



MINISTRY OF TRANSPORT & CIVIL AVIATION

**RAILWAY ACCIDENTS**

**REPORT ON THE COLLISION**

which occurred on

22nd October 1956

near

**LONDON BRIDGE STATION**

in the

**SOUTHERN REGION**

**BRITISH RAILWAYS**

LONDON: HER MAJESTY'S STATIONERY OFFICE

1957

THREE SHILLINGS NET

20th December 1956.

SIR,

I have the honour to report for the information of the Minister of Transport and Civil Aviation, in accordance with the Order dated 24th October 1956, the result of my Inquiry into the collision which took place at 8.31 p.m. on Monday 22nd October, outside London Bridge Station (Central Section) in the Southern Region, British Railways.

Owing to the failure of a track circuit it became necessary to hand signal a train from No. 20 platform past the starting signal at danger. This was the 8.15 p.m. electric train from London Bridge to London Bridge (via Tulse Hill, Crystal Palace and Forest Hill), but a verbal message from the signalman was wrongly transmitted and authority was given for the 8.24 p.m. electric train from London Bridge to Horsham to leave No. 19 platform.

The Horsham train ran for 525 yards at slow speed on to the Up Local line, where it collided almost head-on with the incoming 7.37 p.m. electric passenger train London Bridge to London Bridge (via Streatham, Selhurst and Norwood Junction) as it was passing through a crossover from the Up Local line to the Up Through. Both the motormen made emergency brake applications, and at the moment of the collision the Horsham train had practically stopped and the incoming train was only travelling at about 15 m.p.h.

There were about 90 passengers in the two trains, and 15 of them were slightly injured or suffered from shock; the four members of the train crews were also slightly injured. Calls for ambulances were sent out at 8.40 p.m. and the first arrived in six minutes. Eight of the injured passengers and the four railway servants were taken to Guy's Hospital for treatment but no one was detained.

Both the trains were close coupled 4-car suburban sets with ordinary side buffers and screw couplings at their ends, and the Westinghouse air brake was in operation on all the wheels. The two leading coaches met near side buffer to near side buffer. The leading headstocks were bent and the end panels were crushed but there was not a great deal of internal damage to the motormen's compartments. Damage to the remaining six coaches was slight.

The Up Local line circuit breaker at South Bermondsey sub-station opened immediately and it was closed at once in accordance with standing instructions. It tripped again, but after re-setting a minute later it remained in. There was no arcing at the scene of the accident and it was decided to leave on the power so that the carriages would remain lighted until arrangements were made to detrain the passengers. The power on the Up Local and Through lines was eventually cut off at 8.56 p.m., and the passengers were then detrained by emergency ladders and conducted to the station.

The two trains, although buffer locked, were not derailed; they were removed during the night, and normal working was resumed on the Up Local and Through lines at 3.30 a.m. Meanwhile there was considerable dislocation of traffic.

The night was fine and the rails were dry.

#### DESCRIPTION

1. London Bridge station is divided into four groups of platforms, of which the following two are relevant:—

- (a) the Central Section Main Line group, Nos: 12—17 platforms, served by the Central Section Through, Local and South London lines.
- (b) the South London group, Nos: 18—22 platforms, primarily served by the South London lines and with access to and from the Through and Local lines.

The six running lines serving these platforms are shown on the accompanying diagram, and they are named from North to South:—

Down Local, Down Through.  
Up Through, Up Local,  
Down South London, Up South London.

Approaching the station from the East the lines are practically level and straight. They curve to the left at the entrance to the station and then fan out through the controlling "sections" A—F to the South London and Central Section Main line platforms.

The other 11 platforms at London Bridge are in the Low Level and the Eastern Section groups.

### Signalling.

2. Multi-aspect colour light signals with continuous track circuiting are installed throughout the London Bridge area, and there are a number of 3-aspect automatic signals between here and Bricklayers Arms Junction. The relevant signals, track circuits, points, etc., are shown on the plan.

There are three groups of incoming running signals mounted on gantries. The outer home signals apply only to the Up Through and Eastern Section lines and they are not relevant to this case, but the gantry which is about 900 yards from the signal box also carries the Up Local automatic signal A.1. The intermediate homes are about 540 yards from the box and have route indicators of the "theatre" type which display the letter of the "section" to which the train is being routed. The inner home signals are located where the lines fan out to the platforms and have indicators which display the platform numbers.

The starting signals are mounted on posts at the ends of the platforms. Similar colour light signals known as platform intermediate signals are located about half way along the platforms. Provided that the line is clear between the two platform signals, the intermediate signal together with its route indicator repeats automatically the aspect displayed in the starting signal, or in the shunt signal on the starting signal post; the intermediate signals are held at danger if the platform line ahead of them is occupied. The South London group of starting signals lead directly to the Down South London line automatic signal A.2. on the intermediate home gantry or to the Down Local and Through first advanced starting signals on a gantry about 250 yards from the signal box. Two-aspect shunting or subsidiary signals showing red or green lights are provided either on a gantry or a signal post, or on the ground, e.g. No. 49.

3. All movements are controlled from one large power signal box just to the north of the Central Section group of platforms. This box contains 274 mechanically interlocked miniature working levers with 31 spares and 6 spaces. There are no unusual features about the interlocking and the controls; the running signals require the shunt signals ahead to be off in addition to the route being correctly set up and the appropriate track circuits being clear. The platform starters are approach locked by the platform track circuits and are back locked where necessary by the track circuits immediately ahead of them.

4. At the time of the accident the box was manned by five signalmen; one was in charge of the South London traffic, two were working the Central Section Main Line and Low Level platforms, and two were in charge of the Eastern Section. The Yard Inspector, who was normally in general charge, had gone to the Station Master's office to report on the day's working.

5. There is a comprehensive telephone system for communication between the signal box and the various offices, platforms, lineside signal telephones, etc. The link between the box and the South London section of the station is an omnibus circuit to telephones on the platforms.

### Table of Distances.

6. Relevant distances from the point of collision are:—

The front end of the Horsham train in No. 19 platform	...	525 yards West
No. 19 platform intermediate signal No. 21	...	504 .. ..
No. 19 platform starting signal No. 21	...	392 .. ..
Centre of signal box	...	356 .. ..
Shunt signal No. 49	...	162 .. ..
Station end of No. 51 crossover	...	118 .. ..

#### POINT OF COLLISION.

Country end of No. 166 crossover	...	13 .. East
Up Local Intermediate Home Signal No. 183	...	181 .. ..
Country end of track circuit No. 122	...	353 .. ..
Up Local automatic signal A.1. on the Outer Home gantry	...	556 .. ..

### Rules and Regulations.

7. Extracts from the various Rules and Regulations covering the action to be taken on the failure of a track circuit controlling a signal and on the passing of messages between signalmen and handsignalmen are given in the Appendix. These lay down that a handsignalman must be appointed when a signal controlling the section ahead is locked at danger by the disconnection of a track circuit, and that he must stand near the signal and warn drivers to proceed cautiously through the section. Before giving this signal he must satisfy himself that any facing points are secured in their proper position, that trailing points are also lying correctly, and that the signalman is so informed. Verbal messages from the signalman to the handsignalman must be carefully given, and the signalman must make sure beyond doubt that they are fully understood by the handsignalman.

At London Bridge there are special instructions to cover the case where the front of a long train is on the track circuit in advance of the platform starting signal, thus locking it at danger. In these circumstances the driver must not start until he receives verbal instructions from the person in charge of the platform, who must personally obtain the signalman's permission. A handsignalman need not be appointed in these circumstances, nor is it necessary for facing points to be secured, but the signalman before giving permission must satisfy himself that the line is clear and that the relevant point and signal levers have been correctly operated.

## SUMMARY OF EVENTS

8. The five platforms of the South London group were occupied by the following trains just before the accident: —

No. 18 platform	8.18 p.m.	2-car train London Bridge—Victoria.
No. 19 ..	8.24 p.m.	4-car train London Bridge—Horsham.
No. 20 ..	front section: 8.15 p.m.	4-car train London Bridge—London Bridge (via Tulse Hill, Crystal Palace and Forest Hill).
No. 20 ..	rear section: 8.45 p.m.	4-car train London Bridge—London Bridge (via Tulse Hill, Crystal Palace and Forest Hill).
No. 21 ..	8.20 p.m.	8-car train of empties London Bridge—New Cross Gate
No. 22 ..	8.37 p.m.	4-car train London Bridge— London Bridge (via Streatham, Selhurst and Norwood Junction).

9. At 8.14½ p.m. Signalman G. W. Maynard, who was in charge of the South London side of the London Bridge signal box, saw from the platform indicator that the 8.15 p.m. train was ready to leave from No. 20 platform. He accordingly set the route by reversing No. 35 trailing points and clearing No. 49 shunt signal. He followed this by pulling No. 17 starting signal lever and he thought that the aspect of the repeater turned to green, but half a minute later he noticed that it had returned to red with No. 140 track circuit showing occupied and No. 136 still clear. Maynard realised that No. 140 track circuit had failed and he asked Lineman R. R. Ashton to examine it. He followed this by speaking on the omnibus telephone to a member of the station staff on No. 20/21 platform. He told the man who answered him that there would be some delay owing to this failure, and that he would give further instructions later.

With the failure of No. 140 track circuit, the lever of No. 17 starting signal was back locked, and this held No. 49 shunt signal lever locked in the off position. These signals in turn locked Nos. 36, 48, and 51 crossovers in the normal position and consequently the route to the South London line could not be set for the trains in Nos. 18 and 19 platforms, and the starting signals from Nos. 21 and 22 platforms were also locked.

10. At 8.25 p.m. the lineman reported that there was nothing on the line and trains could pass over the length covered by the defective track circuit. Maynard again rang up the man on No. 20/21 platform and told him to hand signal the train from No. 20 platform to the Down South London line. Leading Porter Miller, who had also received the earlier message, misunderstood the signalman and was convinced that the 8.24 p.m. train to Horsham was to be sent first. Since he was not trained as a hand-signalman he passed the message to Station Foreman W. E. J. Mark, who was in a hut near the entrance to No. 18 platform. Mark, without checking the message nor securing the facing points in accordance with the rules, immediately authorised the guard and driver of the Horsham train in No. 19 platform to pass the platform starting and intermediate signals at danger and proceed on to the Down South London line at caution under the authority of a yellow hand signal which Mark exhibited beside the platform intermediate signal.

11. Dual Driver L. W. Penfold, who was in charge of the Horsham train, departed at slow speed, but instead of leaving by the usual route through section "B" the train went out via section "C". Penfold realised that something was wrong when he saw the green aspect of No. 49 shunt signal on the right instead of the left hand side, and a few seconds later he made an emergency brake application on seeing the approaching Up train. The outgoing train was brought practically to a stand, but by this time it was foul of No. 166 crossover.

12. The incoming 7.37 p.m. train London Bridge to London Bridge, which had a clear run from New Cross Gate, was due in No. 13 platform at 8.31 p.m. and its route from the Up Local line was through Nos. 166 and 165 crossovers to section "E" and thence to the platform. Approaching London Bridge at a speed of about 40 m.p.h. Motorman F. E. Brown saw automatic signal A.1 displaying a yellow aspect and he immediately reduced the speed. The intermediate home No. 183 was at red, but as soon as the train occupied No. 122 track circuit, the end of which was 172 yards from the signal, the aspect changed to green with the letter "E" displayed in the route indicator. Brown passed this signal at about 20 m.p.h. and further reduced the speed for No. 166 crossover. Just as he reached this point he saw the approaching Down train and realised there would be a collision. He made an emergency brake application, but this had hardly time to take effect before his train collided with the other at a speed of about 15 m.p.h.

13. Examination of the track after the accident showed that No. 41 points leading to No. 18 platform had been trailed through. There was no other damage and no signs of arcing or burns on the rails at the point of collision. The fault in the track circuit was traced to a broken connection in the wire lead-

ing from the rail to the signal box. It occurred in a length of concrete troughing where rats had gnawed away the insulation so that the exposed wire was corroded. This trouble occurs occasionally and although circuits are tested every six months faults of this kind do not usually come to notice until a break actually occurs. Records show that failures of track circuits from all causes at London Bridge have not been excessive considering the size of the installation.

#### EVIDENCE

14. Signalman G. W. Maynard explained that after advising Lineman Ashton about the track circuit failure he spoke to the staff on No. 20/21 platform by ringing the code 1-4 on No. 13 omnibus telephone circuit. He did not ask the name of the man who answered him but his voice was familiar and he assumed that he was one of the station staff. He told him "I have a track failure and I want you to stand by. I may have to hand signal the Crystal Palace". Maynard explained that by this he meant the 8.15 p.m. London Bridge to London Bridge train which was standing in No. 20 platform.

About ten minutes later Maynard shouted from the window of the signal cabin to the lineman who was still examining the track circuit and asked him "How is it looking down there?" The reply was "All right" so Maynard commented "I shall have to hand signal that one over the track", to which Ashton replied "Perhaps you had better". Maynard again rang the 1-4 code on the omnibus telephone, and on hearing the same man reply he told him "I want you to hand signal the Crystal Palace from No. 20 platform, one yellow 20 to Down South London, due to track failure". The voice replied "All right". Maynard admitted that he did not find out to whom he was speaking, nor did he ask for his message to be repeated. He knew that Rule 78(b) required that a handsignalman should secure the points and advise the signalman accordingly before allowing a train to leave, but Maynard explained that there were special instructions at London Bridge which permitted long trains to be started against fixed signals by hand signal only and he said that the same rule had been applied for starting trains against signals when there had been track circuit failures on other occasions.

At about 8.30 p.m. Maynard saw from his diagram that the 8.24 p.m. train was leaving from No. 19 platform. He realised at once that it would run on to the Up Local line, so he tried to attract the guard's attention and shouted to one of the other signalmen to exhibit a red light. He then gave the "Train running away wrong line" signal (2-5-5) to Bricklayers Arms Junction followed by "Obstruction Danger".

15. Signalman A. V. W. Beach, who was in charge of the Central Section Main Line group and was working near the omnibus telephone said that he heard Maynard speaking on this telephone to somebody, and although he did not pick up the whole of the conversation he thought Maynard said "All right, come off No. 20 one yellow". Beach confirmed that Maynard gave the 2-5-5 signal to Bricklayers Arms Junction and that "Obstruction Danger" was sent at 8.31 p.m.

16. Signalman W. E. Cooper, who was in charge of the Eastern Section group at the country end of the box said that he overheard Signalman Maynard telling the lineman about the track circuit failure, and later he heard him talking to someone else. He could not remember the exact words, but he thought Maynard said "That train on 20 all right to go. One yellow off 20".

17. During the temporary absence of Station Foreman Mark, Leading Porter Miller was in charge of the South London group of platforms. He confirmed that No. 20 platform starting signal was cleared for the 8.15 p.m. train, and that it returned to danger almost immediately. The omnibus telephone then rang, and he replied "South London" to indicate that he was speaking from that group of platforms. A voice from the signal box asked about the signal aspects and on Miller confirming what had happened, the signalman explained that there had been a track circuit failure and that Miller should stay near the telephone for further instructions.

Miller stated that at about 8.25 p.m. the telephone rang again, and that the same voice said "We want the 8.24 p.m. Horsham off platform 19 flagged out, one yellow Down South London". Miller was positive that he heard the message correctly, and that there was no interference or interruption on the omnibus circuit during the conversation. He agreed that he did not repeat the message to the signalman, but he added that as he had never received instructions in hand signalling trains he repeated the message to Station Foreman Mark, who was standing near his office opposite to the barrier at the entrance to No. 18 platform. Mark immediately went on to No. 19 platform and passed on the instructions to the Horsham train crew.

Miller agreed that there were other trains booked to leave before the 8.24 p.m. but said that he never thought of them and "I just did what I was told". It was suggested that the signalman might have said "Hand signal train off 20 for Down South London line one yellow", and this might have been mistaken for "Hand signal 8.24 Down South London line one yellow". Miller did not think this was so, although later he agreed he was not surprised to get such a message because the 8.24 p.m. Horsham train stopped at fewer stations than the others and would therefore get clear more quickly.

18. Station Foreman Mark said that at 8.0 p.m. he went to his office to telephone to the controller, leaving Porter Miller in charge of the South London group of platforms. While he was in his office he noticed that the 8.15 p.m. train had not departed and on speaking to the signal box on an automatic telephone in a nearby ticket collector's hut he was informed that a track circuit had failed. He therefore passed this information to the motormen of the trains on Nos. 18 and 19 platforms. A few minutes later

Miller arrived and told him that the signalman wanted "the 8.24 Horsham off 19 flagged out with one yellow down the South London". Mark said he was not surprised that this train was to leave first because it was faster than the others, and he accepted the message without question or confirmation. After warning the guard and motorman he gave the yellow hand signal and watched the train depart under caution. Mark admitted that he did not examine the track nor secure the facing points as required by the rules, and he could give no reason for his omission.

19. The evidence of the two train crews is summarised in paragraphs 11 and 12. They also confirmed that the brakes were tested and were working properly before the accident.

20. Yard Inspector J. E. Kayler, who was normally in charge of the London Bridge signal box, said that in accordance with his usual practice he went to the Station Master's office at about 8.5 p.m. to make out his daily reports. At 8.33 p.m. on hearing of the accident he instructed the clerk to advise the Assistant Station Master on duty so that emergency arrangements could be set in motion, and he himself went immediately to the signal box. He checked that the affected lines had been blocked and that collars had been placed on all relevant levers and then he went out to the scene of the accident. The power supply had not been cut off, and he decided to leave it on so that passengers could stay in lighted carriages until arrangements were made for their detrainment. He took this action because there was no sign of arcing and no derailment. Later the Area Inspector arrived and arranged for power to be cut off, after which the passengers were detrained and conducted to the station.

21. Relief Station Master R. H. Sprague, who was acting as Assistant Station Master, said he was in the Station Master's office when he was advised of the accident. After having a word with Inspector Kayler, he went on to the platform to find out what had happened. He took two or three minutes to get there from his office, and at about 8.40 p.m. after verifying that there had been a collision, he instructed the Platform Inspector to telephone for an ambulance. He did not think that the accident was serious and hence he did not send out an emergency call when he first heard about it. There was no sign of fire, but a call was sent to the Fire Brigade at 8.50 p.m. on the instructions of the Area Inspector.

#### CONCLUSION

22. The accident was due to a serious mistake in the transmission of a verbal message at a time when the failure of a track circuit held the South London line starting signals at danger. Signalman Maynard took prompt steps to overcome the difficulty by calling the lineman to examine the defective circuit, and after confirming the cause of the trouble he decided to despatch trains by hand signals. This was a correct decision, because it is a signalman's duty to take emergency action to reduce delays to traffic in such circumstances, but he failed to make sure that his instructions to the station staff were properly understood.

I have no doubt that Maynard intended the 8.15 p.m. London Bridge to London Bridge train to leave first, because the locking prevented him from setting up any other route, but the message he gave to Porter Miller was not clear. Maynard also omitted to find out to whom he was speaking and whether the man concerned was qualified to act as a handsignalman. He had assumed from his casual exchange of words with the lineman that there was no obstruction and he saw from the lever repeaters that the points were set in their correct position, but he did not check that a handsignalman had secured them in accordance with the rules. It seems, however, that the special instruction which permits a long train to be started by hand signal without securing the facing points has been accepted as applying to cases like this one.

23. Although Porter Miller was convinced that the message he received referred to the 8.24 p.m. Horsham train, I am satisfied that he misunderstood it. Since he was not trained in hand signalling duties he passed on what he thought to be the signalman's instructions to Station Foreman Mark, who accepted them without question and made no attempt to verify them; Mark also did not examine the track and secure the facing points, although he agreed he was familiar with the rules.

24. Primary responsibility rests with Signalman Maynard and Station Foreman Mark for their serious mistakes, but Leading Porter Miller must take some share of the blame for failing to check that he had correctly understood the vital message authorising the departure of a train by hand signal. Maynard, who has 31 years' service, has been a signalman for 28 years. Mark, who has 28 years' service, was a passenger guard before being appointed Station Foreman 14 months before the accident; Miller, who is a young man with less than three years' service, had been leading porter for nearly four months.

25. Neither motorman was to blame. Brown, who was in charge of the incoming train, had it under control as it approached No. 166 facing points where it was being diverted to Section "E". In these circumstances he could not tell that the outgoing train would cross his path, because even if he had seen its lights as it left the station he would have expected it to take the parallel movement through No. 51 crossover. Similarly, Penfold would not have realised that a collision was imminent until almost the last moment. He knew that there had been a signal failure and he left the station at caution. Although he suspected that something was wrong when he passed No. 49 shunt signal showing a green light on the right instead of the left hand side, he would not have realised that he was running on to the Up Local line until he had passed No. 51 crossover. He was probably travelling at about 15—20 m.p.h. at this time, and his emergency brake application was made just too late to stop the train clear of No. 166 crossover.

26. Relief Station Master Sprague did not appreciate at first the seriousness of the accident, and consequently the call for ambulances was not sent out until nine minutes after the collision occurred. Fortunately no one was badly hurt, and the delay was of little consequence on this occasion.

27. The electric current was not cut off automatically by short circuit and it was left on until arrangements were made for the detrainment of passengers. I do not consider that in the particular circumstances of this case Yard Inspector Kayler should be criticised on this account, because there was no derailment and no sign of arcing, and he thought it was better for the passengers to remain in lighted carriages rather than to be plunged into darkness. Even, however, where the damage from a collision on an electrified line is comparatively slight there cannot be absolute certainty that an electrical fault will not develop after the lapse of some time. The staff, therefore, must always be prepared to act with the utmost promptitude in the event of such trouble.

#### REMARKS

28. Verbal messages form part of the normal routine of railway working and errors in interpretation sometimes arise, but it is vital that mistakes affecting train operation should not be made. It is quite impracticable, however, to substitute written for verbal messages on all occasions, especially in emergency, and reliance must be placed on their accurate transmission by the individuals concerned. The instructions in the General Appendix to the Working Time Tables lay down that signalmen must ensure beyond doubt that messages are fully understood, but this can only be achieved by insisting upon their being given in clear and unmistakable language and on their being repeated by the recipients. I therefore recommend that these instructions be amplified accordingly, and that supervisors pay special attention to them. Unless this is done men will get into slack habits of work and speech as occurred on this occasion.

29. With the development of modern signalling controls it seems hardly necessary to secure power operated facing points by clips or scotches in accordance with Rule 78(b), when the points are rigidly locked by the mechanical operation of a point machine, which in turn has been locked directly or indirectly by a track circuit failure. In such circumstances a train might be allowed to pass a signal at danger without risk, provided always that the signalman satisfies himself that the line is clear and that the required points and signals have been correctly operated. I have no doubt that this practice was adopted without authority at London Bridge, and I have reason to believe that the same principles were applied at some other busy terminals equipped with power signalling.

It is bad for discipline to retain rules which are no longer needed on safety grounds, especially when they impose onerous delays to traffic, because staff and supervisors will tend to ignore them. The problem in this case is a difficult one, because the present Rule 78(b) must be retained wherever mechanical signalling is in use and it may also be needed for some types of electrical failure, but I consider that efforts should be made to devise a general instruction which will be more in keeping with modern signalling practice without adversely affecting safety of operation. I understand that, in the meantime, the issue of special instructions to cover the larger power installations in the Southern Region is under consideration.

I have the honour to be,

Sir,

Your obedient Servant,

C. A. LANGLEY,

*Brigadier.*

The Secretary,

Ministry of Transport and Civil Aviation.

## RULES AND REGULATIONS

The following extracts from the various Rules and Regulations give the instructions covering action to be taken on the failure of track circuits controlling signals and on the passing of messages between signalmen and handsignalmen:—

REGULATIONS FOR TRAIN SIGNALLING ON DOUBLE LINES  
WHERE BLOCK APPARATUS NOT PROVIDED

25A. (a) *Failure of track circuits except in tunnels*:—In the event of a failure of a track circuit controlling a signal which is being operated from a signal box, Rule 81, clause (b), will apply, and special attention is drawn to Rule 78, clause (c), and Rule 83. If the track circuit which has failed controls the most advanced signal worked from a signal box, a train must not be allowed to proceed until the time usually taken by the preceding train to pass clear of the defective track circuit has elapsed (in no case with a less interval than 3 minutes).

The Driver and Guard must be advised of the circumstances and the Driver must, in addition, be instructed to proceed cautiously.

In the case of automatic signals, trains will proceed in accordance with Regulation 25B.

## RULE BOOK 1950

81(b). When a track circuit, or other apparatus performing a similar function, fails, the provisions of Rule 77, clause (e) must be observed.

77(e). When a signal controlling the entrance to the section ahead is locked at Danger by the disconnection of a track circuit or other apparatus performing a similar function, the Handsignalman must be stationed at the signal and he must instruct Drivers of all trains to proceed cautiously through the section. If necessary a competent man must also be appointed at the signal ahead of the track circuit or apparatus which is disconnected, to advise the Signalman of the arrival of trains stopped at that signal.

77(b). A Handsignalman must always be appointed in connection with the work referred to in clauses (c), (d), (e), and (i), and must be appointed when necessary in connection with other work mentioned in clause (a); this Handsignalman must act as laid down in Rule 78.

78(a). The Handsignalman must be provided with hand signals and detonators. He must act under the instructions of the signalman and the latter must see that this man is instructed as to his duties and understands what he is to do. If necessary, more than one Handsignalman must be provided.

78(b). The Handsignalman must ascertain from the signalman what train is to be brought forward, and satisfy himself that any facing points or switch diamonds, whether disconnected or not, to which the signal to be passed at Danger normally applies are in their proper position and secured by clip or scotch, and inform the signalman accordingly before signalling the train forward. The Handsignalman must also satisfy himself that any trailing points are in the proper position for the train to pass.

78(c). When signalling a train past a fixed signal, the Handsignalman must stand near to such signal in order that his hand signal may not be taken by a Driver on any other line. Should it be necessary to reduce the speed of, or stop, an approaching train at a stop signal, the Handsignalman must exhibit a red hand signal to the Driver. When permission can be given for the train to proceed, the Handsignalman must exhibit steadily a green hand signal when at a two-aspect signal, and a yellow hand signal when at a multiple-aspect signal or at a stop signal on a post carrying a distant signal. In the case of a distant signal, or a colour light signal capable of displaying red or yellow aspects only, a yellow handsignal, held steadily, must be exhibited to the Driver of an approaching train.

\* \* \* \* \*

83. Electrical locking or controlling devices in connection with signals, points, or block apparatus must not, in case of failure, or supposed failure, be released unless special instructions are issued to the contrary.

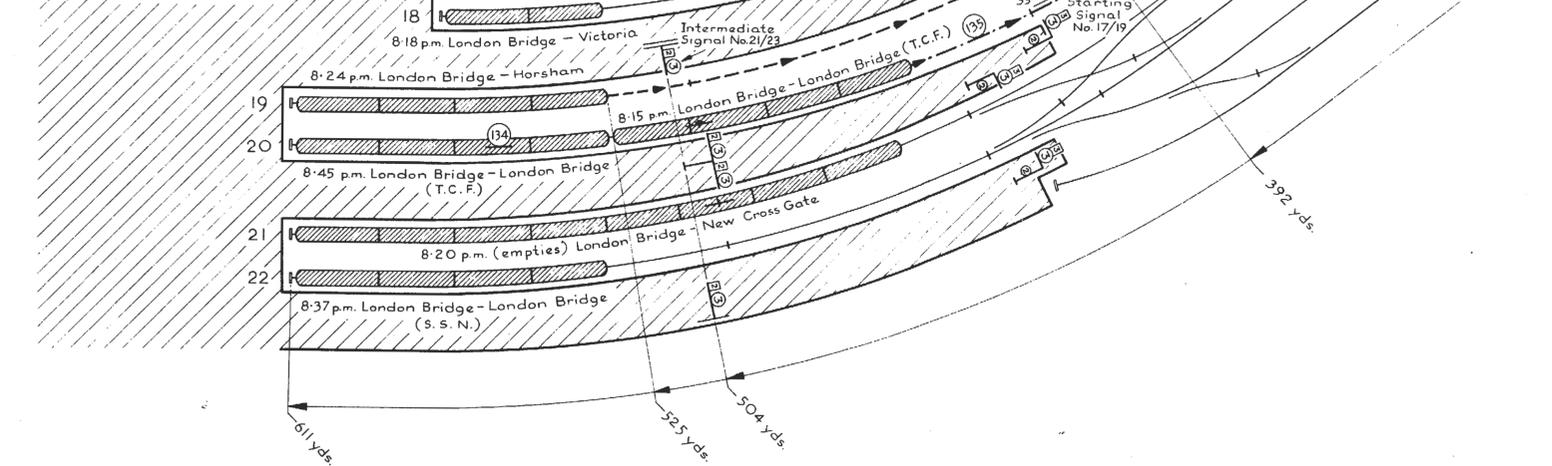
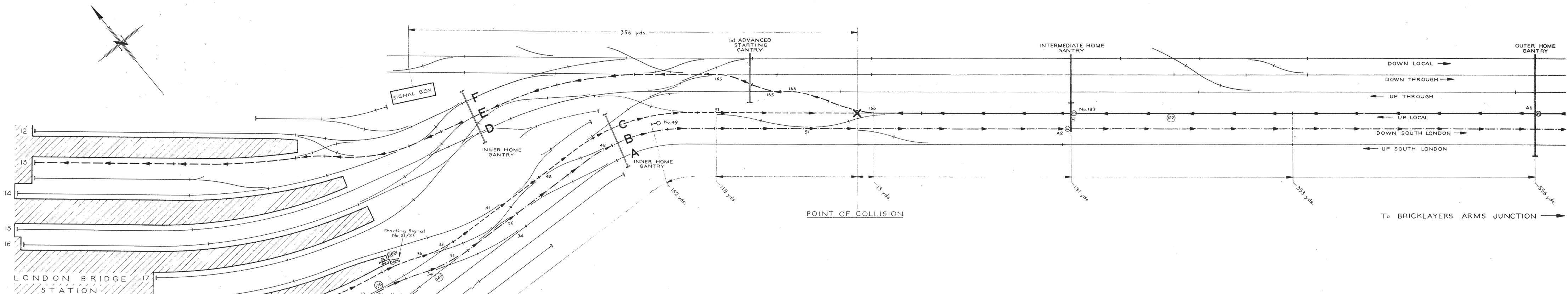
## GENERAL APPENDIX TO THE WORKING TIME TABLES

*Transmission of verbal messages between Signalmen and Handsignalmen.*

When a Handsignalman is appointed under the jurisdiction of a Signalman he must be instructed when commencing duty, that the line or lines affected must always be considered to be blocked, and until verbal instructions to the contrary are received by him from the Signalman concerned.

Verbal messages from the Signalman to the Handsignalman must be carefully given and in no circumstances should the word "clear" be used in any message intended to convey that a line is blocked, e.g. such a message as the "Down or Up line *not clear*" must not be used, but must be given definitely by using the words "Down or Up line *Blocked*".

Signalmen must in addition make sure beyond doubt that messages given by them to Handsignalmen are fully understood.



**LEGEND**

Route set for the 7:37 p.m. London Bridge - London Bridge train shown thus :-  
 Up to point of collision ———→  
 Beyond point of collision - - - - -→

Route set for the 8:15 p.m. London Bridge - London Bridge train ———→

Route taken by the 8:24 p.m. London Bridge - Horsham train - - - - -→

All points are shown in their normal position

Relevant point, signal, and track circuit numbers only shown

Track circuits shown thus :- (22)

S O U T H E R N   R E G I O N

# COLLISION AT LONDON BRIDGE

22nd. OCTOBER, 1956

D I A G R A M   N O T   T O   S C A L E