MINISTRY OF TRANSPORT

RAILWAY ACCIDENT

Report on the Collision that occurred on 8th April 1969 at Monmore Green near Wolverhampton

IN THE
LONDON MIDLAND REGION
BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE
1970

MINISTRY OF TRANSPORT,
ST. CHRISTOPHER HOUSE,
SOUTHWARK STREET,
LONDON, S.E.1.

31*st July* 1969.

SIR,

I have the honour to report for the information of the Minister of Transport, in accordance with the Order dated 9th April 1969, the result of my Inquiry into the head-on collision between a passenger train and a freight train that occurred at about 14.26 on the 8th April 1969 at Monmore Green near Wolverhampton on the Stour Valley line in the London Midland Region of British Railways.

The passenger train concerned was the 14.15 4-car electric multiple-unit from Wolverhampton to Coventry. After passing at Danger the colour light signal protecting the entrance to Wolverhampton New Depot and running in a trailing direction through the points which were set for a movement into the depot, the train crossed from the Up to the Down line over a facing crossover and came into collision at a speed of about 45 m.p.h. with the 06.30 Class 7 Special freight train from Chesterfield to Wolverhampton, consisting of 32 wagons loaded with steel and hauled by a diesel locomotive, just as the latter was about to move under clear signals across the Up line and into the depot.

Immediately after the collision, in which the leading coach of the passenger train rode up through the cab and auxiliary equipment compartment of the diesel locomotive and came into contact with the overhead electric wires bringing out the circuit breakers, a fierce fire broke out in the wreckage.

The emergency services were promptly summoned by a member of the staff of a firm whose premises adjoined the line and the Fire Brigade and ambulances were quickly at the scene. I regret to report, however, that the drivers of both trains were killed, their bodies being trapped in the wreckage and not released until the following day. Thirty passengers, two railwaymen and a member of the Fire Service were injured and taken to hospital, but all were allowed to go home after treatment.

The uninjured passengers on the train were escorted from the scene down to a nearby street from where they were taken to Wolverhampton High Level station by a bus provided at short notice by the Wolverhampton Corporation Transport Department.

The collision caused considerable dislocation to traffic, the Stour Valley line being blocked for 48 hours, during which time through passenger trains were diverted via Bescot.

The day of the collision was warm and sunny with good visibility.

DESCRIPTION

Site and Signalling

1. The Stour Valley line between Birmingham New Street and Wolverhampton is double track throughout and is electrified on the overhead system at 25 kV. The plan attached to this Report shows the layout in the area of Wolverhampton High Level Station, 13 miles from New Street and at Monmore Green about a mile to the south where there is a facing crossover between the Up and Down lines and a trailing connection in the Up line leading to Wolverhampton New Depot. The crossover was a new facility installed in 1966, at which time control of the access to the Depot was transferred from a ground frame at Monmore Green to the signalbox at Wolverhampton. About 1½ miles further south, at Spring Vale, there are connections to sidings on both sides of the line where the arrangements for access to the sidings on the Up side from the Down line are similar to those at Monmore Green. About 3½ miles south of Wolverhampton, just to the north of Tipton, a non-electrified goods line, known as the Princes End branch, joins the Stour Valley line in a triangular junction controlled from Wolverhampton signalbox. This branch forms part of the route of freight trains approaching Wolverhampton New Depot from the direction of Walsall and beyond.

2. The track in the area is of 109 lb FB rail in 60 ft lengths on timber sleepers and the normal line speed limit is 75 m.p.h.; at the time of the accident, however, a temporary speed restriction to 60 m.p.h. was in force. There is a permanent speed restriction to 15 m.p.h. over all lines through Wolverhampton High Level Station and on the Up Stour line, after clearing the connections at the South end of the station, a restriction to 30 m.p.h. applies over a sharp right-handed curve as far as the 12½ MP. The facing crossover at Monmore Green, over which a permanent speed restriction to 15 m.p.h. applies, incorporates 1 in 10 crossings and "C" type switches. At Monmore Green the line is on an embankment about 20 feet in height.

3. The signalling in the area is controlled from a power signalbox located on the Up side of the line at the South end of Wolverhampton High Level Station. The panel is of the push-button "Entrance and Exit" route-setting type and incorporating point, signal, track circuit and train describer indications. The lines are track-circuited throughout and all running signals are 4-aspect colour lights and are provided with British Railways standard AWS ground equipment. Approach locking is provided on all routes and it becomes effective as soon as the signal has cleared. A controlled signal can be put back to Danger at any time by pulling the "Entrance" button for the route, but the route will not be released until 2 minutes has elapsed

in the case of running signals. In the special case of controlled signals provided with "Automatic" buttons to enable them to operate automatically when the signalman so wishes, the approach locking will only come into operation if a signal is placed to Danger in front of a train which is occupying one of the track circuits controlling the approach locking. If this occurs the route will be held until 3 minutes have elapsed.

4. After leaving Wolverhampton on the Up Stour Valley line the signal sequence is as follows. The first signal is WN 259, an automatic signal 882 yards in advance of the platform starting signals. It is located at the end of the sharp right-handed curve and from this point the line is straight for a distance of about 1¼ miles, the next two signals coming into view more or less simultaneously along the "tunnel" formed by the overhead line equipment. There is a falling gradient of 1 in 262 as far as Signal WN 115, a controlled signal provided with an "Automatic" button, protecting the connections at Monmore Green. This signal can only be cleared for movements along the Up line and is locked at Danger when the crossover (392 points) is reversed. The distance from Signal WN 115 to the trailing connection (391 points) is 289 yards and it is a further 141 yards to the facing end of the crossover in the Up line.

5. At Signal WN 115 the gradient changes to 1 in 645 rising and the next signal, WN 263, an automatic, is 723 yards ahead. Just beyond this signal the gradient steepens to 1 in 225, to a summit near MP 11. Beyond the summit, 1143 yards ahead of Signal WN 263, is Signal WN 275. This is a semi-automatic signal controlling the access to Spring Vale Sidings from the Up line. Beyond this again, but not shown on the diagram, is signal WN 177, protecting the access to Spring Vale Sidings from the Down line over a facing crossover, as at Monmore Green. Like Signal WN 115 it is provided with an "Automatic" button.

6. On the Down line, the signal authorising entry to Wolverhampton New Depot is a position light subsidiary to Signal WN 122, located 716 yards on the approach side of the facing crossover at Monmore Green. The subsidiary aspect is approach controlled and is released by occupation of a short track circuit on the approach side of Signal 122 for 15 seconds, thus ensuring that a train is at an appropriate speed for a movement into the Depot.

The Trains

7. The passenger train involved was the 14.15 from Wolverhampton to Coventry via Birmingham New Street. It had reversed at Wolverhampton after working its previous service, the 13.40 from Birmingham to Wolverhampton where it had arrived at 14.05. It was formed of a single 4-car EMU set of the AM10 class, built in 1965, of which the vehicles were of integral construction without separate underframes. It comprised, in the direction of travel, a battery driving trailer weighing 36¾ tons, a motor coach weighing 56¼ tons, a trailer weighing 31¼ tons, and a driving trailer composite weighing 33¾ tons. The train was fitted with disc brakes with electro-pneumatic operation with a total brake force amounting to 63 per cent of the total train weight of 158 tons. It had an overall length of 265 feet, with the leading and trailing pairs of coaches gangwayed together and was buckeye-coupled throughout. The guard's compartment, which was not provided with look-out arrangements, was located at the rear end of the second coach. The driving cab on this type of stock is the full width of the vehicle and 5 ft 8 inches in depth. It is not provided with outside doors but is entered through a sliding door from a transverse passage immediately behind it. There is no communicating door between this passage and the passenger accommodation but the partition between them is partially glazed. The glazing does not extend low enough, however, to give passengers a forward view from a sitting position. At the time of the collision the train was carrying about 80 passengers mainly in the rear two coaches.

8. The other train involved was the 06.30 Class 7 Special Freight from Chesterfield to Wolverhampton New Depot. It consisted of 32 wagons loaded with steel and a brake van. The first 6 wagons were equipped with the vacuum brake and connected to the locomotive as a fitted head. The estimated gross weight of the train, including the locomotive, was 791 tons.

9. The locomotive of the steel train was No. 1908 of Class 47, a Brush-Sulzer diesel-electric of 2750 h.p. weighing 117 tons, with a full width cab at each end without projecting nose. The cab was provided with outside doors on each side. On this type of locomotive the diesel fuel supply is carried within the locomotive body, one tank holding 500 gallons being located in the auxiliary equipment room at the No. 1 end, which was leading at the time of the collision and the other, holding 310 gallons in the boiler room at the other end of the locomotive.

The Course of the Collision and Damage Caused

10. The passenger train, after passing Signal WN 115, ran through the trailing connection to Wolverhampton New Depot and then entered the facing crossover whilst still travelling at speed. The actual point of collision was on the Down line 67 yards South of the crossover and 564 yards ahead of Signal WN 115.

11. The impact was violent. The body of the driving trailer of the passenger train rode up over the buffer beam of the diesel locomotive of the freight train and swept through and destroyed the cab and auxiliary equipment room rupturing the 500 gallon fuel tank and riding up over the main engine compartment to come into contact with the overhead line equipment, ending up above the contact wire over the Up line.

12. Though the cab end of the driving trailer was crushed back to the first bay of seating of the passenger accommodation, the main portion of the body of the vehicle retained its general shape and the three passengers travelling in it were able to escape with only minor injuries; it remained coupled to the adjacent motor coach,

which sustained lesser damage, though the leading end was stove in and lifted off its bogie. There was only slight superficial damage to the two rear coaches.

13. Everything above the front buffer beam of the diesel locomotive of the freight train as far back as the front of the main engine was demolished and swept away in the collision and the rear cab was stove in by the leading wagon of the train. Both the leading vehicle of the passenger train and the diesel locomotive were further damaged by the fire which started in the wreckage after the collison and both were assessed as beyond repair.

14. Only minor damage was done to the track and signalling equipment and no overhead electrical structures were demolished though considerable damage was done to the catenary and contact wire over both Up and Down lines. The collision caused the oil circuit breakers to operate and this was recorded as happening at 14.26.

15. The two railwaymen who lost their lives were Driver W. A. West stationed at Coventry, driving the passenger train and Driver G. Pack of Burton-on-Trent, driving the diesel locomotive of the freight train. Both were killed instantly in the impact. The secondman of the diesel locomotive jumped clear at the last moment and escaped serious injury.

Evidence

16. *Signalman W. E. Hadley* booked on duty in Wolverhampton signalbox at 13.45. He described the train movements on the Up and Down Stour Valley lines up to the time of the collision. On the Up line the first train he dealt with was an Up Express from Manchester to Euston, due to leave Wolverhampton at 13.49. It was running a little late and actually left at 13.53. At this time there were Up freight trains ready to leave at both Monmore Green and Spring Vale so as soon as the express had cleared Signal WN 115 he took the signal off automatic working and set up the route for the freight train out of Wolverhampton New Depot. He carried out exactly the same manoeuvre at Spring Vale as soon as the express had passed Signal WN 177, the freight train from Spring Vale coming out on to the Up Stour Valley line ahead of the one from Monmore Green. After the departure of the latter he had restored Signal WN 115 to automatic working.

17. On the Down line the first train was the 13.40 from Birmingham. It was on time and, running under clear signals, arrived at Wolverhampton at 14.05. This train terminated at Wolverhampton and formed the 14.15 to Coventry from Platform 2. Following this train was a Down express due in Wolverhampton at 14.15. After the express had passed Tipton, Signalman Hadley reset the route behind it to allow two freight trains waiting on the Princes End branch to follow one another out on to the Down Stour Valley line. The leading freight train was destined for Walsall Street Depot, so as soon as the express had passed Signal WN 122 he took it off automatic working ready to set up the route across the Up line into the Depot. The second freight train was for Spring Vale and it also had to move across the Up line. Signalman Hadley explained that in the normal way both these freight trains would have been held until after the departure of the 14.15 from Wolverhampton but, after the departure of the Up express at 13.53 from platform 3, a track circuit failure had occurred which had resulted in the route from Signal WN 97 to Signal WN 259 remaining locked and making it impossible to set 385 points for the EMU train to depart from platform 2.

18. At 14.15, when the Coventry train was due to depart, the track circuit failure had not been corrected and he did not know how long the delay would last. He therefore decided to clear both the freight trains across the Up line. He therefore put Signals WN 115 and 177 to Danger and set the routes from the Down line at Signal WN 182 into Spring Vale Sidings and from Signal WN 122 at Monmore Green into Wolverhampton New Depot. This he did at about 14.22, at which time the EMU was still standing at Signal WN 99, up to which it had drawn at its normal departure time of 14.15.

19. At about 14.24 Signalman Hadley received an assurance that the lineman had set 385 points for platform 2, and he shouted across to the station foreman who was standing at the end of the platform, "Tell the driver to pass that signal at Danger and proceed with caution". He then watched the train leave and he thought that it left very fast for a train that had just been cautioned. A few moments later he saw on the panel that the track circuit ahead of Signal WN 115 was showing occupied and almost at the same time the "out-of-correspondence" light for the siding points started to flash. He realised the train had passed the signal at Danger. Very soon afterwards the signalpost telephone at WN 263 rang and a voice said "All the wires are down and they are on fire". He thought at first that it was the driver of the EMU speaking but he afterwards learnt it was the guard of the freight train.

20. Signalman Hadley said that it was not his normal practice to shout instructions from the signalbox, but in this case he had done so because the station foreman was standing within earshot, to save further delay. He had expected the driver to leave slowly after being cautioned and, if necessary, call again from Signal WN 115. He had never authorised a driver to pass more than one signal at Danger at one time.

21. Also present in Wolverhampton signalbox was *Inspector Regulator L. Sproston.* When he took up duty at 13.58 he was informed of the track circuit failure and was told that the lineman had already been sent for. At 14.15 he realised that the failure had still not been restored and, on making inquiries, was told it might take a further 20 minutes to put it right. He therefore decided to make special arrangements to get the 14.15 train away and asked the lineman whether he could reverse 385 points. He then informed the station foreman of the reason for the delay and also spoke to the driver of the 14.15 train who had been standing for some time at Signal WN 99. He thought the driver looked annoyed at being delayed.

22. Inspector Sproston was aware that the route for the freight train from Signal WN 122 into Walsall Street Depot had already been set up by the time 385 points had been reversed, making it possible to get the 14.15 train away, but he took into consideration that the driver was going to be cautioned before departure. He heard Signalman Hadley pass the caution message from the signalbox window to the station foreman but he could not recall the exact words he used. The train then drew out and in Inspector Sproston's view went exceptionally fast for a train that had been cautioned.

23. On duty on the platform was *Station Foreman D. E. Arblaster*. He spoke with the driver of the 14.15 train while he was waiting at Signal WN 99 and it seemed to him that the driver was impatient at the delay. Arblaster passed on Signalman Hadley's message for the train to pass the signal at Danger, and the actual words he used were "Pass this one" (actually pointing to Signal WN 99), "and proceed with caution". The driver then got into his cab, saying as he did so, "We are going to miss our margin". The train then left and in Station Foreman Arblaster's opinion did not proceed with caution, accelerating rapidly away from the platform.

24. In charge of the 14.15 passenger train from Wolverhampton to Coventry was *Guard L. A. Williams*. He knew Driver West well and described him as a steady sort of person. They had both booked on that morning to work the 12.35 from Coventry to Birmingham and West had seemed quite normal. In Williams' opinion their departure from Wolverhampton High Level station was quite normal and he did not think the train was doing over 15 m.p.h.

25. Williams said he had tried to see the aspect of Signal WN 259, looking out from the offside of the train, but due to the bright sunlight and the curvature of the line he could not distinguish it. He did not look out to observe the aspect of Signal WN 115; however, the train's speed increased and he thought they had a clear road, until without warning the train lurched from side to side as it entered the crossover. He estimated its speed as it did so as about 45 m.p.h. He neither heard nor felt any indications of the brakes being applied before the impact occurred. He himself was thrown about and unable to reach the brake valve before the collision occurred. Fire had already broken out in the wreckage by the time Williams had jumped down and he at once set about assisting the passengers to escape.

26. Called out to look for the cause of the track circuit failure was *S & T Technician K. J. Mansell*. He found that it was due to a sliver of steel on the running edge of the rail bridging an insulated joint and had asked the permanent way staff to correct it. Whilst the fault persisted 385 points were locked so, at the request of the regulator on duty in the signalbox, he disconnected them so that he could move them when required by the use of an air key. He thought that it was about 14.20 that he had been asked to set them for the train to depart from platform 2.

27. *Permanent Way Inspector E. C. Lycett* explained that the track circuit failure had occurred because there was a lot of sidecutting on the rails concerned and metal swarf tended to be carried along and deposited across the insulated joints. It was not an uncommon occurrence in this particular location owing to the curvature. Mr. Lycett thought that trains leaving the station did not in general observe the 15 m.p.h. speed restriction and this led to increased wear.

28. Travelling as passengers in the leading coach of the passenger train were *Mr. and Mrs. Williams* of Tipton. They were sitting facing the direction of travel in the third bay of seating behind the driver. Mr. Williams described how the train moved up to the end of the platform at Wolverhampton and then stood there for some time before departing. It then went quite steadily for a time before starting to pick up speed. Then he saw the driver stand up and turn towards him, making his way into the cross corridor behind the cab. Mr. Williams stood up and looked ahead and saw the yellow front of a train coming towards them. He had just time to say to his wife "This is it", before the collision occurred. After the collison, the front of the coach was too high up to jump down from the side doors, so they made their way back and escaped through the displaced gangway connection at the rear of the coach. As they did so the flames were already leaping up on all sides.

29. Mr. Williams was unable to remember hearing a horn or bell or other noises from the cab before the collision. Mrs. Williams confirmed her husband's evidence and described the expression she saw on the driver's face as he turned towards them as one of bewilderment.

30. The secondman of the diesel locomotive working the freight train was *Senior Secondman J. Docherty* stationed at Burton-on-Trent. Since he had never worked a train over the Stour Valley line by daylight, he was particularly interested in the layout and signalling which Driver Pack was explaining to him as they went along. He was standing looking over the driver's shoulder as they approached Monmore Green and he saw the subsidiary signal clear as they approached it at about 5 or 10 m.p.h. As they approached the crossover which was set for their train he could see Signal WN 114 ahead at Danger but Driver Pack pointed out that this Signal did not apply to the move they were making. Docherty then saw a train approaching on the Up line and said, jokingly, to Driver Pack that he hoped it was stopping. Suddenly they realised it was coming on towards them and Docherty instinctively opened the cab door as the driver made a full application of the brake. The collision occurred almost at once, Docherty jumping down at the very last moment. As he landed at the lineside he was sprayed with burning diesel oil which was pouring down from above. He took his jacket off, already on fire, before trying to get back to help his driver but there was nothing he could do. It was only at this stage that Docherty realised that the other train was a passenger train so he went to the guard of the EMU to lend assistance.

31. In charge of the freight train was *Guard T. H. Wilkinson* of Burton-on-Trent. Shortly after passing Signal WN 122, where he had seen the subsidiary signal at clear for a movement into the Depot, he saw a flash and was thrown to the floor of his brakevan. Realising a collision had occurred he looked for the nearest telephone which was at Signal WN 263 on the Up line. He noticed that this signal was at Double Yellow. After reporting the accident and receiving an assurance that the power had been cut off and that nothing could approach he went forward to help the passengers from the wreckage.

32. *Assistant Area Manager F. B. Dunn* was notified of the collision at 14.35 and made his way to the site by car. On arrival the emergency services were already there and preparing to fight the fire which had broken out after the collision. After ensuring that all the passengers were being attended to Mr. Dunn checked on the train crews. He found that everyone could be accounted for with the exception of the two drivers. When he reached the site he noted that Signal WN 263 was showing Double Yellow and a little later he walked back to Signal WN 115 which was then showing a Red aspect. On the way he noted that the cross-over points were reversed and up tight but that the trailing connection in the Up line had been run through.

33. After the collision a thorough examination of the signalling in the area was made by *Mr. K. G. Hincks, Testing Assistant to the Divisional Signal and Telecommunications Engineer at Birmingham.* He reached the scene of the accident at 18.45 and confirmed that 391 points had been run through while in the reverse position. He then tested the signals protecting this connection, WN 115 and 259 from the location cabinets controlling the signalling and the lineside cables back to the signalbox. He found no faults on the signals or the associated AWS ground equipment. In the signalbox he obseved that the route from Signal WN 122 into the Depot was still held by the route locking. The signal had been cancelled but otherwise the locking was intact with points 391 and 392 reversed. The route lights were still showing on the panel but the "out of correspondence" light for 391 points was flashing. He then carried out full interlocking tests between Signals WN 122 and 115. The approach release time for the former was 15 seconds and the approach locking release for the latter 205 seconds, 25 seconds longer than the 3 minutes laid down for this signal.

34. Mr. Hincks then carried out tests reproducing the conditions that existed after the departure of the Up Express from Wolverhampton High Level station with the route from Platform 3 still held and track circuit 230 showing occupied. He then set 385 points for Platform 2 using the air key in the same way as had been done for the 14.15 train. The approach locking on Signal WN 115, which extended back beyond Signals WN 97 and 99, was still complete and effective.

35. The brake and AWS equipment on the 3 rear coaches of the EMU was examined after the collision by *Rolling Stock Inspector G. H. Bates.* All was in proper order with the pads of the disc brakes well above minimum thickness. In the leading coach the complete master control incorporating the deadman's handle was destroyed, as was the AWS equipment. The driver's brake handle was found in between the "lap" and "automatic" positions but, in view of the impact damage, Mr. Bates thought that this was not significant. The most recent periodical inspection of the set had been carried out at Bletchley on 29th March when it had been given a 14-day examination.

36. Four drivers who had worked the EMU set concerned on different duties earlier the same day confirmed that the brakes, AWS equipment and DSD had all been in good order.

37. In view of the evidence of Driver West's impatience at being delayed at Wolverhampton I asked for inquiries to be made to see whether this could be accounted for, and also for any other information about his character and background which could throw light on the circumstances of the accident. These inquiries were made both of Driver West's family and of his colleagues at Coventry depot. The picture they formed was of a responsible and level-headed man, extremely fit for his 62 years, home-loving, and a keen gardener. He was temperate in his habits, a non-smoker and certainly not in the habit of drinking when on duty. These inquiries did reveal however, that on the day of the accident Driver West had planned to go to a football match when he finished his turn of duty and that his wife had packed him food for both his lunch and his tea.

Subsequent Tests

38. On 17th April 1969 a series of trial runs were made between Wolverhampton High Level Station and Monmore Green with an AM10 EMU set similar to that involved in the collision, to determine the braking distance, measured from the crossover, for approach speeds of 45 m.p.h. and 50 m.p.h. In the former case the braking distance was 287 yards and the speed at the point of collision 33 m.p.h., in the latter case the braking distance was 349 yards and the speed at the point of collision 42 m.p.h. On a third run, to determine the maximum speed that could be attained after observing all speed restrictions leaving Wolverhampton, the speed at the crossover was 60 m.p.h.

CONCLUSIONS

39. I am satisfied that the sequence of movements as described by Signalman Hadley was correct and that the route for the freight train from Signal WN 122 into Wolverhampton New Depot was set up before the 14.15 train left Wolverhampton High Level station at approximately 14.24. The tests of the signalling carried out after the accident established that if Signal WN 115 had been cleared for the EMU, the route would have been held by the approach locking and the conflicting route could not have been set up. I conclude therefore that Signal WN 259 was at Yellow and Signal WN 115 at Red as the EMU approached and

passed them and that Driver West was solely responsible for the ensuing collision. I have no reason to suppose, either, that Driver West did not receive the proper AWS warning at each of these signals, and I can only assume that he cancelled them unthinkingly.

40. The evidence of the signalman, the traffic regulator and the station foreman confirm that Driver West was given authority to pass Signal WN 99 at Danger and instructed to proceed with caution. He was not given any instructions relating to any other signal. I do not believe that any driver, particularly one with Driver West's experience, would have deliberately passed a signal at Danger without the signalman's authority to do so and I can only assume that, as he approached Signal WN 115, Driver West was not paying attention to his job. It may be that the reason for this distraction was his anxiety about his chances of being late off duty and so upsetting his arrangements for the evening, and that he was working out in his mind how much of the lost time he could regain between Wolverhampton and Birmingham in the hope of making a right-time departure from New Street. His rapid acceleration away from Wolverhampton, as commented on by several witnesses, lends support to this theory.

41. I believe it is also relevant to consider the part that Signal WN 263 may have played in this accident and whether its Double Yellow aspect at the relevant time could have led Driver West to a false assumption that the line was clear ahead. The distance between Signals WN 115 and WN 263 is 723 yards, the latter being only 293 yards beyond the facing end of the crossover in the Up line. If Driver West had been so immersed in his own thoughts and speculations on the possibility of regaining the lost time that he completely failed to comprehend the message of the Red aspect of Signal WN 115, it could well be that, somewhere after passing the signal and before reaching the crossover, he returned to full awareness and, looking ahead, saw Signal WN 263 at Double Yellow and assumed that he could accept it as applying to his train. A fully observant driver might have been expected to have noticed the reverse lie of the siding points or to have heard the unusual clatter as they were run though by the leading bogie of the train, and a full emergency brake application made at this point, though it would not have averted the collision, would at least have minimised its effects, but it seems clear that Driver West allowed the train to continue unchecked until he was alerted by the violent lurch as it entered the crossover at speed. That he was fully conscious and aware of the situation at this stage is borne out by his last-moment attempt to leave his cab, witnessed by Mr. and Mrs. Williams.

Remarks and Recommendations

42. The circumstances of this collision show that, even with modern colour-light signalling and the assistance of the British Railways Automatic Warning System, accidents directly caused by drivers passing signals at Danger can still occur. Such accidents are always potentially serious and can often lead, as in the present case, to loss of life. As long as trains are manually driven and the driver depends upon the visual observance of signals some risk of such accidents occurring will continue, though a modification to the AWS cab equipment which requires the driver to select an appropriate cancellation button according to the aspect of the signal he is approaching should prevent a sub-conscious or automatic cancellation of the kind that must have occurred at Monmore Green. Such a modification of the standard AWS is now undergoing user trials in the Southern Region. It was described in detail by Colonel J. R. H. Robertson in his Report on the collision that occurred between Paddock Wood and Marden in the Southern Region on 4th January 1969.

43. As described in paragraph 41 above, it is possible that the proceed aspect displayed by Signal WN 263 could have misled the driver into thinking his way was clear ahead and that, if this signal had been at Red at the relevant time, the collision might have been averted or at least reduced in severity. I believe that there is a danger of this happening where, on the open line, an automatic signal which normally displays a proceed aspect is located only a short distance beyond a connection and clearly visible from a considerable distance in rear, as at Monmore Green, and I recommend that consideration should be given to the provision of controls on such signals to maintain them at Danger whilst the siding connection is in use until a train leaving the siding in the direction controlled by the signal concerned actually occupies its berth track circuit.

44. In conclusion I would like to draw attention to the protection afforded to the passengers travelling in the EMU passenger train by its design and construction in what was a collision of extreme severity. The leading driving trailer of the AM10 unit, weighing 36¾ tons, collided head on at a speed of about 70 feet-second with a 117-ton diesel locomotive hauling a train with a gross weight of approximately 800 tons. Although the driving cab was crushed and forced back to the first bay of seating, which was fortunately unoccupied, the remainder of the body of the vehicle retained its general shape and the passengers travelling in it escaped with only minor injuries. There was no telescoping between the vehicles of the train and the whole train remained upright and in line. This remarkable resistance to collision damage and deformation can be attributed to the unusually strong construction of the AM10 EMU vehicle, the body of which is combined with a flat underframe into an integral load-bearing truss, the roof and body sides above the windows forming the top chord and the lower body sides, floor and underframe forming the bottom chord of the structure.

I have the honour to be,

Sir,

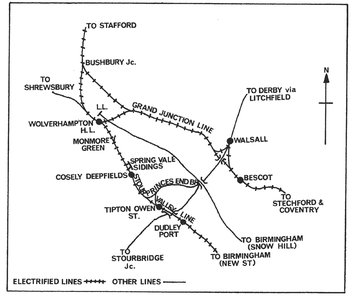
Your obedient servant,

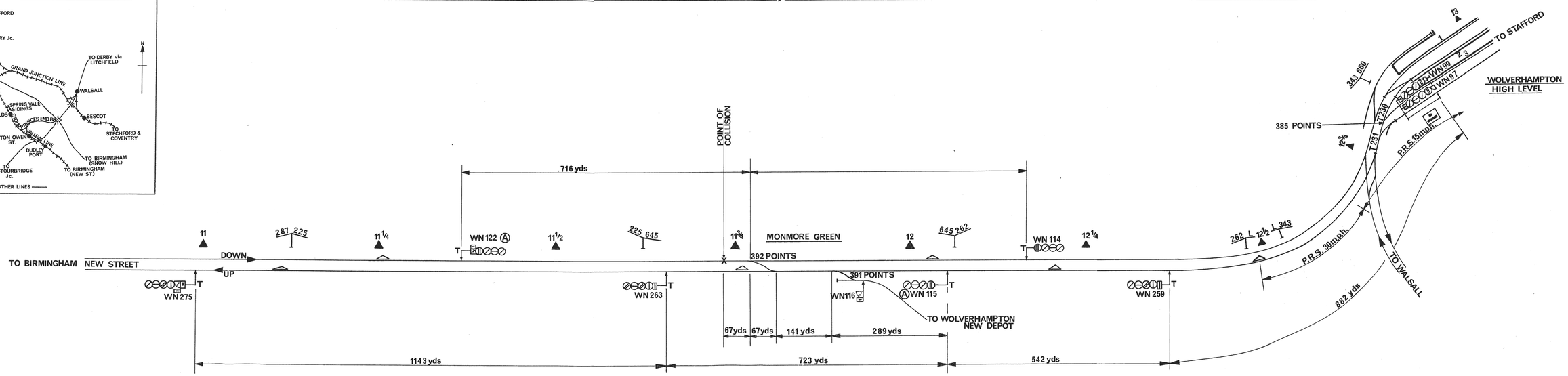
I. K. A. McNAUGHTON,
Lieutenant Colonel.

The Secretary,
Ministry of Transport.

Dd. 501174 K9 10/70 (7706)

COLLISION AT MONMORE GREEN, WOLVERHAMPTON 8th APRIL 1969.





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