DEPARTMENT OF THE ENVIRONMENT

RAILWAY ACCIDENT

Report on the Derailment that occurred on 7th September 1972 at Clapham Junction

IN THE

SOUTHERN REGION

BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE

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RAILWAY INSPECTORATE,
DEPARTMENT OF THE ENVIRONMENT,
2 MARSHAM STREET,
LONDON S.W.1.
15th March 1973.

SIR,

I have the honour to report for the information of the Secretary of State, in accordance with the Order dated 8th September 1972, the result of my Inquiry into the derailment of a passenger train that occurred on 7th September 1972 at Clapham Junction in the Southern Region of British Railways.

At about 14.29 on 7th September 1972 the 14.05 passenger train from Chessington South to Waterloo, a 4-car electric multiple unit, having made its scheduled stop at Clapham Junction Up Main Local platform, passed at Danger the platform starting signal and was derailed on the crossover beyond it when the facing points moved under the train. The train was still travelling relatively slowly when it reached the points and the leading two cars only were derailed, but these blocked the Up Main Through, Down Main Through, and Up Local lines. Four passengers suffered minor injury and were treated on arrival at Waterloo and one passenger was taken to hospital in Balham suffering from shock. There were no injuries to staff.

The derailment occurred within sight of Clapham Junction "A" signal box and protection of the lines by signals and by the placing of detonators was carried out promptly. The derailment caused the traction current to be cut off automatically. Breakdown appliances arrived on site at 15.40 and re-railing was completed at 17.25. The Up Main Local line was reopened at 19.00, and both Through lines were reopened by 20.20. During the blockage Portsmouth line trains were diverted via Chertsey, Bournemouth line trains via East Putney, and other trains terminated short of their destination. A shuttle service operated between Surbiton and Hampton Court.

The weather at the time was dry with sunny intervals.

DESCRIPTION

1. The layout of the railway and the position of the relevant signals are shown on the drawing at the back of the report. Passing through Clapham Junction station the Up Main Local line follows a right hand curve of 33 chains radius and runs alongside platform 10. This platform is 736 ft long and has a 4-car stop mark some 344 ft from its northern end. The Up Main Local inner home (platform starting) signal is located on the ramp at the north end of the platform and 18 yds beyond it lies the facing end of a long crossover forming part of a double junction between the Up Main Local and Up Main Through and the Down Main Through and the Down Main Local lines. Both crossovers (Nos 12 and 13 points) were relaid in 1960 in new 109 lb/yd material but during the life of the layout some of the rails and timbers had been renewed: the facing switches on the Up Local line (12B) had been renewed in March 1972. Both crossovers were due for complete renewal during November 1972. All lines are electrified on the conductor rail system at 660V dc.

The Signalling

2. The lines concerned in the accident are worked in accordance with the Track Circuit Block Regulations. Running signals are 4-aspect colour light and shunting signals are of disc type. The Up Main Local inner home signal, No. WF.38, is a 4-aspect signal equipped with a 45° junction indicator having 5 lunar white lights for route 37—Up Main Local to Up Main Through. It is a controlled signal but can be set to work automatically with No. 38 lever reversed, as can the signal in rear, WF.39. Subsidiary signal WF.48, a single yellow aspect reading to No. 1 siding (West London), is mounted to the side of, and below, Signal WF.38. All points are electrically power operated and the time taken for switches to move from one position to another is approximately 3 seconds.

3. The signalling is controlled from Clapham Junction "A" signal box which is located on a gantry spanning the lines about 400 ft to the north of the London end of platform 10. The electrically interlocked frame has 103 miniature levers, of which 102 are working and one is spare. Where signals read to more than one route a separate lever is provided for each route. All signal aspects are repeated in displays above the signal levers: in the case of running signals the actual aspect is shown and for shunting signals the indication shows either "on" or "off". The position of points is indicated in similar illuminated displays, showing "N" for normal and "R" for reversed: illumination of one or other of these aspects proves that the point detection circuits are complete. Occupation of track circuits is shown on an illuminated diagram above the frame. Magazine type train describers are provided. The frame is worked by two signalmen, one working the Main lines and the other the Windsor lines.

4. The relevant controls on the signals and points concerned in the accident are as follows:

a. *Signal WF.39* (the Up Main Local outer home signal reading to Signal WF.38)
Locks No. 12 points Normal and Reverse
Locks No. 13 points when No. 12 points are Normal
Approach locked by occupation of TC "EY"

b. *Signal WF.38* (Up Main Local inner home—platform starting—signal)
Locks No. 12 and 13 points Normal
Approach locked by occupation of TC "EZ"

c. *Signal WF.37* (Up Main Local to Up Main Through inner home—platform starting—signal)
Released by No. 12 points reverse
Approach controlled by occupation of TC "EZ"
Approach locked by occupation of TC "EZ"

d. *No. 12 points*
Reversed locks Signal WF.38. Track locked by occupation of TC "FK" (the insulated joint between TCs "EZ" and "FK" is located 5 ft 4 ins from the toe of the facing points)

e. *No. 13 points*
Reversed locks Signal WF.38, and Signal WF.39 when No. 12 points are Normal

There are no timed approach lock releases at Clapham Junction "A" and the services of a technician are required in order to obtain the release of an electric lock.

The Train

5. The train was formed of 4-car Suburban Unit (4-SUB) No. 4632, having a Motor Saloon Brake Second at each end with a Trailer Second and a Trailer Saloon Second marshalled between them. The coaches were close coupled within the unit with single centre buffers and link couplings. It was fitted with Westinghouse brakes.

The Course of the Derailment and Damage Caused

6. The facing points at the London end of platform 10 were in the reverse position when the train reached them, and the leading bogie of the first coach took the route leading towards the Up Main Through line. The points then moved to the normal position so that the remainder of the train continued along the Up Local line. About 140 ft beyond the switches the rear bogie of the leading coach became derailed and this was followed by derailment of the leading bogie of the second coach. The train came to a stand with the first coach leaning over at an angle and straddling the Up and Down Main Through lines just underneath the gantry carrying Clapham Junction "A" signal box. Damage to the train was confined to the first two coaches on which the wheel tyres were bruised, power and light conduits were broken, and damage was caused to springs, solebars, and axleboxes. The derailment caused moderate damage to the crossovers and to signal cables, and the London end of No. 12 points (12A) were run through and damaged.

Evidence

7. At the time of the accident *Signalman H. W. Savage* was operating the Main line side of Clapham Junction "A" signal box. He was an experienced signalman, and had worked in this signal box for about 6 years. On 7th September he booked on duty at 13.30 and at 14.12 he was asked by the signalman at Wimbledon "A" box to divert Down Through line trains to the Local line. This was because the locomotive hauling the 14.00 Waterloo to Southampton Docks train had failed and the train was at a standstill on the Down Fast line at Wimbledon. It was a straightforward move, and one he had made on many previous occasions. His normal practice on receiving such a request was to replace his Local line signals to Danger, provided there were no trains approaching on these lines, and to reverse No. 13 points. He had done so on this occasion, although he could not remember exactly at what time he had first set his Local line signals to Danger.

8. The first train he diverted through No. 13 crossover was the 14.12 Waterloo to Bournemouth train and this was followed by the 14.20 Waterloo to Portsmouth. Both trains were running to time. The third Down train was the 14.22 Waterloo to Guildford via Woking. Savage told me that he set the route for this train by placing his Up and Down Local line signals to Danger. He distinctly remembered doing this, and that the signals set to Danger included Nos. 38 and 39, but he could not be sure at what stage before this he had cleared the Up Local signals: he thought that he had signalled a train through on the Up Local line between two of the diverted Down trains, but he could not remember the precise time. [Although normally two booking boys are employed in the signal box only one was on duty on the day of the accident, and he was booking Windsor Line trains only; there was thus no record in the signal box of this Up train, but one was due to pass Clapham Junction at the time and it would probably have been signalled through between the passage of the 14.20 and 14.22 Down trains.]

9. As the 14.22 from Waterloo was approaching signal WF.5 on the Through Line to the north of the station Savage saw that the Chessington train was approaching Signal WF.39 on the Local line to the south. Signal WF.39 was at Danger and was held thus by the locking which was effective so long as No. 13 points were reversed and No. 12 points were normal. In order to bring the local train into the station he therefore reversed No. 12 points and was then able to clear signal WF.39 to a single yellow aspect. As soon as the train arrived in platform 10 he replaced lever 39 to normal. At this stage the Down train was crossing over onto the Down Local line and he waited for track circuits FF and CE to clear so that he could return No. 13 points to normal and clear signal WF.38 for the Chessington train. He had not by then returned No. 12 points to normal although nothing prevented him from doing this once he had replaced lever 39. Shortly after the Down train had cleared the crossover he operated No. 12 points to normal but before he normalised

No. 13 points or cleared signal WF.38 the telephone rang and someone reported that the Chessington train was derailed. At the same time he noticed that most of the track circuits in the area of the crossover were showing occupied. He did not touch any of the levers and shortly afterwards the signal technician came into the box and examined the frame.

10. Signalman Savage was quite certain that all the indication lights for the signals and points had shown their correct aspects as he operated the levers. He was emphatic that he had not touched the levers for signals 37, 38, or 48 at any time after the Chessington train had passed signal WF.39. He had not seen the Chessington train come to a stand in platform 10 nor had he seen it leaving the platform. [The Main Line signalman's position in the signal box is at the north end and his view of the station is very restricted.] He had answered the telephone when the derailment was reported but had not realised that the person speaking was the train driver and he had not therefore challenged him with passing the starting signal at Danger. Finally, Savage told me that he had experienced no trouble with the points and signals concerned, either before or since the accident.

11. At the time of the accident *Technician-in-Charge M. F. Edwards* was in the mess room adjacent to Clapham Junction "A" signal box. He heard the sound of the derailment and made his way directly into the signal box where Signalman Savage explained the moves that he had made and said that, after bringing the Chessington train into the station by reversing No. 12 points and clearing signal WF.39, he had replaced this signal to danger and had just returned No. 12 points lever to normal when the accident happened. Edwards examined the Main Line part of the frame and noted that the only lever reversed was that controlling No. 13 points. The lever for No. 12 points was normal and showing the correct "N" indication: the levers for signals WF.37, 38, and 39 were also normal and all showing red aspect indications. Edwards then went outside and examined the points and signals. He found No. 13 points standing reverse and No. 12 points standing normal. The "B" end of No. 12 points (the facing end nearest to the station) was undamaged and fitting up properly, but the "A" end showed signs of having been run through although the switches were properly closed. Signal WF.38 was displaying a red aspect. On finishing his preliminary examination Edwards spoke to the driver of the derailed train and asked him what aspect he had received at signal WF.38. The driver had replied "Green. We had green aspects all the way up". Edwards then assisted with the testing of the signal equipment. He confirmed that none of the signalling connected with the Main Line part of the frame had given any trouble during the week preceding the accident.

12. The driver of the Chessington train was *Driver J. W. Orchard.* He was aged 36, and had driven trains on the lines passing through Clapham Junction during most of the period since he had qualified as a driver in 1964. On the day of the accident he signed on duty at 08.02. His previous turn of duty had finished at 16.00 on the previous day and he had had a normal night's rest. He was fit and well when he started work on the 7th September. He worked his normal roster during the morning and this included driving one train routed on the Up Local line through Clapham Junction, but this was not a stopping train. The signals on this occasion had been clear. Orchard told me that signal WF.38 was, in his experience, more often than not showing a green aspect but on occasions he had found it at Danger.

13. He described the journey with the 14.05 Chessington to Waterloo train as quite normal until the derailment occurred. After stopping at Earlsfield he had received a green signal, and approaching Clapham Junction signal WF.39 was displaying either a single yellow or double yellow aspect—he could not be sure which. The train had stopped in platform 10 with his cab opposite the 4-car mark, and as the train stopped he glanced ahead and saw the starting signal, WF.38, at green. He was not surprised at this, in spite of the caution aspect he had received at signal WF.39, because he had often passed a yellow signal and then found that the one in advance had cleared to green. The train was at a stand for one or two minutes and during this time he had had his head out of the cab side window and was looking back along the platform. He was not aware of any train crossing in front of him from the Down Through to the Down Local line. He then received the "right away" from the railman in charge of the platform and started the train, first looking forward where he saw that signal WF.38 was still at green. Shortly after passing the signal, at a speed he estimated at about 15 mph, he felt a jolt and realising that something was wrong he released the Drivers Safety Device handle which initiated an emergency brake application. The train came to a stand and he went back to the end of platform 10 from where he telephoned the signalman. He did not identify himself when he spoke to the signalman. He then looked at the track and saw that the switches at the facing end of No. 12 points were set for the Local line. At this point a signal technician spoke to him and questioned him about the signals. Orchard agreed that he might have said that he had received "green aspects all the way up" but he thought that his remark may have referred to the signals beyond the starting signal at Clapham Junction because he had seen that these were green.

14. I asked Driver Orchard whether he had continued looking towards signal WF.38 after he had started the train from platform 10. He replied "I was not looking at it the whole time but I looked at it before I started and I might have been looking ahead for the next signal or something". He had at no time observed the position of the facing points. He told me that had he seen the points reversed and set for the crossover with the signal cleared for the route along the Up local i.e., the signal with a proceed aspect but no junction indicator lights, he would have known there was something wrong and he would have stopped the train. He was quite sure that during the times he had seen the signal at green the junction indicator had not been illuminated. After the derailment he had not looked at the aspect of signal WF.38, nor had he discussed the accident with his guard or any of the platform staff.

15. The guard of the train was *Conductor Guard J. Fogarty*. With Driver Orchard he worked the 13.06 Waterloo to Chessington train and the same stock then formed the 14.05 Chessington to Waterloo. They had carried out a satisfactory brake test before leaving Waterloo. He knew Driver Orchard well and they had chatted before leaving Waterloo: Orchard had seemed his normal self with no apparent worries or preoccupations. They left Chessington on time and the journey to Clapham Junction was uneventful. He had travelled in his brake compartment near the back of the train. At Earlsfield he had seen the starting signal at green, but he had not observed signals between there and Clapham Junction. The train stopped at the 4-car mark on platform 10 and he got out onto the platform. From this position he could not see the starting signal. When station duties were complete he received a hand signal from the railman in charge of the platform, who was towards the front of the train, and gave the green flag signal to start. He rejoined the train and looked out of the window until the train was three quarters of the way out of the platform and then closed the window and sat down. Almost immediately he felt a severe brake application and the train stopped. He looked out and saw that the train was derailed. He went back to telephone the signalman, and had just got through when Driver Orchard joined him and took over the telephone. Fogarty then went to protect his train and in passing he saw that signal WF.38 was showing a red aspect. He had not seen the aspect of this signal as the train left the station. The train's departure had been a normal one and he thought its speed at the time the emergency brake application was made was between 15 and 20 mph. He had not subsequently discussed the accident with the driver or the platform staff.

16. The person in charge of platform 10 was *Railman C. Sadler*. He had worked on the platforms at Clapham Junction since 1964. On the day of the accident he was accompanied by another railman, who was under instruction. When the 14.05 Chessington to Waterloo train arrived it stopped at the 4-car mark. Sadler announced the train as stopping at Vauxhall and Waterloo, using the announcers microphone, and when all doors were closed he gave a handsignal to the guard to indicate that station duties were complete. Before giving the handsignal he glanced forward and saw the platform starting signal at green. The guard then waved his green flag and Sadler gave the appropriate handsignal to the trainee railman, who was standing near the front of the train, and who relayed the handsignal to the driver. Sadler did not see the driver looking out of his cab window, nor did he see any other train crossing over in front of the Chessington train. As the train left the platform he went into the staff room and shortly afterwards heard the noise of the derailment. He went back onto the platform and saw the train stopped just beyond the signal, which was then at Danger.

17. Sadler had only taken up duty on platform 10 at 14.23 and between then and the arrival of the Chessington train he thought that two other stopping trains had gone through. He had observed the starting signal for these trains and it had been green on each occasion. He had not looked at the signal when the Chessington train came in, only just before he gave the handsignal to the guard. During the time he had seen the signal at green on 7th September it had not had the white junction indicator lights illuminated. He had seen these junction indicator lights lit up on other occasions and he knew that they indicated a route set for the crossover. After the accident he had not spoken to either the driver or the guard of the derailed train, nor had he mentioned to anyone that he had seen the signal at green until the Regional Inquiry some days later.

18. The trainee railman was *Temporary Railman K. Adu-Poku* who had been learning platform duties at Clapham Junction since joining the railways in July. As the 14.05 Chessington to Waterloo train came in he was standing near the 4-car mark on platform 10 and he had glanced towards the platform starting signal which was at Danger. The previous train, also a stopping train, had gone through about 5 minutes before and Adu-Poku had watched the starting signal for this train. It had been green for the train's departure and had gone to red as the train passed it. After the Chessington train had been at the platform for one or two minutes Adu-Poku saw Railman Sadler give a handsignal and he relayed this to the driver. At this point he had glanced again towards the starting signal and as far as he could remember it had been showing two yellow aspects. Subsequently, at some stage, he had thought that he had also seen the signal change to green, and had made a statement to this effect, but he could not be sure and when I pressed him on this point he was not prepared to say that he had seen it at green. He was quite sure that at no time had he seen the white junction indicator lights illuminated. Shortly after the train had left he looked again in its direction and saw that it had come to a stand in a cloud of dust. The platform starting signal was showing red. He did not discuss the accident with anyone else until he made a statement at the Regional Inquiry. He had not noticed any other train crossing over onto the Down Local line whilst the Chessington train was at platform 10.

19. Evidence on the testing of the signalling after the accident was given by *Mr. F. Gregory, Area Signal Manager, Clapham Junction*. He had arrived at the site at 14.45 and noted that No. 13 points were reversed and No. 12 points were normal. The London end of No. 12 points (12A) had been run through whilst in the normal position. Mr. Gregory proceeded to test the signalling equipment and these tests continued until 22.00 that evening. The insulation of all cables connected with the signals and points concerned in the accident was tested and found to be within specified limits, and the mechanical and electrical locking, including the approach locking of signal WF.38, was checked in detail. At the conclusion of his tests Mr. Gregory was satisfied that there were no faults in the signalling equipment and that the interlocking was functioning correctly and as specified in the control tables.

20. At my request Mr. Gregory summarised the signalling moves permitted by the interlocking during the time that the Chessington train was at a stand in platform 10. He explained that with No. 12 points

reversed the signalman could at any time have operated lever 37. This would have cleared the platform starting signal but the junction indicator lights would also have been illuminated. With No. 12 and 13 points reversed he could at no time have cleared the signal for the Up Local line i.e., have obtained a proceed aspect on the signal without the junction indicator being lit. Conversely, the lever locking would have prevented him from operating No. 12 points from normal to reverse if signal WF.38 had been cleared, or from reverse to normal if the signal had been cleared for the crossover route (WF.37). Had he at any time cleared either WF.37 or WF.38 the approach locking, effective once the train had occupied TC "EZ", would have prevented him altering the route.

Conclusion

21. The disposition of the vehicles after the derailment and the pattern of damage to the permanent way show clearly how the accident happened. Signalman Savage must have returned the lever controlling No. 12 points to normal just before the front of the train reached the insulated joint immediately in front of the points, and thus before the track locking became effective, so that although the point motor operating contacts were made the switches had not started to move, or had only just done so, when the leading wheels of the train arrived on them. It is possible that the switches did not actually start to move until the leading bogie had passed completely over them, but even had they done so the wheel flanges would have held them closed against the action of the point motor until the leading bogie had passed whereupon the switches would have moved to the normal position and would have completed their movement by the time the second bogie arrived on them. With the leading bogie taking the crossover and the rear bogie continuing along the Up Local line the leading coach slewed sideways until its rear bogie derailed on the diamond crossing of the Down Main Through to Down Main Local crossover. The leading bogie remained on the rails, running through and damaging the trailing switches of the other crossover, which by this time were in the normal position.

22. I have no reason to believe that at the time of the accident there was any fault in the signalling system. It had functioned correctly before the accident, the thorough tests carried out by Mr. Gregory soon after the accident revealed no faults, and the equipment has continued to function properly since the accident. If the integrity of the signalling is accepted, as I think that it must be, certain important facts must also be accepted. Firstly, Signalman Savage could not have cleared signal WF.38 as long as No. 12 points were reversed, and these points *were* reversed at the moment when the front of the train passed the signal. Secondly, if Signalman Savage had cleared the signal for the crossover route (WF.37) the junction indicator lights would have been illuminated and he would not have been able to restore the points to normal, as in fact he did, unless he had first replaced this signal to Danger. Thirdly, the reversal of No. 13 points locks signal WF.38 at Danger and Signalman Savage would thus have had to return these points to normal, as well as No. 12, before he could have cleared the signal for the Up Local line.

23. In the light of these facts some of the evidence on the signal aspects must be mistaken. Driver Orchard observed signal WF.39, on the approach to the station, at caution but said that as he entered platform 10 signal WF.38 was showing green. The only other witness who looked at signal WF.38 at this time was Railman Adu-Poku and he said that he saw it at Danger. None of the witnesses then looked at the signal until just before the train was due to leave, at which time Orchard and Railman Sadler say that it was green and Adu-Poku thought that it was at double yellow but was not prepared to say that he then saw it at green. From the moment that the train started until it passed the signal only Orchard claimed to have kept it in view, although he was prepared to admit that he did not look at it during the whole of this time: in his own words "I was not looking at it the whole time ..... I might have been looking ahead for the next signal or something". After the derailment a number of witnesses saw the signal at Danger.

24. I am quite satisfied that, for the reasons given in paragraph 22, signal WF.38 was at Danger as the front of the train passed it. There remains the possibility that the signal was cleared at some earlier stage, and was seen thus by Orchard and Sadler. But the only way in which they could have seen the signal at green *without the junction indicator lights*—and these lights are unmistakable when illuminated—would have been if Signalman Sadler had returned No. 12 and 13 points to normal, after the 14.22 train from Waterloo had crossed onto the Local line, and had then cleared the signal for the Up Main line. But if he had done this he would then have had to release the approach locking before reversing No. 12 points (and the latter action would have restored signal WF.38 to Danger even if it had not already been restored by the signalman) and then to have moved the point lever once again to normal just before the train reached the points. At the same time, or very shortly afterwards, he would have had to reverse No. 13 points, because they were found in this position immediately after the accident. Although it would have been quite logical for Savage to have returned Nos. 12 and 13 points to normal after the 14.22 train had passed it would have been completely illogical for him to have then reversed both points again even if he had had time to do so: there was no other Down train approaching on the Through line. Savage said he did not operate the points and signals in this way and I have no reason to doubt him.

25. I conclude therefore that the accident resulted from the train's being driven past signal WF.38 at Danger and for this Driver Orchard must accept full responsibility.

26. Although a certain confliction in the evidence regarding signal aspects is understandable I found it hard to credit that Driver Orchard failed to see signal WF.38 at Danger. During the course of the Inquiry I travelled in the cab of a train forming the 14.05 Chessington to Waterloo and saw for myself that the signal is clearly visible from the 4-car mark on platform 10 and remains in view for nearly 20 seconds after the train has started. The only other signal easily visible from this position is the starting signal at the end of platform 12. As the train approaches signal WF.38 however other signals on the gantry north of the signal box, including that for the Up Main Local line, come clearly into view. There is thus the possibility that Orchard may have been looking at these rather than at his own signal although the impression that he was not looking ahead as he should is reinforced by the fact that the facing end of No. 12 points becomes clearly visible soon after the train has started and an alert driver would almost certainly have noticed that the points were set for the crossover. There is also the fact that the train travelled a considerable distance after derailment, bearing in mind its relatively slow speed when it started to take the wrong route: it is probable that the brake application was not made until the front of the train was well onto the crossover.

27. Driver Orchard was medically examined shortly after the accident. His physical condition was normal, his general health good, and his eyesight and colour perception excellent.

28. There is no doubt that driving suburban trains can become very much a matter of routine and observing every signal under these conditions requires a conscious effort. This is perhaps especially so in the case of starting signals where the driver may receive a "ready to start" signal from his guard or the platform staff even though the signal has not cleared. If he is not paying strict attention to the signals (and points) ahead, he could react subconsciously to the "ready to start" and be persuaded that the signal had in fact cleared. A review of many accidents caused by signals passed at danger shows a significant proportion in which starting signals were passed at danger after drivers had received a "ready to start" signal. The present Rules (BR Rule Book Section H.5) require the guard to give a "ready to start" signal, by flag or handlamp or bellcode, to the driver when station duties are complete and provided he is satisfied that all is in order. The guard is not however specifically required to observe signals before giving the "ready to start", although other Rules require him to keep a good lookout, especially when leaving a station.

29. At the time of the redrafting of the relevant part of the Rule Book, in 1966, the Inspecting Officers suggested to the Board that the new Rules might make it mandatory for guards to observe starting signals wherever possible and to delay giving the "ready to start" signal if the signal could be seen to be at Danger. The Board considered the suggestion carefully but concluded that such a change would weaken the clear and undivided responsibility placed on drivers to observe signals, and might indeed lead to dangerous misunderstandings between drivers and guards, especially in situations where the guards' view of the signal was only marginal. It was however agreed that the wording of the revised Rule should make it quite clear that the guard's signal to the driver is an indication that the train is ready for departure and not, as was perhaps implied in the 1950 Rule Book, a "signal to start".

30. As part of the present Inquiry I reopened the question of revising the Rules and discussed possible changes with the Board's Executive Director, Systems and Operations. I came to the conclusion that the Board's original view was justified and that on balance it was in the interests of safety to preserve the unequivocal responsibility placed on drivers to observe and comply with signals.

31. The Up Local line through Clapham Junction is provided with BR Standard AWS, but suburban trains are not fitted with this equipment. The magnet is in any case located to the rear of the 4-car mark and stopping trains would thus not necessarily benefit from the warning even if they were so fitted. With the SR AWS now being developed this disadvantage would be overcome and had the train been fitted with this system it is much less likely that the driver would have missed the signal.

32. The signalling system at Clapham Junction is basically of 1936 design, although many individual items of equipment are of much more recent date. When plans are prepared for the resignalling of the area I recommend that consideration be given to extending the track locking at No. 12 points, and at other points where the track locking is very short.

I have the honour to be,

Sir,

Your obedient Servant,

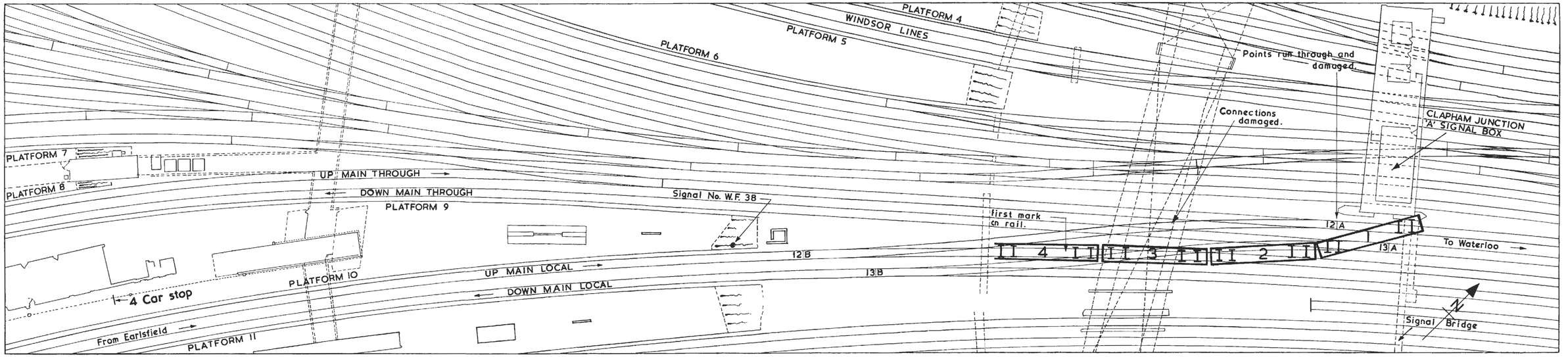
C. F. ROSE,

Major.

The Permanent Secretary,
Department of the Environment.

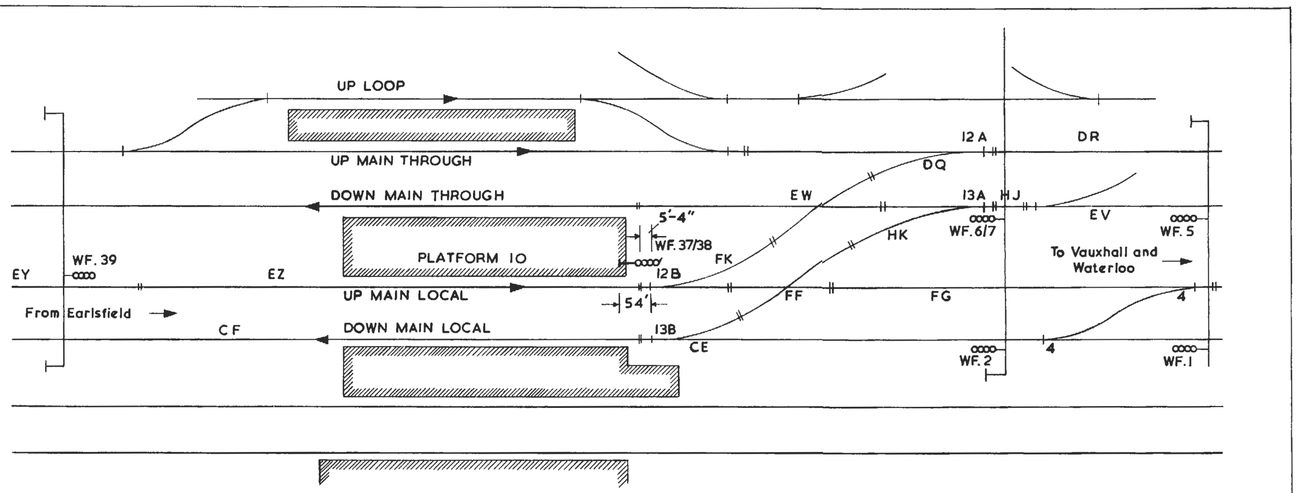
Dd 505883 K7 6/73 Ed (10266)

DERAILMENT AT CLAPHAM JUNCTION – S. REGION – ON 7 SEPTEMBER 1972



PLAN SHOWING THE POSITION OF THE TRAIN AFTER DERAILMENT

Scale: 40ft. to One Inch



PLAN SHOWING THE SIGNALLING

Not to Scale

THE TRAIN

4 SUB UNIT 4632

COACH	1.	S. 11342. S
	2.	S. 8912. S
	3.	S. 12372. S
	4.	S. 10873. S