



DEPARTMENT OF THE ENVIRONMENT

RAILWAY ACCIDENT

Report on the Collision that occurred on 15th March 1972 at Whittlesea

IN THE
EASTERN REGION
BRITISH RAILWAYS

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1973

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SIR,

I have the honour to report for the information of the Secretary of State, in accordance with the Order dated 16th March 1972, the result of my Inquiry into the collision between a diesel multiple-unit passenger train and a parcels train that occurred at 21.07 on Wednesday, 15th March 1972 at Whittlesea in the Eastern Region of British Railways.

Following a failure of all communication between Three Horse Shoes and Whittlesea signalboxes, the signalman at the former had introduced Time Interval Working on the Down Line. He admitted the 16.08 Yarmouth to Birmingham parcels train to the section at 20.46 and the 18.38 Colchester to Peterborough passenger train 16 minutes later at 21.02. The passenger train collided at a speed of about 25 miles/hr with the rear of the parcels train just as the latter was pulling away from a stand at the Whittlesea Down First Home signal causing severe rear end damage to the rear vehicle of the parcels train, which was displaced from its bogies, and also badly damaging the driving cab of the front vehicle of the passenger train, the leading bogie of which was derailed.

The driver of the passenger train, three passengers, and a guard travelling as a passenger suffered from shock and minor injuries. The Police and Ambulance Services were called out promptly, reaching the site at 21.24 and all the injured had been removed to Peterborough Memorial Hospital by 22.00. The driver was detained overnight and one passenger until Sunday, 19th March; none of the remainder were detained.

Both lines were obstructed as a result of the collision, but the Up line was cleared and single line working introduced between Whittlesea and Three Horse Shoes at 23.47. After rerailing was completed the Down line was reopened to traffic at 04.40 the following morning.

The cause of the failure of communication was discovered to be an attempted theft of copper wire from the lineside pole route from which 2 spans had been cut out and rolled up ready for removal. The lines were restored and normal working was resumed at 10.00 on 16th March.

The collision occurred on a clear dark night, with no moon.

DESCRIPTION

The Site and Signalling

1. The collision occurred in the section between Three Horse Shoes and Whittlesea of the double track line between March and Peterborough. The line, which is worked on the Absolute Block System, is straight with a slightly undulating profile and is maintained to Class "C" standards with a maximum line speed of 50 miles/hr. The Down direction of traffic is towards Peterborough, with mileages measured from Liverpool Street via Ely.

2. The signalbox at Three Horse Shoes stands on the Down side of the line at 91 miles 100 yards and is provided with semaphore Home and Starting signals and controls colour light Intermediate Block Home and Distant signals on the Down line towards Whittlesea. Between the Down IBH signal and the Whittlesea colour light Distant signal is located Eastrea Automatic Half-Barrier level crossing, the controlling signalbox for which is Whittlesea.

3. Whittlesea signalbox is located on the Down side of the line at 94 miles 1,209 yards opposite the East end of the Up platform of Whittlesea station. Whittlesea First Down Home signal, close to which the collision occurred, is 450 yards on the approach side of the signalbox and is provided with a berth track circuit 200 yards in length which exercises a Welwyn control on the Down Block instrument. The signal, which is an upper quadrant semaphore located 17 feet 6 inches above rail and provided with a sighting board, stands on the left of the Down line at a point where the gradient changes from rising at 1 in 230 to level and can normally be sighted clearly on passing the Distant signal 955 yards in rear of it.

The Trains

4. The 16.08 Great Yarmouth to Birmingham (Curzon Street) parcels train (3M21) was formed of 12 bogie vans and hauled by diesel locomotive No. 6726 of Class 37. All the vans were either BGs or GUVs of British Railways standard designs except the last vehicle, which was a wooden-bodied Siphon G (milk van) of GWR origin, No. W2991W. The train which was vacuum braked throughout, was 780 feet 6 inches in length, and weighed 462 tons including the locomotive.

5. The 18.38 Colchester to Peterborough passenger train (1B38) was formed of a 2-car diesel multiple unit set comprising a single power car, MBS No. 51207, coupled to DTC No. 56364. The total weight of the train, which was running with the driving trailer leading, was 57 tons; it was fitted with the 2-pipe quick-acting automatic vacuum brake and the available brake power was 76% of its unladen weight.

The Course of the Accident and the Damage Caused

6. Shortly after 20.00 on the evening of 15th March all communication between Three Horse Shoes and Whittlesea signalboxes was lost when the lineside pole route was cut by wire thieves. The first train to pass through the section in the Down direction was the 13.32 Liverpool Street to Edinburgh parcels train (3S38) which arrived at Three Horse Shoes at 20.24 and departed at 20.30. The next train was the parcels train involved in the collision (3M21) which arrived at 20.42 and departed at 20.46. The DMU passenger train then followed, arriving at 20.57 and departing at 21.02. The collision occurred approximately 5 minutes later, just as the parcels train was pulling away from a stand at Whittlesea First Down Home signal.

7. The actual point of collision was 55 yards on the approach side of the signal and the DMU came to rest, with its leading bogie derailed, 44 yards from the signal and 7 yards from the rear end of the parcels train which had become divided between the 3rd and 4th vehicles with a separation of 12 yards. The leading vehicle of the passenger train suffered severe frontal damage, the left corner of the cab being pushed back destroying the driver's control desk and distorting the sidedoor and panelling. The headstocks were bent and the left and right windscreens were broken though the centre one remained intact. Within the passenger saloons some seat cushions were displaced but there was no other damage.

8. The wooden bodied vehicle at the rear of the parcels train bore the brunt of the impact and was damaged beyond repair. It sustained severe rear-end damage to its bodywork, the main frame members were severely distorted and the trailing bogie was pushed forward some 6 feet from its original position. The remainder of the body of the van was distorted and pushed forward on the underframe. Other vehicles in the rear part of the parcels train sustained lesser damage. There was no significant damage to the track or to the signalling.

Rules and Regulations

9. The procedures to be followed by trainmen and signalmen in the event of the failure of Block Signalling Apparatus that were in force at the time of the accident were set out in Rules 56 and 127 of the British Railways Rule Book 1950, and in Regulations for train signalling on double lines by the Absolute Block System. The relevant extracts are reproduced at Appendices 1 and 2 to this Report.

EVIDENCE

10. The signalman on duty at Whittlesea Station when the failure of communication took place was *Relief Signalman G. H. Laud*. He discovered the block failure when attempting to give the "Train Entering Section" signal for an Up empty stock train at 20.05. He noticed that the block indicator had gone back to the "Line Blocked" position and he could get no reply to his bell signals. When he tried to ring the signalman at Three Horse Shoes on the circuit telephone the bell on the block instrument rang. He at once drew the attention of a signal technician, who was working nearby, to the failure. The technician assumed that someone was interfering with the wires between Whittlesea and Three Horse Shoes and he set off at once to investigate.

11. At about 20.30 Signalman Laud became aware of a Down train approaching from Three Horse Shoes, when he saw the Eastrea barrier indicator drop. When the train occupied the berth track circuit of his First Down Home signal, he cleared it and then signalled the train forward in the usual way. It was a parcels train (3S38) and it did not stop at the signalbox, which it passed at 20.36.

12. The next train he dealt with was an Up express (1E82) and he brought it to a stand opposite his signalbox at 21.05. At the time he was aware of the approach of another Down train since the Eastrea barrier indicator had dropped but, since the berth track circuit of the First Down Home signal was not yet showing occupied, he left the signalbox to advise the driver of the Up train of the loss of all communication and to warn him to proceed through the section with caution and to be prepared to stop at Eastrea level crossing if the barriers were not functioning properly. He authorised the driver to pass the Starting and I.B. Home signals at Danger and instructed him to draw forward so that he could advise the guard of the circumstances. When he had done this and was giving the train a green handsignal to proceed, he saw the other train approaching his First Down Home signal, so he ran back to the signalbox to clear the signal to allow the train to draw forward towards the signalbox. As soon as the overlap track circuit showed occupied, he restored the signal to Danger and almost immediately heard the sound of a collision. He at once sent the "Obstruction Danger" signal to King's Dyke for the Up line, recording the time as 21.07, and then ran towards the train to see what had occurred and to ensure that protection in rear was carried out immediately, lest a further collision should occur.

13. On duty at Three Horse Shoes was *Signalman R. J. Outlaw*. He was 24 years of age and had been a Class 4 signalman for nearly 6 years, during which time he had worked only at Three Horse Shoes. He had come on duty at 18.00, being rostered for a 12 hour turn of duty. He learned of the failure of communication between his signalbox and Whittlesea Station signalbox at 20.14 when, having received the "Train Entering Section" signal from March West for the Liverpool Street to Edinburgh parcels train (3S38), he was unable to obtain "Line Clear" for it from Whittlesea. The train arrived at the Down Home Signal at 20.24 and at 20.27 he received a telephone call from Whitmoor Telegraph Office to tell him that a total block failure existed between Three Horse Shoes and Whittlesea and that he should introduce Time Interval working under Regulation 25(a)(iv). He then lowered the Home signal for the train to draw forward to the signalbox. However he made no handsignal for it to do so and in fact it ran past the box and stopped at the Starting signal.

14. Signaller Outlaw left his signalbox and walked up the offside of the train towards the locomotive, where he met a man whom he took to be the driver. He told him he had no communication whatsoever with Whittlesea signalbox and that he should pass signals at Danger and proceed at caution to Whittlesea. Signaller Outlaw told me that he did not advise the guard of the 3S38 separately, but claimed that the latter was within earshot, leaning out of the rear cab of the locomotive. The train left Three Horse Shoes for Whittlesea at 20.30.

15. The next Down train to arrive at Three Horse Shoes was the Yarmouth to Curzon Street parcels train (3M21) and Signaller Outlaw decided to adopt a time interval of 16 minutes, 10 minutes more than the normal running time for a stopping passenger train or a parcels train from Three Horse Shoes to Whittlesea. He brought the train to a stand at the signalbox with a red hand signal and the secondman came up to his signalbox at 20.44 to sign the register under Rule 55. Signaller Outlaw told him that there had been a block failure with no communication and that he should tell the driver to proceed at caution. The secondman then rejoined the train which left at 20.46. Signaller Outlaw did not instruct the driver to draw the train forward so that he could advise the guard, but he said that he shouted, as the guard's van passed the signalbox, that there had been a total block failure. He noted as the train left that it was displaying a satisfactory tail light.

16. The next Down train was the 18.38 Colchester to Peterborough DMU passenger train (1B38) which came to a stand outside the signalbox at 20.57. The guard came up into the signalbox and signed the block register in accordance with Rule 55 and Signaller Outlaw claimed that he told him that there was a block failure with no communication whatsoever with Whittlesea and that he should pass his signals at Danger and approach Eastrea level crossing with caution. He did not mention time interval working but he did tell the guard that the last train had gone 16 minutes previously. He did not speak directly to the driver of the DMU at any time. The train left Three Horse Shoes for Whittlesea at 21.02 and, according to Signaller Outlaw, it seemed to be proceeding cautiously.

17. The driver of 3S38, the first parcels train, was *Driver C. H. G. Spridgeon*, stationed at Peterborough. After being brought to a stand at Three Horse Shoes Down Home signal it cleared and he drew forward to the Starting signal, receiving no hand signal from the signaller as he passed the signalbox. A minute or two later he looked out and saw a light on the offside of the train and noticed that the guard had got down from the rear cab of the locomotive and gone back to meet the signaller. He did not himself speak personally to the signaller, nor did he hear the conversation between the signaller and the guard, but the latter came up to his cab and informed him that there was a block failure between Three Horse Shoes and Whittlesea and that he was to pass all signals at Danger. He then went forward through the section at Caution with the guard riding with him in the leading cab, and paid particular care approaching Eastrea level crossing until he was satisfied that the barriers were working properly. The Whittlesea First Down Home signal was cleared as he was closely approaching it and he went forward without stopping at Whittlesea.

18. The guard of 3S38 was *Guard G. C. Gotts* of Ipswich. He confirmed his driver's evidence and said that when he went back to speak to the signaller on the sixfoot side of his train he was told that there was a block failure and that he could pass signals at Danger as far as Whittlesea Down Home signal. He was not told that there was no communication between the two signalboxes, nor was he told to stop and advise the signaller at Whittlesea of the circumstances. While speaking to the signaller he did not identify himself as the guard and accepted that the signaller might have thought he was the driver.

19. *Driver C. G. Prior* had taken over the locomotive of 3M21, the second parcels train, at March, leaving there at 20.33 and arriving at Three Horse Shoes Down Home signal, which was at Danger, at 20.42. When the signal cleared he drew forward to the signalbox, where he was stopped by a red hand signal, and sent his secondman up to the signalbox to carry out Rule 55. The secondman returned shortly and told him to pass all the Three Horse Shoes signals at Danger and proceed at Caution as there was a block failure and trains were running at 15 minute intervals. They left Three Horse Shoes at 20.46 and proceeded at caution and Driver Prior stopped at the 1B Home signal because his secondman was in doubt as to whether he had been told that it should be passed at Danger. However, the signalpost telephone was not working (its circuit was amongst those cut) and, after a short delay he went forward to Whittlesea, checking his speed to 5 miles/hr as he approached Eastrea level crossing, and reaching the Whittlesea First Down Home signal, which was at Danger, at 21.03. They stood for perhaps a minute before the signal cleared and then, while he was drawing forward towards the signalbox he heard a bang and felt a shock from the rear. He stopped at once and went back to speak to the guard, noting the time as 21.05 and then saw that his train had been run into from behind by a DMU passenger train.

20. Assisting Driver Prior was *Secondman N. D. Hart*, aged 18 and with 15 months footplate experience. He told me that he went to the signalbox at Three Horse Shoes to carry out Rule 55, as instructed by his driver, and the signaller told him that there was a block failure with no communication and that trains were being worked at a 15 minute interval. They were to proceed at Caution and pass all signals at Danger as far as Whittlesea Home signal. He then returned to the locomotive to convey this message to Driver Prior but admitted that he did not tell the driver that the signaller had said there was no communication between his signalbox and Whittlesea. Hart confirmed that Whittlesea First Down Home signal was at Danger as they approached it and was showing a good light and he thought that it was cleared almost as the train came to a stand.

21. The guard of 3M21 between March and Peterborough was *Conductor-Guard G. Smith* of Peterborough, who was riding in the rear cab of the locomotive. At Three Horse Shoes he saw the secondman go to the signalbox, watched him speaking to the signalman, and then saw him rejoin the locomotive. The train then started towards Whittlesea but Guard Smith was not aware that the signalman made any effort to advise him of the circumstances. Subsequently the train came to a stand at the IB Home signal and he saw the driver go to the signalpost telephone. The driver then came back and told him that there was a block failure and that he was not sure whether or not the signalman had instructed them to pass the IB Home signal at Danger. However, since he could get no reply on the telephone the driver decided to proceed into the forward section.

22. Guard Smith told me that they went through the section at a steady 20-25 miles/hr and came to a stand at the Whittlesea First Down Home signal at 21.04; the collision occurred shortly after the train started to move forward again. At first Guard Smith did not realize that it was a collision, because when he got down he found that his train had become divided between the 3rd and 4th vehicles and he thought that this had occurred because the driver had accidentally released the DSD. However, the driver told him this was not so and just then another guard who had been travelling as a passenger came forward and told them that a passenger train had run into the rear of the train. Guard Smith told me that he at once took steps to ensure that both lines were properly protected.

23. Evidence was given by *Leading Railman Hunns* who was on duty at March on the evening of the accident. He had helped to attach the Siphon G van to the rear of 3M21 and had placed the tail lamp on the vestibule lamp bracket on the platform side. The lamp was then showing a good light.

24. In charge of the colliding DMU passenger train was *Guard S. F. Mason*, stationed at Peterborough. He was riding in the guard's compartment in the rear vehicle of the 2-car set and when the train was brought to a stand at Three Horse Shoes he went to the signalbox to carry out Rule 55, signing the block register at 20.57. The signalman then told him that there was a block failure and that they should pass the starting signal and the IB Home signal at Danger, but be prepared to stop at the Whittlesea Home signal. He did not inform him that there was no communication between Three Horse Shoes and Whittlesea, nor did he mention Time Interval working nor the need to observe caution approaching Eastrea level crossing, and Guard Mason assumed that the situation was what he described as "a normal run-of-the-mill block failure" meaning that the signalman was, for some reason, unable to clear his signals though he was still in communication with the box ahead.

25. Guard Mason then rejoined his train and walked through to the leading cab where he passed the same information on to his driver, adding a personal warning to him to stop if he saw anything else ahead. He told me he said this because he did not like having to pass signals at Danger. He then returned to the guard's compartment and from his impression the speed of the train did not exceed 40 miles/hr on the way from Three Horse Shoes to Whittlesea. He felt no brake application or other warning before the collision, as a result of which he was buried under the parcels traffic in the van. He was helped out by another guard travelling as a passenger and then, after satisfying himself that his driver was not seriously hurt and that the opposite line was not obstructed by his train he went straight back to protect it in rear from the possibility of another train following.

26. The driver of the DMU passenger train was *Driver H. E. Lacey*, stationed at March. He was 49 years old and had been a driver since 1967 after 6 years as a passed fireman. He was not well enough to be present at my initial hearing of evidence and I interviewed him subsequently in the presence of his trade union representative, after he had recovered from the shock and injuries he had received in the collision. He told me that he had travelled passenger to Stowmarket, where he had taken over the train at 19.18 to work it as far as Peterborough. He said that the DMU set was in good order, with the brakes working perfectly. At Three Horse Shoes he was brought to a stand at the Down Home signal and stopped again at the signalbox by a red hand signal. The guard went up to the signalbox to carry out Rule 55, and when he returned he told him that the block had failed and that he was to pass the Starting signal at Danger and the IB Home signal at Danger. He also told him that the parcels train had had time to clear, but Driver Lacey admitted that he did not gather from this that Time Interval working was in force or that there was no communication between Three Horse Shoes and Whittlesea. Driver Lacey confirmed that, before the guard left him to return to his compartment, the latter added a warning about being prepared to stop if he saw any red lights ahead.

27. Driver Lacey then set off for Whittlesea and he told me that he had accelerated away from Three Horse Shoes in a normal manner and was in top gear and running at about 40 miles/hr when he passed the IB Home signal. He then continued through the section at about that speed. Shortly after passing Eastrea level crossing, where the barriers were down and the red lights flashing, he picked up the Whittlesea Down Distant signal which was at Yellow. Then, as he coasted on towards the Home signal, he became aware that something did not seem to be quite right. He saw a red light ahead, not in the right position for the Home signal, and thought at first that it was a ground signal at Whittlesea. He then made up his mind that there was an obstruction ahead and that the light he could see was a tail light, so he made a full brake application and released the DSD intending to go back into the leading compartment to warn the passengers. There were no passengers in the compartment, however, and before he could take any further action the collision took place.

28. I asked Driver Lacey particularly whether at any time before the collision he had seen the Whittlesea First Down Home signal at Green when it was pulled off for the parcels train to proceed, but he was quite certain that this had not been the situation. He could not recall seeing the Home signal at all during the moments immediately before the collision.

29. I also asked Driver Lacey how it was that, if he was driving in such a way as to bring his train to a stand at the Home signal, he was still travelling at a speed of perhaps 25 miles/hr when the impact occurred at a point only 55 yards on the approach side of the signal. He told me that he thought he had been misled by the tail light of the parcels train. He had not at first recognised it as a tail light because he was not expecting to find another train in the section. He admitted that, if he had entered the section under the clear understanding that Time Interval Working was in force, he would have acted very differently and driven at a much slower speed.

30. The signal technician who was at Whittlesea when the failure of communication occurred was *Technician B. R. Loughton*. He had just completed rectifying a fault on the exit points from the Up yard and was telephoning the signaller to arrange for a test on the points when the latter advised him of the block failure. He went at once to the signalbox where he confirmed that a complete failure of all communications had occurred. He suspected that the lineside pole route had been cut or interfered with in some way so, after informing his supervisor, who in turn advised the police, he set off towards Eastrea AHB level crossing at 20.15. At Eastrea he found all in order and determined that the seat of failure lay between there and Three Horse Shoes signalbox. He eventually found that two spans each of 15 wires near the Three Horse Shoes Up Distant signal had been cut out. He found them rolled up and lying on the bank as if the thieves had been interrupted whilst trying to steal the copper.

Subsequent Tests

31. In view of the possibility that, in his approach to the Whittlesea First Down Home signal, Driver Lacey had been unsighted by the tail of the parcels train ahead of him, a series of sighting tests were carried out after dark on the approach to this signal.

- i. The distance between the colour light Down Distant signal and the Down Home signal was 955 yards and, with the track unobstructed it was possible to see the Home signal as soon as the Distant signal was passed. It then remained visible, showing a full clear red light without interference from background lighting over the whole intervening distance.
- ii. With a train standing at the Home signal with its rear end 220 yards back from the signal, the signal could be seen by the driver of a following DMU for only the first 350 yards past the Distant signal, thereafter it was obscured by the tail of the train ahead.
- iii. In a similar test with the rear of the train 160 yards back from the Home signal, the latter remained in view to a DMU driver for 500 yards after passing the Distant signal.
- iv. With the rear of the train only 60 yards back from the signal, a completely clear sight of the signal was obtained up to within 20 yards of the rear of the train ahead.

32. Though it was not suggested by Driver Lacey that there was any fault in the braking system of the 2-car DMU forming 1B38, a full brake examination and test was carried out on the unit subsequent to the accident. No faults were found.

Discussion

33. Though there are minor discrepancies in the evidence as to the actual time of the accident, due to variations between different watches and clocks, it seems clear that the distance of 3 miles 600 yards from Three Horse Shoes to the point of collision was covered by the DMU passenger train in about 4½ or 5 minutes, representing an average speed through the section of between 40 and 45 miles/hr. To achieve an average speed of this order, Driver Lacey must have driven his train at or near the maximum permitted line speed of 50 miles/hr over much of the distance. On this basis, the passenger train would have passed the Whittlesea Down Distant signal approximately 45 seconds before the collision took place.

34. The best assessment that I can make of the acceleration of the parcels train after the Whittlesea First Down Home signal was cleared is that it would have covered some 200 yards in the first 60 seconds, reaching a speed of about 10 miles/hr, and that it would have occupied the overlap track circuit of the signal some 15 seconds after the signal was cleared. Signaller Laud, in his evidence, said that he had restored the signal to Danger as soon as the track circuit showed occupied, and thus the aspect of the signal reverted from Green to Red at or about the moment that the passenger train passed the Distant signal 955 yards in rear. It is very unlikely therefore that Driver Lacey would have seen and reacted to the Home signal whilst it was in the clear position, the possibility of which is specifically covered in Rule 127 (xxiii).

35. From the tests described in paragraph 31 above, it also seems quite probable that Driver Lacey's view of the Home signal was obstructed by the tail of the parcels train from a point about 500 yards after passing the Distant signal right up to the moment of collision, and it was this that caused him to become a little disoriented during the few seconds before the collision.

CONCLUSIONS

36. The immediate cause of the collision lay in Driver Lacey's failure to observe Rule 127 (xxiii), under the provisions of which he was required to proceed through the section with caution. This rule applied whenever there had been a failure of block instruments and not only when there was loss of all communication. The degree of caution to be observed in any particular instance must depend on the circumstances, but it seems clear that Driver Lacey's judgement was at fault in running through the section at a speed of over 40 miles/hr on this very dark night, approaching Whittlesea Home signal too fast, and thus being unable to stop when he suddenly became aware of another train ahead of him. Nevertheless, the degree of caution that he observed was dictated by what he understood the situation to be between Three Horse Shoes and Whittlesea. He was not aware of the loss of all communication and had not considered the possibility of there being another train in the section ahead of him. Had he been so aware, the degree of caution that he would have observed, on his own admission, would have been greater and it is extremely improbable that a collision would have occurred.

37. For failing to ensure that Driver Lacey was fully aware that no communication existed with the signalbox ahead and that Time Interval Working was in force, the responsibility rests partly with Signalman Outlaw and partly with Guard Mason. At the public hearing of evidence it became clear to me that Signalman Outlaw finds some difficulty in expressing himself clearly and this, coupled with a lack of precision in the way he applied Regulation 25, meant that none of the trainmen concerned was properly cautioned before leaving Three Horse Shoes. If Guard Mason was not absolutely clear in his own mind about the actual situation between Three Horse Shoes and Whittlesea he should have questioned Signalman Outlaw about it so that he could give the proper instructions to Driver Lacey. I do not criticise the use of the guard as an intermediary to convey instructions in this instance, since the practice is permitted under the present regulations, but it is essential that an intermediary fully understands the instructions he is to pass on.

REMARKS AND RECOMMENDATIONS

38. It became very apparent during my Inquiry that there was a degree of uncertainty in the minds of almost all the trainmen concerned about the true meaning of "block failure". At various times such expressions as "ordinary block failure", "partial block failure", "normal block failure", "total block failure", etc., were used, all of which can mean different things to different people. When signalmen are advising trainmen in such circumstances, it is most important that they use only such expressions as have a clear and unequivocal meaning, and it is absolutely vital that trainmen should be made aware of the situation when there is no communication of any kind between the signalboxes concerned and Time Interval working in force. In this particular case, the contrast between the very clear instructions given to the driver of the Up train by the experienced relief signalman at Whittlesea and the imprecise instructions given by Signalman Outlaw at Three Horse Shoes was very noticeable.

39. Although Signalman Outlaw's lack of precision in applying Regulation 25(a)(iv) was the basic reason why the passenger train set off from Three Horse Shoes towards Whittlesea with Driver Lacey not appreciating that no communication of any kind existed between the two signalboxes, in my view some degree of responsibility for this must be placed on the lack of co-ordination between the wording of Rule 56 of the British Railways Rule Book, 1950 and Regulation 25 of the Regulations for Train Signalling on double lines by the Absolute Block System. Though the opening section of the former instructed trainmen on the precautions that they must take when advised by the signalman that the block apparatus has failed and trains are being worked on the Time Interval system, Clause (d) of the same Rule, applying to the signalman, made no reference to Time Interval working, nor did the expression "Time Interval" as such occur anywhere in Regulation 25. The signalman cannot be fairly criticised, therefore, if in advising trainmen of the failure of communication, he omitted to say specifically that trains were being worked on the Time Interval system. Equally, in the absence of such advice, the trainmen cannot be criticised for failing to apply the provisions of Rule 56.

40. I am pleased to be able to report, therefore, that in the revised version of the Rule Book which came into use in October 1972, the sections which have replaced the former Rule 56 are clearly headed "Working of Trains by Time Interval" and the chances of a similar misunderstanding occurring in the future should be much reduced. The relevant sections from the new Rule Book are reproduced at Appendix 3 to this Report.

41. On the other hand, although a cross reference to the Rule Book, Section K, clause 4.6 is now included in Regulation 25(a)(i) in the revised edition of the Regulations for train signalling on double lines by the Absolute Block System, there is still no specific reference in the latter publication to the working of trains by Time Interval. I recommend therefore that Regulation 25 of the Regulations for train signalling on double lines by the Absolute Block System, and for other methods of train signalling where appropriate, be amended to include a specific reference to the working of trains by Time Interval.

I have the honour to be,

Sir,

Your obedient Servant,

I. K. A. McNAUGHTON,
Lieutenant Colonel.

The Permanent Secretary,
Department of the Environment.

Extracts from the British Railways Rule Book 1950

56. On lines used by passenger trains, when Trainmen have been advised by the Signaller that the block apparatus has failed and trains are being worked on the time interval system (i.e., there is no bell or telephone communication with the signalbox ahead) track circuits or electrical depression bars provided at a home signal worked from the box ahead must not be relied upon by Trainmen to indicate the position of the train, and the following instructions must be carried out:

Failure of
block
Apparatus
and Tele-
phones

(a) Should a train be brought to a stand owing to a home signal being at Danger, Rule 55, clause (a), must be immediately carried out unless appliances provided for Trainmen to communicate with the signalbox can be made use of and an acknowledgement received.

(b) During fog or falling snow, and in clear weather where a good view cannot be obtained by the Driver of a train approaching on the same line, should a train be detained owing to the outermost home signal being at Danger, the Guard must immediately go back not less than 100 yards in the rear of his train and protect it by placing one detonator on the rail. After doing so he must at once rejoin his train. If there is a brake van (or brake compartment) on the train, the Guard must apply the brake before leaving the train. In the case of a light engine, the Fireman must carry out the duties of the Guard before complying with Rule 55, clause (a). In the case of a push and pull train unaccompanied by a Guard or Shunter the train must first be similarly protected by the man whose duty it is to carry out Rule 55 as laid down in clause (c) of that Rule.

In the case of trains or engines the driving cabs of which are single manned, the Guard, after protecting the train by placing a detonator 100 yards in the rear, must go to the signalbox. If, however, a telephone is provided at the signal at which the train is detained, the Driver must make use of this, and, if a reply is received it will not be necessary for the Guard to go to the box.

If a train is brought to a stand behind another train in the section, the rearmost train must be protected as previously described.

Drivers must not again start their trains after being brought to a stand until sufficient time has been allowed for the man protecting the train to rejoin it.

* * * * *

(d) To enable the provisions of clauses (a) and (b) to be carried out, the Signaller must in addition to advising the Trainmen of the block failure also inform them that there is no communication with the signalbox ahead.

127. The Driver MUST

* * * * *

(xxiii) when informed by the Signaller that the block apparatus has failed and permission has been given for the train to go forward, proceed cautiously as there may be an obstruction on the line or the section may be occupied by one or more trains. He must also not assume on approaching the signalbox ahead that the fact of the signals being in the clear position is an indication that the line is clear for his train

Failure of
block
Apparatus

* * * * *

APPENDIX 2

Extract from the Regulations for train signalling on double lines by the absolute block system

25. FAILURE OF BLOCK SIGNALLING APPARATUS

In the event of a failure of block signalling apparatus so that trains cannot be block-signalled in the ordinary way, steps must be taken immediately to have the apparatus put into working order and the following instructions observed in the meantime:—

(a) (i) Except as provided in clause (h) a train must not in any circumstances be allowed to pass a box into the section where the failure exists without having been previously brought to a stand and the Driver and rear Guard, also the Driver of an engine assisting in rear, if any, advised of the failure. Should there be no bell or telephone communication with the box in advance trainmen must, in addition, be advised of this to enable the provisions of Rule 56 to be complied with. The Driver or Drivers must also be instructed to pass at danger the signal controlling the entrance to the section ahead in accordance with Rule 38(b), and to proceed cautiously.

When a driver has been stopped at a box and advised by the Signaller of the failure, the Driver must be instructed to draw his train forward and bring it again to a stand with the brake van near to the box to enable the Signaller to verbally inform the rear Guard, and the Driver of an engine assisting in rear, if any, of the failure; the Driver of the train engine must also be told that, after this has been done, he must not start again until he receives a green handsignal from the Signaller.

(ii) The Signaller at whose box the block instruments and or bells have failed must advise the Signaller at the opposite end of the section concerned of the failure, by telephone. Where telephone communication is not available, the Signaller at the box in rear must instruct the Driver of the first train that is being cautioned to stop at the box in advance and inform the Signaller of the circumstances. During the period of the failure the Signaller at the box in advance must maintain at caution the Distant signal applicable to the line on which the failure exists.

(iii) When the bells only, or bells and block instruments, have failed and a telephone is available, the Signaller must send the necessary bell signals as messages on the telephone, for example:

Is †line clear for *	} †Description of the line to be given; for example up or down main, fast, slow or goods.
†line is clear for *	
*train entering section.	} *Description of train to be given.
*train out of section.	
†line is clear for * under the Warning Arrangement.	

A Signaller sending signals in this manner must satisfy himself that he is speaking to the Signaller who should receive the communication.

When the bells have failed but the block instruments are still available, these must be worked in conjunction with the telephone messages.

When the block instruments only have failed, the bell signals must be sent in accordance with these Regulations.

A train must not be allowed to enter the section until permission has been received from the Signaller in advance in accordance with these Regulations.

(iv) When the bells have failed and telephone communication is not available, a train must not be allowed to proceed until the time usually taken by the preceding train to clear the section plus an allowance for the train having been stopped and having run at caution, has elapsed. In no case, however, must a train be allowed to proceed with a less interval than six minutes unless the Signaller can clearly see that the block section concerned is clear throughout. Where there is a tunnel in the section, an interval of not less than ten minutes must be allowed between two trains unless the Signaller can satisfy himself that the tunnel is clear.

(v) In the event of a failure as described in paragraph (iii) applying to one line only, the normal signalling of trains must be maintained on the adjoining line or lines the block apparatus for which is in working order, but the Driver of the first train travelling on each such adjoining line or lines must be advised of the circumstances and instructed to proceed cautiously through the section.

In cases where trains on one line have to be worked in accordance with paragraph (iv), all trains on the adjoining line or lines must be stopped and the Driver of each train instructed to proceed cautiously. Trains, other than the first, on an adjoining line need not, however, be stopped and cautioned when the failure occurs on a line not worked in accordance with the Absolute Block Regulations.

(vi) When trains are signalled in accordance with paragraph (iii), all signals sent or received on the bell or telephone must be recorded whether the ordinary block signals are usually recorded or not, and when trains are being worked in accordance with paragraph (iv), the departure time of each train must be recorded.

APPENDIX 3

Extracts from the British Railways Rule Book, 1972

RULE BOOK

Section K. Detention of Trains on Running Lines

3. DUTIES OF TRAINMEN AND SHUNTERS (cont'd)

3.7 Working of trains by Time Interval

3.7.1 When the normal means of signalling trains is not available and there is no communication with the signalbox ahead, Trainmen will be advised by the Signaller that trains are being worked by Time Interval. The Signaller will also advise the Trainmen that track circuits or similar apparatus must not be relied on to afford the normal security.

3.7.2 Should the train be brought to a stand owing to a stop signal being at Danger the Guard or Shunter (or Secondman, where provided) must *immediately* go to the signalbox. If, however, a call plunger or a signal post telephone is provided, this must be used immediately but if it is not in working order the provisions of clause 3.2.2 or 3.3 of this Section, as the case may be, must be observed.

3.7.3 If a train is brought to a stand owing to the outermost stop signal being at Danger during fog or falling snow (and also in clear weather when the view of the Driver of a following train is restricted), the Guard must immediately go back at least 100 yards in rear of his train and protect it by putting one detonator on the rail. When he has done this, the Guard must go to the signalbox unless the driving cab is double-manned or the Driver has already made use of a telephone or call plunger and obtained a reply. On Track Circuit Block lines, this protection must be carried out if a train is brought to a stand at any signal and, when this has been done, the Guard must rejoin his train unless he is then required to carry out the provisions of clause 3.3.3 of this Section.

4. DUTIES OF SIGNALMEN (*cont'd*)

4.6 Working of trains by Time Interval

When trains are being worked by Time Interval the Signaller must so advise the Trainmen and they must also be told that track circuits or similar apparatus must not be relied upon to afford the normal security.