



MINISTRY OF TRANSPORT

RAILWAY ACCIDENTS

REPORT ON THE COLLISION
which occurred on
21st April 1951 between
Pollokshields East and Queen's Park
in the
SCOTTISH REGION
BRITISH RAILWAYS

LONDON : HIS MAJESTY'S STATIONERY OFFICE

1952

NINEPENCE NET

SCOTTISH REGION
BRITISH RAILWAYS

MINISTRY OF TRANSPORT,
Berkeley Square House,
London, W.1.

19th October, 1951.

SIR,

I have the honour to report for the information of the Minister of Transport, in accordance with the Order dated 23rd April, 1951, the result of my Inquiry into the collision between two passenger trains which occurred at 1.38 p.m. on Saturday, 21st April, 1951, between Pollokshields East and Queen's Park in the Scottish Region.

The two trains were the 1.24 p.m. Glasgow (Central) to Mount Florida, Football Special Train No. 68, and the 1.27 p.m. Glasgow (Central) to Kirkhill, Train No. 69. Both were carrying a full complement of passengers.

After passing through Pollokshields East, No. 68 was stopped in section on account of loss of vacuum in the brake pipe; No. 69, following three minutes later, was erroneously allowed into the same section, and collided with the rear of it at a speed of about 20 miles per hour. The impact was severe, and the four rearmost compartments of the last coach of No. 68 were destroyed.

I regret to report that 3 passengers lost their lives, 74 were taken to hospital, including 18 who were detained, and 66 others received minor injuries.

Rescue work was somewhat hampered by the site of the accident, which was in a cutting between high retaining walls, where access was difficult, but First Aid was given to the injured by passengers and Railway staff, using the equipment from the Guard's vans on the trains, and ambulances were called without delay. Six of these left St. Andrew's Ambulance Headquarters at 1.43 p.m. arriving at the scene at 2.0 p.m., followed almost at once by nine others.

The 21st April was the occasion of the Scottish Cup Final Football Match at Hampden Park, and traffic congestion on the roads in Glasgow caused some delay to the ambulances on the way; nevertheless, the last of the injured reached hospital at 2.50 p.m., and the St. Andrew's Ambulance Association are therefore to be commended for their good work.

The engine of an empty coaching stock train, standing on the Down line at the Pollokshields East Home signal was slightly grazed by the collision on the Up line, but was not damaged.

Both lines were blocked by the accident, but the Down line was temporarily cleared to allow 10 football special trains to return from Mount Florida to Glasgow (Central) between 5.0 p.m. and 6.0 p.m., after which it was closed again for the remainder of the day.

Train No. 68 consisted of 8 non-corridor coaches, weighing 230 tons, and was drawn by a Class 4, 0-6-0 tender engine, weighing 90 tons. Train No. 69 comprised 7 non-corridor coaches, weighing 203 tons, and was drawn by a Class 4, 2-6-4 tank engine, weighing 85 tons.

On No. 69, vacuum brakes were in operation on the coaches, and the steam brake on the coupled wheels of the engine; the total brake power of the train was 178.5 tons, or 61.9% of its weight. The brakes of No. 68 were off at the time of the collision, with the exception of the steam brake on the engine.

Visibility was good, and the rails were dry.

DESCRIPTION

The line.

The collision took place on the Cathcart Circle Line, which branches off the Eglinton Street-Strathbungo Line at Pollokshields East Junction, and runs in a circle through the outskirts of Glasgow, rejoining the Strathbungo Line at Muirhouse Junction. The Cathcart Circle has two tracks; the one, on which the accident occurred, is known as the Up line or Outer Circle, and the other, as the Down line or Inner Circle.

Between Pollokshields East Junction and Queen's Park signalboxes, a distance of 946 yards, the line runs through a deep and narrow cutting with high retaining walls, and is traversed by six bridges. From Pollokshields East signalbox, the Up line is on a left hand curve of 14 chains radius, followed by a short length of straight through the station; it then continues on a left hand curve of 16 chains radius, which terminates immediately before the point of impact; beyond this point there is another short length of straight, after which the line curves to the left again at 14 chains radius through Queen's Park Station.

The two trains involved were out of sight from both signalboxes when the collision occurred.

The gradients of the Up line, starting from Pollokshields East signalbox are as follows :—

66 yards	level	—
66 „	rising	1 in 170
330 „	falling	1 in 100
33 „	rising	1 in 240
341 „	rising	1 in 70
thence	rising	1 in 500 through Queen's Park.

Relevant distances from the point of impact, which was on the 1 in 70 rising gradient, are :—

Pollokshields East Junction signalbox	537 yards North
Pollokshields Up (Outer Circle) Starting signal ..	203 „ „
Point of impact on Up (Outer Circle) Line }	— — —
Pollokshields Down (Inner Circle) Home Signal .. }	— — —
Queen's Park Up (Outer Circle) Home Signal	306 „ South
Queen's Park signalbox	409 „ „

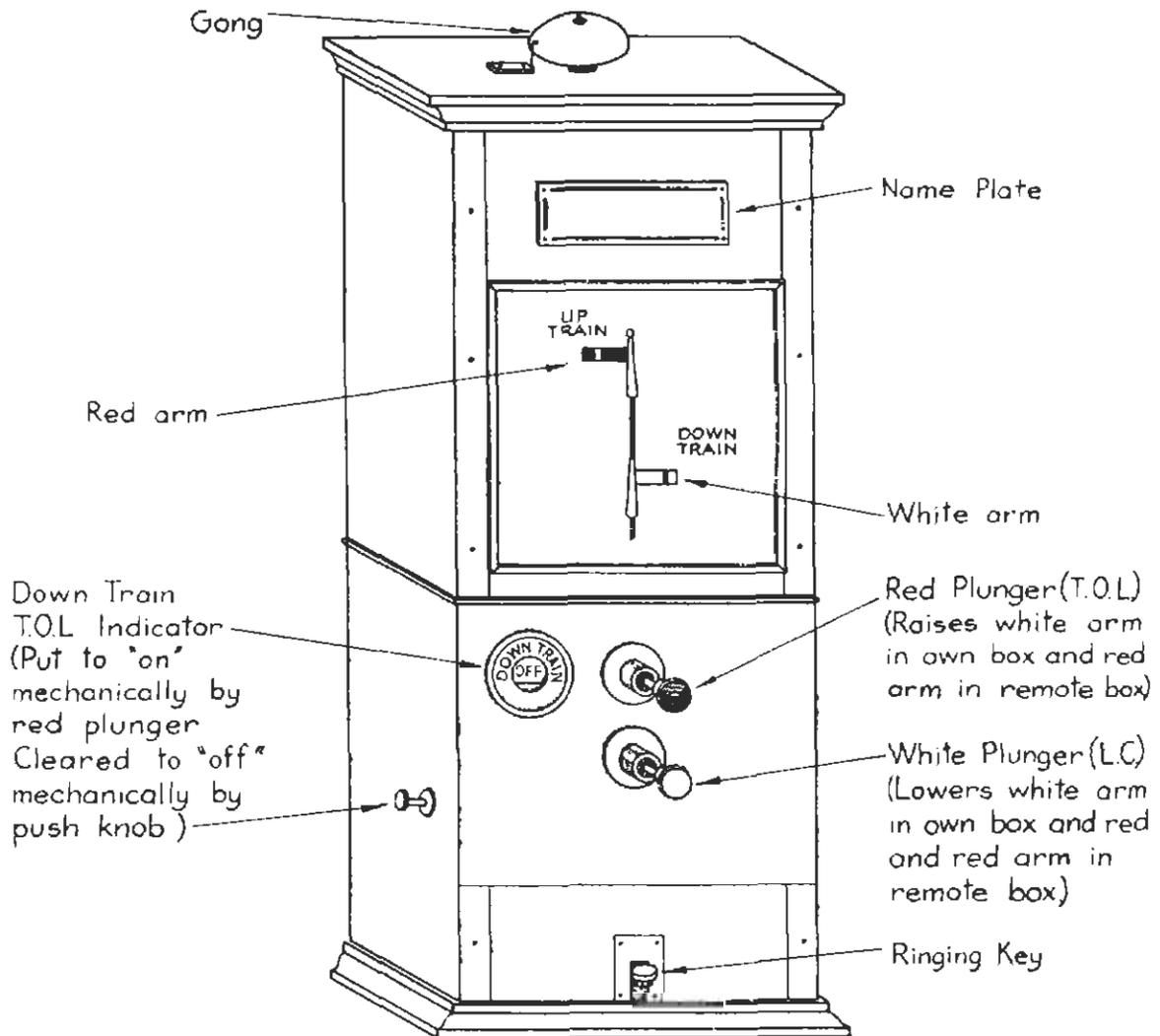
The signalling.

The section between Pollokshields East Junction and Queen's Park is controlled by Tyer's (Caledonian Pattern) 2-position block instruments. Signals, which are of the mechanically operated, lower quadrant, type are not controlled by the block, but a track circuit through Pollokshields East Station, when occupied, locks the Up Home signal normal, and another track circuit, extending 85 yards in advance of the Up Starting signal, when occupied, replaces and locks that signal.

The Pollokshields East Junction signalbox contains 15 working levers and 3 block instruments, and is normally worked by one signalman and a book boy. It is well situated and has a clear view of the line ; visibility in the Up direction is about 204 yards and in the Down, 110 yards. Queen's Park signalbox is no more than a block post on the platform of the station, containing six signal levers and two block instruments. Visibility is 100 yards in the Up, and 135 yards in the Down, directions ; in the latter case, after a train has been sighted at 135 yards, the station buildings intervene, and it only comes into view again when 40 yards from the box.

Examination of the signalling apparatus immediately after the accident showed that it was in correct working order.

A sketch of the Tyer's 2-position (Caledonian Pattern) block instrument is given below. One instrument in each box controls movements through the section for both Up and Down lines. The instrument in the remote signalbox is therefore identical with that shown in the drawing, except that the red arm is marked "Down Train", and the white "Up Train".



The method of operation, between two signalboxes, A and B, excluding the usual "call attention" signals, is as follows :—

- A. offers the train on the ringing key.
- B. accepts on the white plunger. This lowers the red arm in A and the white arm in B.
- A. gives "Train entering Section" on the ringing key.
- B. acknowledges on the red plunger. This raises the red arm in A and the white arm in B, and places the "Train on Line" indicator in B to "On".
- B. gives "Train out of Section" on the ringing key, and removes the "On" indication by depressing the push knob.

The points to note are that :—

- (i) when the indicator in B is changed to "On" by the operation of the red plunger, it does not correspondingly change the indicator in A. This latter indicator is used for trains in the opposite direction, when A is the receiver and B the sender. Thus, after the "Train entering Section" bell signals have been exchanged, A has no indication that there is a train in the forward section.
- (ii) B is prevented by a mechanical interlock in the instrument from accepting a train by means of the white plunger so long as the "Train on Line" indicator shows "On".
- (iii) there is nothing to prevent B, however, from removing the "On" indication by means of the push knob at any time.

THE ACCIDENT

On the Cathcart Circle, a permanent speed restriction of 25 m.p.h. is in force in both directions, and the time usually taken to pass through the Pollokshields East-Queen's Park section is between one and two minutes. During the hour from 1 p.m. to 2 p.m. on the day of the accident, 18 trains were due to pass Pollokshields East Junction Signalbox on the Up line, and 9 trains on the Down line. On the Up line, trains therefore followed each other at intervals of three to four minutes.

The two signalmen on duty at the time were A. McLellan at Pollokshields East and J. Kelly at Queen's Park.

At 1.31 p.m., Train No. 68 was offered and accepted between the two signalboxes ; at 1.33 p.m., it passed Pollokshields East and the "Train entering Section" signal was given to Queen's Park. About one minute later the train stopped in section on account of loss of vacuum, which the driver thought was due to the communication chain having been pulled, so the driver and guard left the train and walked along the track side to discover the cause. At this point, the engine was 126 yards in rear of the Queen's Park Up Home signal and the whole train was out of sight of both signalmen.

At 1.34 p.m., McLellan at Pollokshields East offered forward another train, No. 69, although he had not yet received "Train out of Section" for No. 68. Kelly, at Queen's Park, knowing that No. 68 had not yet passed, at once called to McLellan on the telephone, and told him that he (McLellan) had already despatched a train into the section. McLellan, although he knew that he had not heard "Train out of Section" for No. 68, contradicted this statement, and denied that he had already sent a train forward. Thereupon Kelly, who was a junior signalman, unfortunately allowed himself to be persuaded by his senior colleague and, thinking that McLellan had made a mistake in originally signalling forward No. 68, cancelled the "Train on Line" indication on his own block instrument, and accepted No. 69. The second train was thus allowed into the section while the first was still standing in it, and the collision ensued.

The engine of Train No. 69 was only about 30 yards from the rear of No. 68 when the latter first came into sight, and so the driver could do no more than immediately apply his brakes fully ; this gave little time for them to take effect, however, and the speed of the train on impact was about 20 m.p.h. The result of the collision was that the last four compartments of the rear coach of No. 68 were completely crushed, and the whole train was impelled forward a distance of 81 feet. The fatalities and most of the serious injuries occurred in the last four compartments, although many minor injuries were caused throughout the length of the train. The engine of Train No. 69 received only moderate damage, including a slightly bent main frame, but the remainder of the train was undamaged. There was no overriding of buffers and no derailment, except for the rear bogie of the last coach of Train No. 68. This coach was built at Wolverton in 1939, and its body construction was of timber framing with wooden exterior panelling ; the undercarriage was steel.

At the time of the accident, Queen's Park signalbox should properly have been in charge of an experienced signalman, T. Tugwell, until 2.25 p.m., but this man had departed from his duty without authority in order to attend a football match, leaving the box in charge of Kelly who was, to be strictly accurate, still a learner. Kelly had been examined, however, on the previous Thursday, and certified as fit to take charge of the signalbox with effect from the following Monday ; he had also been detailed to take charge on the Saturday from 2.25 p.m. to 3.45 p.m., a slack period, in order that he might accustom himself to sole charge before taking over fully on the Monday. When the block working mistake was made, therefore, Tugwell should have been in charge of the box, and Kelly should have been working under his supervision.

EVIDENCE

A. Clark was the driver of Train No. 68. He said that as he approached Pollokshields East Junction, the Distant signal was "on", but the Home and Starting signals were "off" when he reached them. He was travelling at this time at about 20 or 25 m.p.h., when, just before coming to the station platform, he felt the brakes begin to drag; he thereupon tried to overcome them with the large ejector, but he was not successful, and the train came to a stand 126 yards short of Queen's Park Home signal. The vacuum was then 10 inches, and Clark concluded that the communication chain had been pulled, so he jumped down from the left hand side of the engine, and ran back to the Guard, who was in the fifth coach. As he did this, he looked at the communication chain indicator discs on the coaches, and all were in their normal positions. On reaching the Guard's compartment, he told him that he thought the chain had been pulled, so both men went towards the front of the train, looking at the discs. Clark, on returning to the engine, found that in the meantime the vacuum had been restored to 18 inches, so he blew the whistle to attract the Guard's attention, and prepared to start again. He had left the engine with the steam brake on, and his hand was on the lever to release it, when the collision occurred and the whole train was thrown forward about a carriage length.

Clark was quite certain that none of the discs was turned in the first five coaches, and he also looked in the leading Guard's van, next to the engine, where somebody might have interfered with the brake, but the compartment was empty. He did not know what caused the vacuum to drop, but he said that he was doubtful whether it was the communication chain, because the large ejector had no effect, and the vacuum dropped in rather a jerky way. He had experienced no difficulty in creating vacuum before this incident, and the engine was steaming satisfactorily at the time. He thought that the train had been standing for not more than four minutes before the collision happened.

R. Fleming, who was the fireman on the train, confirmed Clark's evidence. When the train stopped and Clark left the engine to walk back to the guard, Fleming said he remained on the footplate, cleaning up the boards. He did not take much notice of the vacuum gauge, but he thought the vacuum started to rise from 10 inches about the time that Clark returned to the engine.

Guard W. Craik of Train No. 68 said that they left Glasgow (Central) at 1.28 p.m., four minutes late, and having been slowed down by signals at Bridge Street and Eglinton Street, were stopped between Pollokshields East and Queen's Park. He assumed at the time that Queen's Park Home signal was against them. When Driver Clark came back to his van, however, he saw that the vacuum had fallen to 10 inches, and, thinking that the communication chain had been pulled, or that someone in the front van had interfered with the brake, he asked the driver to hurry forward to the van, while he looked at the carriage discs. Craik found all the discs in the front of the train in the normal position, and so turned back to inspect those on the rear three coaches; these were also normal. He had almost returned to his own van again when the collision took place. Craik said that there were four other men travelling in the Guard's van with him, whom he believed to be railwaymen, but he was certain that none of them was leaning against the brake handle, or had meddled with it during the journey.

Craik had been unexpectedly put in charge of Train No. 68 at the last moment at Glasgow (Central), and he did not have time to examine the train before he left; he was therefore unable to say whether there was anybody in the front van, or whether it was locked when the train left the station.

Driver J. Tainsh, of Train No. 69, said that he was brought almost to a stand by the Pollokshields Home signal, but it cleared just before he reached it, and he opened the regulator slightly as soon as he saw that the Pollokshields Starting and the Queen's Park Distant signals were both in the "off" position. Soon after passing through Pollokshields Station, Tainsh, who was on the left hand side of the engine, suddenly caught sight of the rear of Train No. 68, at a distance of about a carriage length ahead. His speed at this time was about 20 m.p.h., and he immediately made a full brake application, but the collision was unavoidable, and he had no time to do anything more than brace himself for the shock. Tainsh said that the brakes barely had time to operate before the collision occurred, and that they did not appreciably affect the speed of the train.

Signalman J. Kelly was working Queen's Park signalbox at the time of the accident. At 1.31 p.m., Train No. 68 was offered to him by Pollokshields East, and he accepted it; at 1.33 p.m., "Train entering Section" was received, and Kelly operated the red plunger on his instrument and also offered the train to the next signalbox, Crosshill, where it was likewise accepted; he then drew his signals for the passage of the train through Queen's Park. Immediately after this, a train on the Inner Circle (Down) line was offered from Crosshill to Queen's Park; it was belled 3-1 (passenger train) and Kelly, who was checking the running of the trains on his special train notice, thought that it should have been belled 2-2-1 (empty stock train). He mentioned this to the Station Master, who had just come into the box, and the two men studied the notice together; while they were doing so, however, the signalman at Crosshill amended the bellings to 2-2-1 of his own accord. At the same time, 1.36 p.m., a second passenger train No. 69, was offered on the Outer Circle (Up) line from Pollokshields East. Kelly, realising that No. 68 had not yet passed, remarked to the Station Master "he is offering me another one and I have one on the block already", and at once spoke on the block telephone to the Pollokshields signalman, McLellan.

Kelly said that his words to McLellan were "you have already given me a 3-1 and entered it in the section", and he further explained to him that he (Kelly) had already put the block instrument "on". Kelly said that McLellan replied immediately, and without hesitation, "No, I haven't". This conversation was repeated, and Kelly then concluded that a mistake had been made by McLellan in signalling forward the first train, No. 68. He thereupon restored the instrument and removed the "Train on Line" indication by means of the push knob, and accepted the second train, receiving from Pollokshields, almost at once, "Train entering Section" for it. A minute or two later, he saw people running along the track towards the station, and realising that something was wrong, he signalled "Obstruction Danger" in both directions at 1.41 p.m.

Kelly was 38 years of age, and had been in the railway service for 2½ years. He had gained about six months' experience of signalman's duties, as Porter-Signalman and Summer Signalman at various stations, before being posted a fortnight before the accident as a learner at Pollokshields East and Queen's Park signalboxes.

As has already been explained, Queen's Park signalbox should not have been in the charge of Kelly at the time, but of another signalman, Tugwell. In connection with this, Kelly said he knew that in some signalboxes the signalmen were allowed to change times, but he did not know whether Tugwell had permission or not. Tugwell had said to him "if it's all right with you, I will be going about one o'clock", and he had replied "as far as I am concerned, it's O.K.". Kelly said that he was not worried by this as he felt quite capable of taking charge by himself.

With regard to his acceptance of the second train, No. 69, into the section, he explained that in the three minutes' interval between the offering of the two trains, he had been busy telling the Station Master how the trains were running, and dealing with the incorrectly belled Train No. 64. When asked why he was so easily persuaded by the signalman at Pollokshields that the first train was not in section, although he knew he had received "Train entering Section" for it, and his instrument indicated "On", he replied that McLellan was a Special Class Signalman, that he knew he was a good signalman, that he was working a box with only three blocks in it, and, in addition, that he had a Train Register Boy to help him. Kelly said that he assumed, after the conversation with McLellan, that the latter had made a mistake in offering and giving "Train entering Section" for Train No. 68, and that, in fact, this train had probably been routed on the Inner Circle through Muirhouse. He therefore restored his instrument, accepted the second train, and cancelled the entry about Train No. 68 in his Train Register Book, writing "error" by the cancellation.

Signalman A. McLellan was in charge of Pollokshields East Junction signalbox at the time of the occurrence; he was assisted by Train Register Boy Morrison, who maintained the entries in the train register book, and Inspector Potts was also in the signalbox for the purpose of controlling the traffic on the Circle lines during the peak period.

McLellan said that Train No. 68 was accepted by him at 1.31 p.m., and offered to, and accepted by, Queen's Park at the same time. It passed Pollokshields signalbox, and he gave "Train entering Section" to Queen's Park at 1.33 p.m. Almost immediately afterwards, (entered in the book as 1.33 p.m., but subsequently altered to 1.36 p.m.), he was offered, and he accepted Train No. 69 from Eglinton Street, and immediately offered it forward to Queen's Park. McLellan admitted that, when he offered Train No. 69 forward to Queen's Park, he had not heard "Train out of Section" belled from Queen's Park for Train No. 68, and that Kelly at Queen's Park at once spoke on the telephone, saying "Why have you offered me a second train, because the first one is not clear of my section?", and also "You have offered me a train already". McLellan said in his evidence that he thought that he then went to look at the train register book and saw that No. 68 had passed at 1.33 p.m. There was, so far as he could remember, no entry in the "Train out of Section Signal Received" column, but he knew that No. 68 had passed into the section a minute or two before, and he assumed that, this length of time having elapsed, it was also out of section. McLellan was unable to recall whether he asked the boy Morrison if he had received "Train out of Section" for No. 68, but he thought that he might have done so, and that Morrison might have replied that he had not. McLellan said that he then returned to the telephone and told Kelly that he had not offered him another train, and that there was no other train in section. Later in his evidence, when examined on this point again, McLellan said he was not sure whether he checked the train register book with the boy before or after he replied to Kelly on the telephone.

McLellan was again questioned with considerable care in an endeavour to find why, having been challenged by Kelly, and knowing that the "Train out of Section" signal for the previous train, No. 68, had not been heard, he nevertheless persisted that there was no train in the section, and persuaded Kelly to accept another train. No cogent reasons, or direct answers however, could be elicited; instead, he replied, "Generally, I would always depend on my own working", and "I have always used my own discretion, and I have found that I always come out best".

McLellan was a very difficult witness to question, as he had an impediment in his speech which made it difficult for him to express what he wanted to say, and he was also overstressed by the occasion of the Inquiry. His memory seemed to be indistinct, and his answers were vague and sometimes contradictory. Nevertheless, the whole trend of his evidence was that once a train had passed his signalbox, he took it for granted that it had cleared the section one minute later, whether or not he had received "Train out of Section" for it. For reasons given later in this Report, I do not think that McLellan's evidence, so adverse to himself, should be taken at its face value.

The Extracts from the Train Register Books for Trains 68 and 69 are as follows :—

POLLOKSHIELDS EAST

	Accepted from Eglinton Street	Train entering Section received from Eglinton St.	Train out of Section given to Eglinton St.	Accepted by Queen's Park	Train out of Section received from Queen's Park
No. 68 ..	1.31	1.32	1.33	1.31	1.34 (Subsequently altered to 1.37).
No. 69 ..	1.33 (Subsequently altered to 1.36)	1.38	1.39	1.38 (Subsequently altered to 1.37)	1.41

QUEEN'S PARK

	Accepted from Pollokshields East	Train entering Section received from Pollokshields East	Train out of Section given to Pollokshields East	Accepted by Crosshill
No. 68 ..	1.30	1.33	error	1.33
No. 69 ..	1.34	1.37		

Train Register Boy R. Morrison, who was keeping the book at Pollokshields East signalbox at the time, was 17½ years of age and had two years' railway service. His evidence was confused and contradictory, and little reliance could be placed upon any of it.

He said that he remembered McLellan had asked him whether "Train out of Section" had been received from Queen's Park for Train No. 68, and that he had replied that he had not heard it, but he could not remember any telephone conversation between McLellan and Queen's Park signalbox as he was engaged with the Train Register book and train notices at the time.

When asked why he had made the two entries for "Train out of Section" Signal Received from Queen's Park, when the signals had not in fact been given, Morrison admitted that he invented the times and entered them in the book as the two trains passed his signalbox, and he further admitted that it was "sometimes" his practice to do this.

District Inspector C. Potts had been in the signalbox with McLellan and Morrison since 1.12 p.m.; his duties were to watch the running of the trains during the period of heavy traffic, and to divert them from the Outer to the Inner circle if it became necessary. He was unable to throw any light on what happened in the signalbox at the time because, he said, he was busy making himself a cup of tea and, afterwards, washing up in the lavatory. Potts said he came out of the lavatory just after Train No. 69 passed the signalbox.

Station Master R. H. Ballentine had been temporarily in charge of Pollokshields East and Queen's Park Stations for three weeks, and he was on duty at the time of the accident at the latter station. He said that, about 1.30 p.m., he went into the signalbox to help Kelly, who was very busy, and he proposed to do this by marking the Special Train Notice as the trains passed, leaving Kelly free to attend to his block instruments and train register book. He heard Train No. 68 offered to, and accepted by, Kelly from Pollokshields East, followed almost immediately by another train offered from the other direction, Crosshill, and also accepted. This latter train was belled as a passenger train (3-1), and Kelly remarked that he thought it should have been described as empty coaching stock (2-2-1). While he was talking, however, Crosshill amended the description by belling the "Call attention" followed by 2-2-1. Mr. Ballentine said that Kelly then made the appropriate entries for the two trains, both Up and Down, in his book. As soon as he had done so, a second passenger train was offered from Pollokshields East, but Kelly did not accept it. Instead, he spoke to Pollokshields on the telephone, and a conversation followed, the gist of which Ballentine said, was to ask whether another train had not already been sent through two or three minutes before, and, from the course of the conversation, Ballentine thought that the answer was "No". He said that Kelly then left the telephone and remarked to him "They did not send any train to me so I think it must have been a mistake—it must have been a train on the Inner Circle". Ballentine heard Kelly accept the second train No. 69, but he was looking at the Train Notices at the time, and not paying attention to the block instrument, so it did not occur to him that the second train should not have been accepted until a properly signalled cancellation had been received for the first.

Ballentine then explained that he first noticed that the proper signalman, Tugwell, was not on duty, when he went into the box at 1.30 p.m. ; he did not, however, speak to Kelly about it as the latter was too busy at the time, and he thought it wiser not to interrupt him. He was surprised to see that Tugwell was not there, and unauthorised changing of duties had not happened previously, to his knowledge, during the fortnight he had been in charge of the station.

T. Tugwell was 23 years old, and had been a signalman for 5 years. He had been working in the Queen's Park signalbox for the previous six months, and on the Saturday of the accident, was supposed to have been on duty from 7.5 a.m. to 2.25 p.m. When asked why he had left without authority at 1.0 p.m., he replied that it was his custom, in conjunction with another signalman, Crilly, to do so on every Saturday that they possibly could, in order to attend the sports in the afternoon. Tugwell was shown various entries in previous Train Register Books when the two men had signed on and off on Saturdays at the correct times, yet the other entries in the book showed clearly by the handwriting that, in fact they had changed at different times. He admitted that false entries had been made on these occasions. Tugwell said that on the Saturday of the accident, he left at 1.0 p.m., knowing that Kelly had been passed as a signalman on the previous Thursday for duty on the following Monday. It did not occur to him that Kelly had been put on duty from 2.25 p.m. to 3.45 p.m. because that was a slack period and because it presented an opportunity for him to accustom himself to sole charge.

Station Master R. Bertram was normally in charge of Queen's Park Station, but at the time of the accident was temporarily working at Cathcart. He said that, in November 1950, he had discovered that the two signalmen at Queen's Park, Tugwell and Crilly, had been exchanging duties without authority, and he had spoken "sharply" to them, telling them that, in future, they were to obtain his permission first. He did not subsequently check that his orders were being obeyed, and was not aware that (as the books showed) they continued their usual practice on almost every Saturday in November, December and January. He agreed that they were "just making a fool" of him. Bertram remembered that an instruction had been issued by his District Officer that he was to examine carefully the signing on and off of signalmen, but he admitted that he had not done so.

District Inspector J. Watt was responsible for the supervision of signalmen in the Polmadie area, which includes Queen's Park and Pollokshields East.

He said that he had known McLellan for a number of years, and that he was undoubtedly a good signalman, with a thorough understanding of his responsibilities. McLellan unfortunately had a slight impediment in his speech, which caused some difficulty in extracting answers from him on occasions. Watt was quite unable to account for McLellan's mistake, or for his apparent habit of assuming that a train was out of section one or two minutes after it had passed the signalbox. He thought that McLellan was, perhaps, a little short-tempered, impatient, and conscious of his skill as a signalman, so that, coupled with the impediment in his speech, he might possibly give a curt answer to a learner from another signalbox who challenged his working.

Inspector Watt continued that he also knew Kelly of Queen's Park well, that he was "a fine fellow", and that he was very satisfied with him as a signalman. It was his arrangement that Kelly should take sole charge of the signalbox between 2.25 p.m. and 3.45 p.m., an interval when there were only 6 Up and 6 Down trains, but he thought that Kelly was equally capable of taking charge during peak traffic periods, if required. Watt was unable to explain why Kelly should accept two trains into the section at the same time, except that, in talking to McLellan, Kelly probably felt that he was dealing with a senior and more experienced man, and that he could rely on what he said.

Inspector E. Harmer, who was Assistant Traffic Inspector, confirmed Watt's opinion. He had examined Kelly the previous week, and had complete confidence in his ability to take charge of Queen's Park signalbox. With regard to McLellan, he said that he was a "grand signalman", but he had an impediment in his speech, which made him speak "very sharply" at times. Harmer could think of no other possible reason for the mistakes that were made by the two signalmen in this accident.

CONCLUSION

The collision was caused by the combined mistakes of two signalmen, and as explained below, by the mutual misunderstanding of a telephone conversation which took place between them.

The action of a third signalman, though indirect, also contributed in no small degree to the accident. The man left his post of duty without authority, and in disobedience of direct orders not to do so, in order to watch a football match, leaving his signalbox during a period of peak traffic in the charge of a man who had only just been passed as a signalman, and who had never before taken sole charge.

REMARKS

My Inquiry into this accident disclosed a remarkably wide range of irregularities which contributed either directly or indirectly to the cause. In Pollokshields East Signalbox, an experienced signalman of good reputation and character apparently acted in a manner which violated the fundamentals of signalling practice, and a train register boy was found to be in the habit of making entries in his book in advance of their occurrence.

In Queen's Park Signalbox, another signalman, also of good repute, though of much less experience, allowed himself to be misled into disregarding and cancelling the indication on his block instrument, an indication which it was one of the main purposes of that instrument to give him. A third signalman, who should have been in charge of Queen's Park Signalbox at the time, was found to have left his post of duty in order to watch a game of football. It further transpired that the habit of signalmen exchanging duties without authority in this signalbox had been practiced for some considerable time, and by other signalmen as well as the man concerned in this particular case.

In addition, after the accident, a number of pages were removed from the previous train register book in use at Queen's Park, presumably with the intention of preventing the extent of this practice becoming known, and the boy at Pollokshields East altered an entry in his book although specifically instructed not to do so.

McLellan's actions at Pollokshields East are not easy to understand. He was a difficult witness to question; moreover he had no distinct memory of what happened in the signalbox, and his evidence was confused. Indeed, from what he said at the Inquiry, as well as from the circumstances of the accident, it seemed there could be no doubt that he was in the habit of assuming that a train was out of section one or two minutes after it passed into the section, and that he made this assumption without waiting for the "Train out of Section" signal from the signalbox in advance.

However this may appear to be the case, I do not think that it presents a true explanation. McLellan was overwrought at the Inquiry, and probably found it difficult to express what he wanted to say. Moreover, the Regional Officers, and Inspectors Watt and Harmer, all held him in high opinion as a signalman, and were unable to account for such an extraordinary lapse on his part. I therefore consider that another explanation is to be found.

McLellan was a man who had full confidence in himself as a signalman. He was also, possibly, a little short tempered and impatient by nature; in addition, the impediment in his speech caused him to use the minimum of words and, thus, occasionally to speak curtly. When challenged by Kelly about his offer of Train No. 69, his immediate reaction was to jump to the conclusion that Kelly, a new man, had failed to see the previous train, No. 68, pass out of the section. It probably did not occur to McLellan that he, himself, might have made a mistake. Furthermore, by the time of his telephone conversation with Kelly, he had dismissed Train No. 68 from his mind, and was concentrating on No. 69, as well as two trains on the Down line, one of which was just passing out of his section, and the other which was about to enter. When he was told by Kelly, therefore, that he had already passed one train into the section, and he immediately and shortly replied that he had not, he was, in fact, referring to No. 69. Kelly, on the other hand, was talking about No. 68, and thus the misunderstanding arose.

McLellan's first mistake was that he offered a train forward before receiving "Train out of Section" for the preceding train. This is contrary to regulations, and I think it possible that, during periods of peak traffic, he may have developed the habit of doing so. Secondly, when challenged about the first train, he was over confident, and did not take the precaution of checking whether it was still in section, which he could have done.

It should be noted, however, that his two-position block instrument gave him no indication of the state of the block, because he had already signalled "Train entering Section" for No. 68 and Kelly, at Queen's Park, had operated the red plunger on his instrument, thus automatically clearing McLellan's instrument at Pollokshields. His proper action should have been to check Kelly's challenge with the train register book, or, if still in doubt, to have asked Kelly to apply Block Regulation 11. This provides that the next train in the opposite direction should be stopped, informed that there was a train a long time in section, and instructed to proceed through the section with caution. Again, it must be realised that, in this particular instance, he might still have made the same mistake, even if he had looked at the train register book, because the "Train out of Section" entry for No. 68 had probably already been made by the boy although the signal had not, in fact, been received. I am reasonably sure, however, that McLellan did not check with the book before answering Kelly, but replied at once without leaving the telephone.

Some weeks after the accident, I watched the working of Pollokshields East signalbox during a period of early morning peak traffic, which was rather less heavy than that on the Saturday in question. There were periods of intense activity when the signalman was either sending or receiving bell signals on the three block instruments more or less simultaneously, as well as pulling or restoring signal levers and giving or removing descriptions on train describing apparatus. At the same time, a train standing at the Inner Circle Down Home signal was operating an annunciator in the box, making a loud and persistent buzzing sound, while any one or all of three omnibus circuit telephones were ringing with the code calls for other signalboxes. The noise of bells, gong and buzzer was considerable and the speed and precision required of the signalman were such that only a skilled and experienced man could have been expected to compete with his task successfully in the circumstances. I formed the impression that McLellan, who happened to be the signalman on duty, only managed so well because he knew the sequence and timings of the trains, and was thus able to anticipate a number of movements.

It should be noted that, on 21st April, with 18 Up and 9 Down trains passing the box in the space of one hour, even in the unlikely event that they were evenly spaced, the interval between them would be little more than two minutes. The work in the signalbox would therefore be both intense and continuous during this period.

I am aware that, on the occasion when I was watching him, McLellan may possibly have indulged in a little pardonable exhibition of his skill, and also that there are many other signalboxes throughout the railways where similar conditions exist ; nevertheless, of signalboxes working at the same intensity of traffic as Pollokshields East, with its brief one minute sections, there must be very few which are not now provided with more adequate and extensive modern signalling controls than the simple 2-position instruments which were in use at Pollokshields at the time of the accident.

For this reason, coupled with the fact that McLellan probably did not know the special train working so well as on a normal working day, I think that conditions were favourable for a block working mistake to be made, particularly if the signalman was tempted to take short cuts and did not operate his block strictly in accordance with the Regulations. I also think that it was these same difficult conditions, when the signalman and train register boy must have been hard pressed at times to keep pace with events in the signal-box, which were probably the cause of the bad habits which they seem to have developed in offering a train forward before receiving "Train out of Section" for the previous one, and in making false entries in the train register book.

Kelly, at Queen's Park, though he should not have been in charge of the signalbox at the time, was fully confident of his ability, and his confidence was shared by Inspectors Watt and Harmer, whose judgment I respect. He was unfortunate in that, on his first duty by himself, he was faced with a situation which required experience rather than a knowledge of the rules in order that it should be correctly handled. That he was fully alert, and by no means flustered by the pressure of traffic, is demonstrated by the fact that he noticed, and was about to deal with, the incorrect description of a train signalled to him from the other direction, and, at the same time, quickly challenged the incorrect offer of Train No. 69 from McLellan.

As his evidence shows, he was impressed with McLellan's seniority and knowledge as a signalman and, when he was curtly told that there was no train in the section, he thought that McLellan must be right, and must have given the "Train entering Section" signal for No. 68 by mistake ; there was no question in his mind that there might be a doubt about the matter. He therefore cancelled the "Train on Line" indication on his block instrument and accepted No. 69, after which he scored through the entry for No. 68 in his train register book, and wrote "error" against it. In short, he took McLellan's remarks as a cancellation of the "Train entering Section" signal, and acted accordingly. The cancellation of a signal is a normal and recognised occurrence, but if Kelly had reflected at the time that McLellan had given two signals for the train, that is "Is line clear" and "Train entering Section", he might perhaps have become doubtful about the cancellation and the state of the block. Moreover, if he had been more experienced, he would have insisted that McLellan should actually signal the cancellation on his block instrument, in accordance with the regulations ; if he had done this, I have no doubt that McLellan would have refused, and the misunderstanding would then have been brought to light.

It is not the purpose of this report to criticise individuals except where, by so doing, a point is made which will lead to the prevention of a similar accident in the future. The two signalmen directly involved in this occurrence, McLellan and Kelly, both made honest mistakes, which unfortunately combined to bring about the accident. I regard McLellan's errors as the more serious, and think that Kelly was more the victim of circumstances. The misunderstanding between the men is another example of how dangerous a telephone conversation can be, if not precisely and accurately worded.

Tugwell, however, presents a different situation. In all probability, if he had been on duty as he should have been, the collision would not have happened, because he was too experienced a signalman to make the mistake which Kelly made. By his irresponsible and undisciplined action in deserting his post, therefore, he was to no small extent responsible for the accident. Nevertheless, it must be noted that, up to a point, he did no more than had been the custom in the signalbox for a long time past. He aggravated the case, however, by leaving his duty at a period of peak traffic in the hands of a man whom he knew to be inexperienced ; moreover, he had already been specifically ordered by the Station Master not to exchange his duties without authority.

By all accounts, Tugwell was a good signalman, eager and impatient to succeed ; he had, in fact, applied a short time previously to be posted to a more important box, but had been refused, and I have no doubt that he felt he was wasting his time in the simple little six-lever box at Queen's Park. This does not excuse his irresponsible action, nor hide the fact that his standard of discipline and sense of duty were sadly lacking.

When a keen young man falls into errors of this nature, it is worth while considering why he did so. In this case, I think it is clear that he was not properly supervised and led, and that, if he had been, he would in all likelihood have developed into the good and reliable signalman which he gave promise of becoming.

An examination of earlier train register books showed that irregularities in exchanging duties between various signalmen, and the habit of signing on and off at the correct time, but in fact exchanging duties at a different time, had been the regular practice for at least the previous ten months. All the pages in one book, from December 25th, 1950 to January 4th, 1951, had been removed. Apart from the dishonesty involved, the false entries were clear evidence that the men knew that they were doing wrong. Moreover, the falsity was extremely easy to detect, which was further evidence that, if any inspection of the books was made at all, it must have been of the most cursory and unobservant a nature, and the men must have known it.

The Station Master at Queen's Park, Mr. Bertram, acknowledged in his evidence that he had received from his District Officer an instruction to examine very carefully the signing of signalmen on and off duty, but he admitted that he had not done so. He also said that, having discovered in November 1950 that Tugwell and his mate, Crilly, were exchanging duties irregularly, he had spoken to them "sharply" and told them not to do it; despite this, the following Saturday, and every Saturday in November, December and January, they continued the practice. Mr. Bertram admitted that he had not noticed this, and that the men were "making a fool" of him.

A further example leading to the same general conclusion is to be seen in the action of train register boy Morrison, who continued to make fictitious entries in his book, despite the fact that an Inspector was in the signalbox at the time, and presumably watching what was happening. Inspector Potts, a fully qualified signalman, was in the signalbox for 25 minutes before the accident occurred, yet he was completely unable, in his evidence, to tell me anything at all of what happened. This is the more strange as his reason for being in the signalbox was to regulate or, if necessary, divert trains during the peak period; one might therefore have expected him to keep a close and detailed watch on the progress of events.

This accident has recalled attention to the fact that, if men in positions of authority such as station-masters or inspectors do not know how to use their authority, or allow themselves to be so easily hoodwinked, it will follow as a natural consequence that the young men in their charge will cease to have any respect for them or for their authority, and indiscipline will result. There is nothing new in this, but I think it would be advisable, in the area where this accident occurred, to examine the whole question of supervision and inspection in order to ensure that the sort of thing which has been disclosed in this Inquiry is not happening in other places as well.

The collision has also brought to notice the method of block working and signalling at Pollokshields East Junction and on the Cathcart Circle lines. It is evident that, in the light of modern developments, the intensity of traffic in this area has now far outstripped the old 2-position instruments, and an unnecessary burden of responsibility is thrown on the signalman himself. This has been recognised by the Railway Authorities and a scheme for the resignalling of the area with 3-position instruments and full "Class C" block controls has been in progress for some time. Two of the three replacement instruments were in Pollokshields signalbox, awaiting connection, when the accident took place, and they have now been brought into use. This is satisfactory, and it is to be hoped that the signalling of the whole of this heavily worked passenger line will be treated as a matter of priority and completed with the least possible delay.

It will have been observed in the evidence that when Train No. 68 stopped, and the engine crew thought that the communication chain had been pulled, the driver went back to find the guard, and the fireman remained on the engine. The rule for the protection of a train stopped in these circumstances (Rule 181(f)) states that the fireman must go back and protect the train, leaving the guard free to attend to the needs of the passengers. Although it was not observed in this instance, and no immediate steps were taken to protect the train, I think it unlikely that the accident would have been averted, or the effects mitigated, if the rule had been properly followed. The interval between the two trains was so short that it would have been remarkable if the fireman had been quick enough in starting, and had managed to run back far enough, to give sufficient warning to the following train.

Nevertheless, from the point of view of safety, the rule is clearly of great importance; in addition, the occasion to apply it happens infrequently in the experience of many enginemen, and it is thus the more likely to be forgotten when the need arises. For these reasons, I think it is for consideration whether special steps should not be taken periodically to remind drivers and firemen of this, and any other similar rules of rare occurrence, which so vitally affect safety.

I have the honour to be,

Sir,

Your obedient Servant,

R. J. WALKER,

Colonel.

The Secretary,
Ministry of Transport.