment or safety equipment, or the death or of serious injury to a person on board the ship;
   (b) omits to do anything required to preserve the ship, or its machinery, navigational equipment or safety equipment from loss, destruction or serious damage or to preserve any persons on board the ship from death or serious injury;

and the act or omission is deliberate, or amounts to a breach or neglect of duty, or he is under the influence of drink or a drug at the time of the act or omission, he shall be liable, on conviction on indictment, to imprisonment for a term not exceeding two years and to a fine, and, on summary conviction to a fine not exceeding Level 5 of the Standard Scale. (a).

28. If a seaman employed in a fishing vessel registered in the United Kingdom is, while on board the vessel, under the influence of drink or a drug to such an extent that his capacity to carry out the duties of his employment is impaired, he shall be liable on summary conviction to a fine not exceeding Level 5 on the Standard Scale. (a).

Note: (a) Level 5 has a maximum of £2,000 (Criminal Penalties (Increase) Order 1982).


Drunkenness in Aircraft

47. (1) A person shall not enter any aircraft when drunk, or be drunk in any aircraft.

(2) A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink, or a drug to such an extent as to impair his capacity so to act.

ROAD TRAFFIC ACT 1972

(As amended by S.25 the Transport Act 1981)

5. (1) A person who, when driving or attempting to drive a motor vehicle on a road or other public place, is unfit to drive through drink or drugs shall be guilty of an offence, but in determining whether there was such a likelihood the court may disregard any injury to him and any damage to the vehicle.

6. (1) If a person:
   (a) drives or attempts to drive a motor vehicle on a road or other public place;
   (b) is in charge of a motor vehicle on a road or other public place after consuming so much alcohol that the proportion of it in his blood, urine or saliva exceeds the prescribed limit shall be guilty of an offence.

COMPANY RULES

British Railways—Rule Book

Section A. Employment and Discipline

1.2. Employees must:

1.2.2. Report for duty under the influence of intoxicating liquor or of any drug that might impair the proper performance of their duties. They must not consume intoxicating liquor or any such drug whilst on duty.

2. Discipline

2.1. The British Railways Board may at any time:

(i) suspend an employee from duty whilst investigations are proceeding prior to the employee being given a hearing at which he can state his case;

(ii) after giving the employee the opportunity to state his case, dismiss without notice, suspend from duty as a disciplinary measure, reduce in grade, transfer to another post or station which may or may not involve a reduction in grade, or suspended or recall travel facilities for any of the following offences:
   (a) being found under the influence of drink or drugs.

British Caledonian Airways—Operations Manual

A. No alcoholic drink is to be consumed by any aircrew whilst in uniform.

B. No alcoholic drink is to be consumed by aircrew for a period of at least 9 hours before the scheduled, rescheduled or estimated time of departure of a flight during that duty period.
APPENDIX B

STATUTORY PROVISIONS

RELEVANT SECTIONS—
REGULATION OF RAILWAYS ACT, 1842

17. It shall be lawful for any officer or agent of any railway company; or for any special constable duly appointed, and all such persons as they may call to their assistance, to seize and detain any engine driver, wagon driver, guard, porter, servant, or other person employed by the said or by any other railway company, or by any other company or person, in obstructing traffic upon the railway belonging to the said company, or in repairing and maintaining the works of the said railway, who shall be found drunk while so employed upon the said railway, who shall commit any offence against any of the bye-laws, rules or regulations of the said company, or who shall wilfully, maliciously, or negligently or omit to do any act whereby the life or limb of any person passing along or being upon such railway or the works thereof respectively shall be or might be injured or endangered, or whereby the passage of any engine, carriage, or train shall be or might be obstructed or impeded, and to convey such engine driver, guard, porter, servant, or other person so offending, or any person assisting, aiding, or assisting to such offence, with all convenient despatch before some justice of the peace for the place within which such offence shall be committed, without any other warrant or authority than this act; and every such person so offending, and every person counselling, aiding or assisting therein, as aforesaid shall, when convicted upon the oath of one or more credible witnesses or witnesses before such justice as aforesaid, (who is hereby authorised and required, upon complaint to him made upon oath, without information in writing, to take cognizance thereof, and to act summarily in the premises), in the discretion of such justice, be imprisoned, for any term not exceeding two calendar months, or, in the like discretion of such justice, shall for every such offence forfeit to her Majesty any sum not exceeding ten pounds.

NOTE. The original penalty of £10 was raised first to £25 and then to £200 for British Railways by Section 35 of the BR Act of 1963 and Section 13 of the BR Act of 1977. The same increase was authorized on LRT under Section 34 of the LRT Act of 1965 and Section 12 of the LRT Act 1977. The £200 penalty was translated into a Reference to "Level 3" on the standard scale by virtue of Section 46 of the Criminal Justice Act 1982 and under the Criminal Precautions Act. (Increase) Order 1984. Level 3 is now £400 which is the new penalty in relation to BR and LRT staff.

OCCIDENTS AGAINST THE PERSON—1881

24. Whoever, by any unlawful act, or by any wilful omission or neglect, shall endanger or cause to be endangered the safety of any person conveyed or being in or upon a railway, or shall assist or consent in the same, shall be guilty of a misdemeanor; and being convicted thereof shall be liable, at the discretion of the court, to be imprisoned for any term not exceeding two years, with or without hard labour.

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27. (1) If the master or any seaman employed in a ship registered in the United Kingdom:

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(b) omits to do anything required to preserve the ship, or her machinery, navigational equipment or safety equipment from loss, destruction or serious damage or to preserve any persons on board the ship from death or serious injury;

and the act or omission is deliberate, or amounts to a breach or neglect of duty, he is under the influence of drink or a drug at the time of the act or omission, he shall be liable, on conviction on indictment, to imprisonment for a term not exceeding two years and a fine, and, on summary conviction, to a fine not exceeding Level 5 of the Standard Scale. (a).

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NOTE. (a) Level 5 has a maximum of £2,200. (Criminal Penalties (Increase) Order 1982).

THE AIR NAVIGATIONAL ORDER 1980-SI 1980 No. 1965

Drunkenness in Aircraft

47. (1) A person shall not enter any aircraft when drunk, or be drunk in any aircraft.

(2) A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink, or a drug to such an extent as to impair his capacity so to act.

ROAD TRAFFIC ACT 1972

(as amended by S.25 of the Transport Act 1981)

5. (1) A person who, when driving or attempting to drive a motor vehicle on a road or public place, is unfit to drive through drink or drugs shall be guilty of an offence, but in determining whether there was such a likelihood the court may disregard any injury to him and any damage to the vehicle.

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(b) is in charge of a motor vehicle on a road or public place after consuming so much alcohol that the proportion of it in his breath, blood or urine exceeds the prescribed limit shall be guilty of an offence.

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2.1. The British Railways Board may at any time:

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(ii) after giving the employee the opportunity to state his case, dismiss without notice, suspend from duty as a disciplinary measure, reduce in grade, transfer to another post or station which may or may not involve a reduction in grade, or suspended or recall travel facilities for any of the following offences:

(a) being found under the influence of drink or drugs.

British Caledonian Airways—Operations Manual

1. A. No alcoholic drink is to be consumed by any aircrew whilst in uniform.

B. No alcoholic drink is to be consumed by aircrew for a period of at least 9 hours before the scheduled, rescheduled or estimated time of departure of a flight during that duty period.
ACCIDENT THAT OCCURED AT 0040 ON SUNDAY
24th JUNE 1984 AT MORPETH.
THE UP LINE – TWEEDMOUTH–MORPETH
SUNDAY 24th JUNE 1984

Fig. 2b UP LINE ENLARGEMENT

Fig. 2a