

care up to the home signal, whilst, as a matter of fact, he arrived at the Bermondsey intermediate box, 119 yards beyond this home signal, running at a speed which he himself estimates at 10 miles an hour.

Whilst, therefore, it appears most probable that with due care driver Herriett could have seen that the signals were against him, even if this was not the case, proper caution on his part should have prevented the collision occurring. The whole responsibility for the accident must, therefore, rest on his shoulders, and no other servant of the Company appears to be in any way to blame.

The Assistant Secretary,
Railway Department, Board of Trade.

I have, &c.,
P. G. VON DONOP,
Lieut.-Col. R.E.

APPENDIX.

DAMAGE TO ROLLING STOCK.

8.7 a.m. *London Bridge to Victoria train.*

Third-class brake, No. 945.—Completely broken

up.
Third-class, No. 885.—Completely broken up.

8.10 a.m. *London Bridge to Brighton train.*

Third-class, No. 340.—Two buffer-castings, one headstock, one quarter-light, and two step-boards broken.

Third-class, No. 1,148.—Two step-boards dam-

aged; four step-irons bent; two quarter-lights broken; and three quarter-lights cracked.

Third-class, No. 465.—Four quarter-lights broken.

Bogie composite, No. 438.—Three quarter-lights and one buffer-casting broken.

Triple composite, No. 257.—Body slightly shifted and one quarter-light broken.

Brake-van, No. 137.—Two buffer-rods slightly bent.

Engine, No. 388.—Chimney broken off; smoke-box and foot-plate damaged.

Printed copies of the above Report were sent to the Company on the 23rd January, 1900.

LONDON, BRIGHTON AND SOUTH COAST RAILWAY.

Railway Department, Board of Trade,
8, Richmond Terrace, Whitehall, London, S.W.,
January 18th, 1900.

Sir,
I HAVE the honour to report for the information of the Board of Trade, in compliance with the instructions contained in the Order of the 27th ult., the result of my enquiry into the circumstances attending the fatal collision which occurred on the 23rd ult. at Wivelsfield, near Keymer Junction, on the London, Brighton and South Coast Railway.

In this case, during a dense fog, the 5.45 p.m. up Pullman express, consisting of engine, tender, and 10 vehicles, which had left Brighton at 5.52 p.m.—seven minutes late—ran at considerable speed into the rear of the 5.35 p.m. up boat express from Newhaven, consisting of engine, tender, and 12 vehicles, which had been stopped at Wivelsfield up starting signal, for about five minutes, and had just started on its journey, and run forward for about 40 yards. The collision took place at about 6.14 p.m., and the results were disastrous.

The three rear vehicles in the boat train, viz., a composite carriage, a second class carriage, and a brake van, were practically destroyed; a composite carriage, the fourth vehicle from the rear, had three compartments broken up, and two other vehicles were slightly damaged.

The engine of the Pullman train was upset, and was lying on its side across the down line about 44 yards north of the point of collision, badly damaged; the tender was off the rails, across the 6-foot way and the up line; the remains of the front brake van, which was broken up, were also across the line, partly over the edge of the embankment, and buffer-locked with the tender; the next vehicle, a bogie composite carriage, was badly telescoped with the brake van, and off the rails; the next, a first-class saloon carriage, was off the rails, and considerably damaged; the next, another first-class saloon

carriage, was off the rails and broken up, having been telescoped by the vehicle next behind it, a Pullman car, which was off the rails with the bogie wheels knocked from under it, and considerably damaged. The other five vehicles in the train were on the rails and not damaged.

One passenger in the boat train, one in the Pullman train, and the rear guard of the boat train, were killed upon the spot, and three other passengers, who were in the boat train, died the same day or the next. Ten passengers in the boat train, and seven in the Pullman train, were injured, the injuries in ten cases being serious, and the fireman and both guards of the Brighton train were injured.

In the permanent way 54 sleepers, 108 chairs, and 50 fish-plate bolts were broken, and nine rails were bent.

The composition of the trains was as follows :—

The 5.35 p.m. up Boat Train.

Engine and tender, 1 first-class carriage, brake van, 2 bogie composite carriages, Pullman car, 2 bogie composite carriages, brake van, 2 bogie composite, and 1 second-class carriages, and brake van; or 12 vehicles, equal in weight to 19—all fitted with the Westinghouse brake. The length of the train was 574 feet 3 inches, and the weight 278 tons 5 cwt., of which all but 22 tons 3 cwt. was on braked wheels.

The 5.45 p.m. up Pullman Train.

Engine and tender, brake van, 1 bogie composite, and 2 first-class saloon carriages, 2 Pullman cars, 1 bogie composite, 1 invalid, and 1 bogie composite carriages, and brake van; or 10 vehicles, equal in weight to 15—all fitted with the Westinghouse brake. The length of the train was 496 feet 7 inches, and the weight 245 tons 14 cwt., of which all but 30 tons 2 cwt. was on braked wheels.

A list of the killed and injured persons, and particulars of the trains, with the damage to the rolling stock, are given in an appendix.

Description.

Wivelsfield station, the scene of this accident, is 10 miles 1 chain from Brighton, 66 chains north of Burgess Hill station, and 2 miles 75 chains north of Hassocks station. The main line is double, nearly straight, and running north and south, and at a point between Burgess Hill and Wivelsfield, 990 yards north of the centre of the former station, and 428 yards south of the centre of the latter station, the branch line from Newhaven, running from the east, joins the main line at Keymer Junction with trailing points on the up line.

Approaching Wivelsfield from the south the line falls from Hassocks station for some distance towards Burgess Hill station, then rises for a short distance, is level through Burgess Hill station, and then falls to Wivelsfield on a gradient of 1 in 264.

There are block signal cabins at Burgess Hill, south of the station, Keymer Junction, opposite to the junction points, and Wivelsfield, south of the station. The distances between these block signal cabins are :—

From Burgess Hill cabin to Keymer Junction cabin	...	Yards. 1,190
„ Keymer Junction cabin to Wivelsfield cabin	...	315

The only signals to which it is necessary to refer are the Burgess Hill up starting signal, the up main distant and up main home signals for Keymer Junction, and the Wivelsfield up starting signal.

Burgess Hill up starting signal is on the up side of the line, about 87 yards north of the north end of Burgess Hill station. The semaphore arm is 14 feet, and the lamp 11 feet, above rail level.

Keymer Junction up main distant signal is on the down side of the line, exactly opposite to Burgess Hill up starting signal, and 842 yards from Keymer Junction cabin. It has duplicate signals, one high and the other low; the semaphore and lamp of the former being respectively 65 feet and 61 feet above rail level, and of the latter 18 feet and 14 feet above rail level.

Keymer Junction up main home signal is on the up side of the line, 142 yards south of the Keymer Junction signal cabin; the semaphore arm being 58 feet and the lamp 54 feet above rail level.

Wivelsfield up starting signal is on the down side of the line, 438 yards north of

Wivelsfield signal cabin, the semaphore arm being 50 feet, and the lamp 44 feet, above rail level.

There is no up home or up distant signal worked from Wivelsfield signal cabin, but the levers in the junction cabin working Keymer Junction up main home and distant signals (as well as the up branch signals, which need not be described), are so controlled from Wivelsfield cabin that they cannot be taken off without the joint action of the two signalmen, and therefore the only signal acting as an up main home signal for Wivelsfield cabin is 457 yards south of this cabin. The point of collision, as nearly as it can be fixed, was about 260 yards north of Wivelsfield cabin, 575 yards north of Keymer Junction cabin, and 717 yards north of Keymer Junction up main home signal. The line here is on an embankment. It may be convenient to note the following distances, measured from the centre of Burgess Hill station, viz. :—

	Yards.
To Burgess Hill signal cabin	200 south.
" " up starting signal	148 north.
To Keymer Junction up distant signal	148 "
" " up home signal	848 "
" " signal cabin	990 "
To Wivelsfield signal cabin	1,305 "
To point of collision	1,565 "
To Wivelsfield up starting signal	1,743 "

Extracts from the Company's Book of Rules and Regulations, detailing the rules bearing upon this accident are given in an Appendix. The line is worked upon the block system, and the following is the only instruction in the general rules for block working as to the conditions under which the "Line clear" signal may be given.

"Unless special instructions are given to the contrary, as explained below, the 'Line clear' signal must never be given until the train or engine has passed the signal box with tail lamp or lamps complete, and is proceeding forward; and, in the case of a stopping train, not until the work of the station has been performed, and the train is proceeding forward, or has been shunted into a siding clear of the main line."

The following is the only "special instruction" in regard to this place :—

"Keymer Junction signalman must not allow an up train to come from the Keymer line after he has given *up main line clear* to Burgess Hill, until the train from the latter station has passed."

Evidence.

"Charles Langbridge Morgan, M.I.C.E., states : I am chief engineer of the London, Brighton, and South Coast Railway. I first inspected the site of the Wivelsfield accident myself on the 26th of December. Most of the wreckage had then been cleared away. I produce a correct survey plan of the line between Burgess Hill and the North end of Wivelsfield Station. The general condition of the two trains after the accident has been marked on the plan from information obtained from those who were first on the spot. The last signals for the up main line, passed by the Brighton Pullman train on approaching Wivelsfield, are the up main distant and up main stop or home signal worked from Keymer Junction signal cabin. The former signal is situated just north of Burgess Hill Station, on the down side of the line, and has two arms working together, the top arm on the post is 65 feet, and the lower arm is 18 feet above rail level, the lamps being respectively 61 feet and 14 feet above rail level. The latter signal is on the up side of the line 142 yards south of Keymer Junction cabin, the arm being 58 feet, and the lamp being 54 feet above rail level. Both signals are worked from Keymer Junction signal cabin, but are controlled from Wivelsfield Station cabin, the levers working the signals in the former cabin being disengaged from the latter cabin. The

following are distances along the line measured from Keymer Junction cabin, viz. :—

	Yards.
To Keymer Junction up home signal	142 south.
To Keymer Junction up distant signal	842 "
To Wivelsfield signal cabin	315 north.
To point of collision	575 "

The up starting signal from Burgess Hill is on the up side of the line, almost immediately opposite the Keymer Junction up distant signal. There is the usual telegraphic communication between the signal cabins. The following are the correct distances between certain stations on the line :—

	Miles.	Chains.
Brighton to Wivelsfield	10	1
Brighton to Hassocks	7	6
Hassocks to Burgess Hill	2	9
Hassocks to Wivelsfield	2	75

The following are distances from the centre of Burgess Hill Station :—

	Yards.
To Burgess Hill signal cabin	200 south.
To up starting signal	148 north.
To Keymer Junction up distant signal	148 "

	Yards.
To Keymer Junction up home signal	848 north.
To Keymer Junction signal cabin	990 "
To Wivelsfield signal cabin... ..	1,305 "
To point of collision... ..	1,365 "
To Wivelsfield up starting signal	1,743 "

The line falls from Hassocks in the direction of Burgess Hill, and after a short length of rising gradient is level through the station. It then falls to Wivelsfield on a gradient of 1 in 264.

Frederick Barkshire, states: I am a district superintendent in the Traffic department, and live at Brighton. The following are extracts from the signalmen's books, showing the time the Pullman train passed the cabins on the 23rd December, after leaving Brighton:—

Montpelier Junction...	... 5.54 p.m.
Lovers' Walk	... 5.56 "
Preston Park, South...	... 5.58 "
" " North	... 5.58 "
Patcham	... 6.0 "
Clayton cutting	... 6.1 "
Hassocks	... 6.8 "
Burgess Hill	... 6.11 "
Keymer Junction	... 6.13 "

David Greenwood, states: I am traffic superintendent of the London, Brighton, and South Coast Railway. I produce the Rule Book of the Company. The rules relating to fog signalling are from No. 61 to No. 71A. All drivers and signalmen are bound by these rules, and the rule for drivers upon which we principally rely in the case of fog is No. 61A. Strictly speaking the station master at Wivelsfield is responsible for seeing that there are fog signalmen posted, when necessary, at the regulated signals worked from Wivelsfield and Keymer Junction cabins; the latter cabin being under Wivelsfield. The fog signalmen on the Keymer branch are posted from Keymer crossing signal-cabin. The only fog-signalman posted from Keymer Junction cabin is the man at Keymer Junction up distant signal near Burgess Hill. I found the name and address of platelayer Lewry, who in ordinary course would take this place, posted in Keymer Junction cabin when I went there at midnight on December 23rd. This man was away ill, and the name of the man who took his place in the gang had not been posted. The names of the three men fogging from Wivelsfield station cabin were properly recorded in that cabin.

Charles Henry Vinny, states: I have been 26 years in the service, and a signalman for 18 years, nine years at Wivelsfield. On the 23rd December I came on duty at 3 p.m. for nine hours (about). In my cabin there are eight working levers. We work absolute block in both directions, viz: to Keymer Junction, southwards, and Folly Hill, northwards. We work under the ordinary rules with no special instructions. I have no independent up home or up distant signal, but I control Keymer Junction up home and distant signals, both for main and branch. The following are block signals recorded in my book:—

For the 5.20 p.m. up train from Lewes.

Approaching signal received from Keymer Junction	5.54
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Line clear given to Keymer Junction... ..	5.55
Entering section signal received from Keymer Junction	5.57
Arrival signal given to Keymer Junction	5.57
Approaching signal given to Folly Hill... ..	5.57
Line clear received from Folly Hill	5.57
Entering section signal given to Folly Hill	5.59
Arrival signal received from Folly Hill... ..	6.14

The 5.35 p.m. up train from Newhaven (the boat train).

Approaching signal received from Keymer Junction	6.2
Line clear given to Keymer Junction... ..	6.2
Entering section signal received from Keymer Junction	6.8
Arrival signal given to Keymer Junction	6.9
Approaching signal given to Folly Hill... ..	6.14
Line clear received from Folly Hill	6.14
Entering section given to Folly Hill	6.14

The 5.45 p.m. up Pullman train from Brighton

Train approaching signal received from Keymer Junction	6.10
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I did not give the "line clear" signal, and I have no other signal recorded for this train. When the boat train was approaching, all my up signals were at danger, because I had not received the line clear from Folly Hill for the preceding train. I pulled off my up home signal lever controlling the Keymer up branch home as soon as I got the train on from Keymer Junction at 6.8. The train stopped with the engine near my up starting signal, which was at danger. It stopped for five minutes. At 6.14 I lowered the starting signal, but I cannot say for certain whether the train started or not. I got the train approaching signal for the Pullman train at 6.10, which would be when the train left Hassocks. My main line signal levers remained at danger. There is no back light on the home signal, but the signal was and is in good order, and I have no doubt the arm was at danger. I heard the Pullman train approaching through the junction as soon as I had pulled off my up starting signal. There was no time to go out to put down fog signals, so I got my hand-lamp and waved a red light from the window. I believe it was seen. The train passed my box at about 6.14, or almost immediately after I had pulled off my up starting signal. It was running at 50 miles an hour I should say. I cannot say whether steam was on or off, or whether or not the brakes were applied. I heard the crash of the collision almost immediately. The whole train had passed my cabin. I did not hear any whistling from the engine. It was a very thick evening. It was a bit thick when I came on at 3 o'clock, and got gradually worse, and steadily worse. I could not see the tail lights on the boat train as it was standing, although I saw them as it passed my cabin. I could not see the light in my up starting signal. I could not see this light at 4 p.m. I wired to Burgess Hill signalman at 3.30 p.m. to ask if he

had seen the fogman about. The fogman who works at my up starting signal is named Amos Cox, and he lives near Keymer crossing. He came at 4.30 p.m. and went at once to his post. The fogmen at the up distant signals are called by Keymer Junction signalman; not by me. Burgess Hill signalman had told me he was going to send for the fogmen, but I heard nothing more from him. I did not know whether the men were there or not. The weather was so bad that there ought to have been fogmen about. I had telephoned to Mr. Farley, the stationmaster, at 3.30 p.m. to ask if he had seen the ganger as I wanted the fogmen out. He replied that he had seen the ganger who had gone for the fogmen, and they were at their post at the up starting signal, and the down home signal and the Keymer Junction down distant signal at the time the collision occurred. The collision blocked both lines.

Richard Edwards, states: I have been 47 years in the service, and a signalman for 36 years, 27 years at Keymer Junction. On the 23rd December, I came on duty at 2 p.m. to work till 10 p.m. There are 11 working levers in my cabin, and we work absolute block under the ordinary rules, with no special instructions. The next block signal cabin on the main line southwards is Burgess Hill, and the next on the Keymer branch is Keymer Crossing. I have an up main home signal, and an up main distant signal, both of which are controlled from Wivelsfield. On the branch I have a slot on the Keymer Crossing up home signal but not on the outer home signal. I also control the Keymer Crossing up distant signal. The following are entries in my train record book:

For the 5.20 p.m. train from Lewes.

Approaching signal received from Keymer Crossing	...	...	5.44
Line clear given to Keymer Crossing	...	...	5.54
Entering section received from Keymer Crossing	...	...	5.55
Train arrival signal given to Keymer Crossing	...	...	5.56
Approaching signal given to Wivelsfield	...	...	5.53
Line clear received from Wivelsfield	...	...	5.55
Entering section signal given to Wivelsfield	...	...	5.55
Arrival signal received from Wivelsfield	...	...	5.57

For the 5.35 p.m. up train from Newhaven (the boat train).

Approaching signal received from Keymer Crossing	...	...	6.0
Line clear given to Keymer Crossing	...	...	6.4
Entering section received from Keymer Crossing	...	...	6.6
Train arrival signal given to Keymer Crossing	...	...	6.7
Approaching signal given to Wivelsfield	...	...	6.6
Line clear received from Wivelsfield	...	...	6.0
Entering section given to Wivelsfield	...	...	6.6
Arrival signal received from Wivelsfield	...	...	6.8

For the 5.45 p.m. up train from Brighton (Pullman train).

Approaching signal received from Burgess Hill	...	...	6.9
Line clear given to Burgess Hill	...	...	6.9
Entering section signal received from Burgess Hill	...	...	6.11
Train arrival signal given to Burgess Hill	...	...	6.13
Approaching signal given to Wivelsfield	...	...	6.9
The line was not cleared for this train.			

I believe my clock was right. The Pullman train passed my cabin running very fast at 6.11½. Steam was full on, and the brakes were not on. Both my distant and home signal levers were at danger. The levers are controlled from Wivelsfield. I could not see the arms of the signals or the lights. The signals were, and are, in good working order. I have no doubt whatever that the signals were at danger. It was very foggy. I could not see any signal lights from my cabin. The fog began at about 3.30 and got gradually worse. I had no fogmen out on the main line. At about 3.45 p.m. I telegraphed to Burgess Hill signalman to send for my fogman, who should have been posted at my up distant signal at Burgess Hill. He answered that he had sent for the fogmen. About three times afterwards I asked him if my fogman was there, and he said he had not come yet. I did not record the time of my messages, but I think I asked him last at about 5.45. The fogmen were posted on the Keymer branch, but these are called by Keymer Crossing signalman, not by me. The man who should have fogged at my up distant signal is Alfred Lewry who lives at Keymer Crossing. I knew he was ill. I do not know who was detailed to take his place. Lewry belonged to the Burgess Hill gang. I had a conversation about a fortnight ago with ganger Packham. He told me that because Lewry was ill, if fog came on in the night, he would arrange to take Amos Cox's place at my up starting signal so that Amos Cox would take the place of Lewry at Burgess Hill at Keymer Junction up distant signal. I knew that the man who had taken Lewry's place in the gang would do his fogging if the fog came on in the day, but he lives at Brighton and would have gone home at night. This arrangement was only during ganger Tullett's illness. I had no more conversation with Packham than what I have said. I ought to have posted up in my cabin the names and addresses of the fogmen. I knew Lewry was not able to fog for me on the 23rd. I did not know who had taken his place. I ought to have known. I was never informed, and I never asked. When I heard the Pullman train approaching I tried to get down to put fog-signals on the line, but had no time to do so. I waved a red light from the landing outside my cabin. This was before the engine of the train passed me. My cabin is a very high one. There was no fogman at my cabin, and the only fogman I am responsible for is the one at my up distant signal, where Lewry would have been. I know Rule 64A, but there is no signal at my cabin. I did not understand the rule to mean that I should put down fog-signals opposite to my cabin. The home signal was too far away for me to put them there. I do not know whether the signal lamps were lighted. I telephoned to Wivelsfield for a fogman for my up distant signal when I found I could not get one from Burgess Hill, but this was not till after 6 o'clock. The fogman at this signal is always got from the Burgess Hill gang, and is posted when I ask for him. The answer I

got from Wivelsfield was that Packham said that all his fogmen were out. I always book the arrival signal of a train at the time I send the signal, and not at the time the train arrives. The Pullman train passed at 6.11, but I did not send the signal till 6.13, the time I have booked, because I was looking after the train up to the time of the collision. The Pullman is booked to pass my cabin at 6 p.m. and the boat train at 6.5.

William Everest states: I have been 17 years in the service and a signalman for eight years, one year and nine months at Burgess Hill. On the 23rd December I came on duty at 2 p.m. for eight hours. The train approaching signal for the Pullman train was given to Keymer Junction at 6.8, and the line was cleared at once. It passed at 6.11, running very fast. All my signals were off for it. It was due to pass at 5.59. It was very thick at the time. My up starting signal was off, but I could not see the light. I cannot speak as to the position of the Keymer Junction up distant signal. There was no fogman at it. I have to call two fogmen when necessary, one is for my up distant signal and the other is for my down distant signal. There was a man at the down distant signal, but none at the up distant signal. I had wired to Hassocks for the man, named Charles Cox, at 4.10. He lives at Hassocks. The reply I got from the signalman was "I have told the head porter about it." I telegraphed again to Hassocks at 4.15: "Do you know where he lives?" Hassocks answered, "No." I telegraphed again: "He lives at No. 9, Bonchurch Street. Tell him he must come at once." Hassocks answered, "Right." At 4.20 p.m. I telegraphed to Hassocks: "Have you got fogmen out?" Hassocks answered, "No." I telegraphed back: "It is thick, I cannot see my starting signal." Hassocks replied: "It is thick here." I replied, "Right." At 3.30 I had called head porter King, and said: "Do you know where the fogmen are, as I want them out?" I then called Tom Carver, a porter, and said: "Will you go and tell the station-master I want fogmen out." Head porter King came up and said he would see what he could do. I did not see the station-master myself. At 3.45 p.m. I had received a message from Keymer Junction asking if I had fogmen out. I told him "No, I cannot get them to come." He asked me to send for fogmen. The man who should fog at the Keymer Junction up distant is named Lewry. I knew that he was ill. The man who should have taken his place is a platelayer living at Brighton. I do not know his name. I took no steps to get him. The following are the signals recorded in my book for the Pullman train:—

Approaching signal received from Hassocks	6.5
Line clear given to Hassocks ...	6.5
Entering section received from Hassocks	6.8
Arrival signal given to Hassocks...	6.11
Approaching signal given to Keymer Junction	6.8
Line clear received from Keymer Junction	6.8
Entering section given to Keymer Junction	6.11
Arrival signal received from Keymer Junction	6.12

Robert Ancock states: I am signalman at Keymer crossing, and was on duty on the

23rd December. The following are the signals recorded in my book for the 5.35 up boat train:—

Approaching signal received from Spatham	6.2
Line clear given to Spatham ...	6.2
Entering section signal received from Spatham	6.4
Arrival signal given to Spatham ...	6.9
Approaching signal given to Keymer Junction	6.2
Line clear received from Keymer Junction	6.6
Entering section given to Keymer Junction	6.8
Arrival signal received from Keymer Junction	6.10

William King states: I am head porter at Burgess Hill, and have been 15 years in the service. On the 23rd December I received a message from signalman Everest that Keymer Junction required a fogman out, and that ours were wanted as well. I was shunting at the time, but as soon as possible after I went to the station-master. I told him what Everest had said about fogmen, and would he send for them. This was at about 3.45. The fogman at Keymer Junction up distant signal is provided out of the Burgess Hill gang. His name is Moore who is taking Lewry's place. The stationmaster said "I have only a lad on the platform and have no one to send." I said "I have done with porter Carver in the goods yard, and will send him to you on the platform." I asked if I should send the lad for the fogmen, and the stationmaster said "No, send Carver to me and I will send for the men." I sent Carver to the platform. I did nothing more as the matter was in the hands of the stationmaster. We were very busy in the goods yard. The porters were fully employed. On a foggy night I could not see Keymer Junction up-distant signal from the platform.

Stephen Gravett states: I am a platelayer and have been 20 years in the service. On the 23rd December, after booking on for fogging at Burgess Hill signal cabin at five p.m., I went out to fog at Burgess Hill down distant signal. On my way there I passed Keymer Junction up distant signal. I saw it from the platform quite plainly. It was giving a good light and was at danger. After I got to my post I could see the light on Burgess Hill down distant signal from a point 35 yards north of the post, where I stood all the time. I was standing on the down side of the line. The lamp was burning well. The Burgess Hill down distant signal is on the same post as the Keymer Junction up stop signal, and one lamp acts for both signals. When the Pullman passed this lamp was burning, but I was on the wrong side of the signal for seeing whether the up signal was off or on. The fog kept about the same after I went on at 5 p.m. I saw the Pullman pass. It was running between 50 and 60 miles an hour I should say.

Edward Trillett states: I am ganger of permanent way in charge of the length between Burgess Hill and Hassocks. I have three regular men in my gang, viz.: Alfred Lowry, Stephen Gravett, and Charles Cox. Lewry lives at the Railway Cottages, at the Junction, Gravett at Norway Cottages, Junction Road, and Cox at Bonchurch Road, Hassocks. Stedman came to me on the 23rd December at about 5.10. He said I was wanted out fogging. I said "I really cannot come I am too ill. You go back and see

the stationmaster, and ask him whether he can get ganger Packham from the next length." I meant the Burgess Hill stationmaster. No arrangement had been made for Packham to take up fogging at Burgess Hill. I worked up to 1 p.m. that day and then went home. The man who should fog Keymer Junction up distant signal is one of my gang, Alfred Lewry. He was ill and has been for some time. A man from Brighton named Moore had taken his place temporarily in the gang. The platelayers leave off work at 1 p.m. on Saturdays. There was no fog at the time Moore went home at 1 p.m. No arrangement was made for any one to take his place fogging at Keymer Junction up distant signal. I knew there would be no one for this post unless I went there myself, or unless the Wivelsfield stationmaster had got some one else from above. A ganger is supposed to see that his fogmen are at their posts. I was taken ill with bad pains in the inside at about 3 p.m. I had no one to send anywhere except a little girl eight years old. Packham lives $1\frac{1}{4}$ miles away from me. I had been laid up for nearly three months, but was at work for about a fortnight up to the day of the accident. I have not been to work since. Amos Cox was taking my place as ganger when I was away. At about 4 p.m. I noticed that it came on foggy.

John Stedman states: I have been nine months in the service and am porter at Burgess Hill. In the evening of the 23rd December the stationmaster sent me to ganger Tullett at 4.50 to tell him he was wanted to come out to fog. Tullett said he had pains in his inside and was going to bed and could not come. I went back to the station having been away about half-an-hour. I told the stationmaster what Tullett had said and then went to tea. It was then about half-past five. Tullett said: "Better send for Packham." I told the stationmaster this but he did not tell me to go to Packham.

Alfred Ernest Tranah states: I am stationmaster at Burgess Hill and was on duty on the 23rd December. At about 4 p.m. I was at work in my office. Head porter King came to me and said the fogmen were wanted. I told him to instruct the signalman on duty to wire Hassocks for platelayer Charles Cox and to send porter Carver, who was assisting him in the goods yard, to me, to assist me with the platform work, so that I could send a lad porter to call the fogmen. Just as the arrangement was made I opened my office door at about 4.2 and saw a platelayer named Standing. I called across the line to him "You are wanted for fogging at once." "Call Cox (Amos) and Gravett." He said "Right, sir" and started off. Gravett's place is at the down distant signal and the man at the up distant signal is Charles Cox who resides at Hassocks. King had told me that Keymer Junction wanted a man, and I intended Amos Cox to go to his up distant signal knowing that Lewry was ill. As I had sent Standing I did not send the lad porter. No one came but I heard that Gravett was at the station. Porter Carver told me that he had seen Gravett and had told him he was wanted out fogging and had better come and see him. He did not come. As the porter had told me he was in the station and dressed as if he was going away I said we would make a search for him. Porter Carver found him sitting down in the waiting room and came and told me. I at once went to him and informed him that I wanted him out fogging at once. He said "I am going to Worthing to see my daughter and have

taken my ticket, what am I to do?" I said "You know your duty. Your ticket is of no consequence, the clerk will give you the money back." Eventually he went to the signal box and went fogging at the down distant signal. I inquired at the signal cabin at about 4.45 p.m., and ascertained that Charles Cox had not been got from Hassocks. I went to Keymer Junction up distant signal and found there was no one there. I then sent the lad porter to ganger Tullett, the ganger of the length, to tell him to come out fogging at once. The lad porter came back and said Tullett could not come as he had a pain in his stomach and was just going to bed. That would be between 5.30 and 6. I then went again to the signal box and asked if anything more had been heard from Hassocks. I told the signalman to wire again to Hassocks to say that the fogman had not come. While I was in the signal box the news came from Wivelsfield that the Pullman had run into the boat train. I do not know what became of Standing. Standing is not under me and I do not know where he fogs, but I took it for granted that he would call Gravett and Cox on his way to his post. If ganger Tullett had come I would have put him on the Keymer Junction up distant signal. I had no men to employ as fog signalmen. I was short handed and had one man laid up. The work was very heavy, being Christmas week. I know Rule 22. Between 4.30 and 5 o'clock I went to Keymer Junction up distant signal, and found there was no fogman there. The lamps were lighted, and at that time they were showing a red light. Between 4.30 and the time the Pullman passed, five up trains and two engines had passed. When Stedman returned from ganger Tullett he said something about Packham or seeing Packham, but I did not understand him to say that Tullett had said "Better send for Packham." I have six porters at my station, but there were only five there that day. After the accident I saw Keymer Junction up distant signal showing a danger signal.

John Farley states: I am a relief stationmaster, and was in charge at Wivelsfield on the 23rd December, during the absence of the stationmaster due to illness. It came on very foggy at about 3.30. I knew that it was my duty to see that fog signalmen were posted as soon as they were necessary. The fogman at Keymer Junction up distant signal is under Keymer Junction signal cabin, but is always found from the Burgess Hill gang. I was asked by the signalman in Wivelsfield Station cabin for fogmen soon after 3.30 p.m., and I sent for them, but the signalman at Keymer Junction signal cabin did not ask me for one until 6.8 p.m. I first ran after ganger Wells who had just left the station where he had been talking to me, but I could not catch him up, so I turned back to go for ganger Packham. Before I reached the station the collision occurred just north of the station. It was then exactly 6.14 p.m. I had only been acting stationmaster at Wivelsfield for five days. Keymer Junction signal cabin is under Wivelsfield Station. The Wivelsfield fogmen were all at their posts, and I thought, until the Keymer Junction signalman telephoned for me at 6.8, that the man at his up distant signal had been as usual posted from Burgess Hill.

Richard Stringer states: I am permanent-way inspector in charge of the line from Brighton to Three Bridges. The length from about a mile north of Wivelsfield to the middle of Burgess Hill Station is in charge of ganger Packham.

The length from Burgess Hill to Hassocks is under ganger Tullett. In Packham's gang there are George Wickens, Amos Cox, and Henry Standing. In Tullett's gang are Stephen Gravett, Charles Cox, and Richard Lewry. Lewry has been ill for several weeks and a man named Moore has been detailed from Brighton to take his place temporarily. On Saturdays the men leave work at 1 p.m., and no doubt Moore had returned to Brighton at that time on the 23rd December. The rule under such circumstances is for the ganger to take the fogging as long as it does not interfere with his other duties. The fogman for the Keymer Junction up distant signal is found from Tullett's gang. I did not myself make any arrangement as to how the fogging was to be done at night, or when Moore was away. Ganger Tullett had been ill for some weeks but resumed duty a fortnight before the 23rd. He fell ill again on the 23rd and is still ill. Standing fogs at Wivelsfield down home and Keymer Junction down distant. Amos Cox fogs at Wivelsfield up starting signal and Wickens at Folly Hill up distant signal. Gravett fogs at Burgess Hill down distant signal and Charles Cox at Burgess Hill up distant signal. In Moore's absence Tullett should have taken Lewry's place at Keymer Junction up distant signal. Tullett being taken ill, the only other man available was ganger Packham, who would have come if he had been sent for.

Robert Packham states: I am ganger in charge of the length from Burgess Hill to a mile north of Wivelsfield. All my gang are detailed to fog at signals north of Wivelsfield. The Burgess Hill fogging is done by Tullett's gang. My men know where to go when called out, their posts having been allotted to them by me in the first instance. On the 23rd December the three men were called out and were at their posts. At a little before 4 p.m. a porter came and told me the men were wanted for fogging, and I called out the men. I had no fogging post myself. I knew Tullett had been unwell, but I thought he was on duty again. If I had known he was unable to take up fogging duty I would have gone myself, or sent Amos Cox to Burgess Hill to fog at Keymer Junction up distant signal.

Herbert Moore states: I am a permanent way man, and have been two years in the service. On the 23rd December I was taking the place of plate-layer Lewry, in Tullett's gang. I had done his fogging duties at Keymer Junction up distant signal twice by day, and once by night, before 23rd December. I know the rules as to fogging, having been instructed by Amos Cox, who was acting ganger in Tullett's place when I took up the work. On the 23rd December, being Saturday, I left off work at 12.15, and went back to Brighton, where I live. I had no instructions to return if I saw fog coming on. If I had been told to I would have come, and could have got a train. It was very foggy at Brighton between 3.30 and 4.0. Inspector Stringer had told me that after I had left duty I need not return in case of a fog, but that if a fog came on while I was on duty I must take up the work. He told me that arrangements had been made for the fogging duties if a fog came on after I had left. He did not tell me what the arrangements were.

Alfred Westlake states: I have been 24 years in the service, and a driver for 20½ years. On the 23rd December I came on duty at 10.35 a.m. at Battersea to work till about 7.30 p.m. My engine (No. 206) is an eight-wheeled engine with

leading bogie, and driving and trailing wheels coupled. It is fitted with a Westinghouse brake working blocks on the four coupled wheels. I was driver of the 5.45 p.m. up Pullman express from Brighton. I heard the train was equal to 18, but I do not know how it was made up. The whole train was fitted with the Westinghouse brake. We started a few minutes late; I am not sure how much, but I think about 5 minutes. The train was not timed to stop until it reached Grosvenor Road, Victoria. It was very foggy all the way. I ran over no fog signals on the way, but I was able to see all the signals when I got up to them, and all were off. We passed Burgess Hill with the Burgess Hill signals off for me, running at about 35 miles an hour. I was losing time, as I was running cautiously owing to the fog. The fog was not so thick at some places as at others, and I saw the Burgess Hill up distant signal some 20 yards away; at other places I could not see them any distance off. It got very thick again after passing Burgess Hill up distant signal. I was riding on the left side of the footplate. I did not see the Burgess Hill up starting signal or the Keymer Junction up distant signal. I knew I had passed them for I had stepped across the footplate to look at the Keymer Junction up distant signal, and that is how I missed the up starter. I went back to my own side to keep a look-out for the Keymer Junction up home signal. I did not see that either. I said to my mate, "I cannot see anything my side—look out." The reason I said that was that he was firing, and he put his shovel back and looked out. I continued to look out my side, and just then my fireman said, "Red light out of the box, mate." At that time my speed was about 35 miles an hour. I had not checked the speed by using my brake, but I had been running from Hassocks to Burgess Hill up distant signal with steam off, and on seeing that off I had applied steam just a trifle. I had a pressure of 70 lbs. on my Westinghouse brake gauge. I at once applied my brake full power and it acted well, going on with a grip. My steam was off at the time, as I had shut it off at Burgess Hill before I stepped across to look for Keymer Junction up distant signal. I think my brake was well on when entering Wivelsfield Station platform. It reduced my speed considerably before the collision occurred, at which time I estimate my speed to have been about 25 miles an hour. I remained on my engine and was not hurt at all. I had seen the tail lights on the boat train, but not more than 20 yards away. By that time I had done all I could to stop. My brake was hard on and my engine was reversed. I had not time to apply steam. My engine seemed to run some way before it came to a stand, when it was turned on its side across the down line. I had not seen fogmen out anywhere on the journey, but all the signals up to Keymer Junction up distant signal I had seen off. I did not go back to see how the Keymer Junction signals were standing after the collision. I did not sound my whistle before the collision. My fireman applied the tender brake. The sand boxes were not opened. I know rule No. 61a. I was misled by having a clear road all the way, and not finding any fogmen out, although it was not a sudden fog, but had been on for over two or two-and-a-half hours. If it had been a sudden fog, I would have stopped when I passed the signals without seeing them. If there had been fogmen I should have got a green light signal from them at signals which were all right. The up distant signal for Keymer Junction is a good signal on a clear day, although it is on the wrong side of the line, but it is a bad signal on a

misty day. I think that it is misleading, when a long train is standing at Wivelsfield up starting signal, to allow a train to run up to Keymer Junction up home signal, without some longer warning than Keymer Junction up distant signal, especially in bad weather. I think that it would be better that the Burgess up distant should be kept at danger when the Keymer Junction up distant signal is at danger. I think that the reason that I missed the Keymer Junction up distant signal was that on stepping across I had the glare of the fire in my face, and there was a lot of steam and fog about. I have been driving on the main line from Brighton to London for about five years. I have never made any complaint about the signals. The fog was thicker at Keymer Junction than it was at any other part of the line. I think I missed the Keymer Junction up home signal because it is on a high post.

William James Franklin states: I have been 15½ years in the service, and 10 years a fireman. On the 23rd December, I was fireman with driver Westlake. I have heard his evidence and it is correct. It was at the Wivelsfield signal box that I saw the red light. I was hurt on the head in the collision, and on the shoulder when helping to get the people out of the damaged train.

Thomas Wright states: I have been 29 years in the service and a driver for 14½ years. On the 23rd December I came on duty at 8.55 a.m. to work till about 9 p.m. I would not have been away from my engine all day. My engine (No. 193) is a six-wheeled engine with driving and leading wheels coupled. It is fitted with the Westinghouse brake working blocks on the four coupled wheels and on the six tender wheels. I left Newhaven with the 5.35 p.m. up boat train at right time. The train was equal to 18 vehicles, about the usual weight. It was foggy all the way, and I lost a little time. With the exception of Lewes up distant signal, where I was checked, all the signals up to Keymer crossing up distant signal were off for me. This signal was at danger and I ran over a fog signal. I pulled up to walking pace and came slowly up to Keymer crossing up home signal which was off. The Keymer Junction up distant signal was on and I ran over fog signals. I came on at walking pace into Wivelsfield Station, where I stopped with my engine within a few yards of the up starting signal. I stood there for about five minutes when the signal was lowered. I opened the regulator and started. I had run about four carriage lengths when I felt something run into the rear of the train. My mate was knocked across the footplate, but I was not moved. I stopped as soon as I could. The brakes were applied automatically. I did not run more than four carriage lengths. I went back to the front guard and asked if he knew what was the matter. He was in the second vehicle from the tender and the train was broken behind his brake van. I then went and gave assistance at the wrecked carriages. It was very foggy at the time. I had seen all the signals on the journey, but not until I was near to them. It is not usual to be stopped so long at Wivelsfield. As soon as I saw what had happened I ran across to the man fogging on the down line, and told him to put down fogs and to go back 50 yards and put down another half-dozen. He said he would.

Frederick John Borrowes states: I have been 16 years in the service and a fireman for nine-and-a-half years. On the 23rd December I was

firing with driver Wright. I have heard his evidence and it is correct.

Altimus Miles states: I have been 35 years in the service and 32 years a guard. On December 23rd I was guard of the 5.35 up boat train from Newhaven. It was made up as follows:—Engine and tender, empty first-class carriage, brake van (in which I was riding), two bogie composites, Pullman car, two bogie composites, brake-van (empty), two bogie composites and brake van, in which there was guard Davis. I have no note of a second-class carriage in front of the rear brake van, in the London Bridge portion of the train. It may have been added after I took my notes. We started at right time. It was foggy all the way from Lewes to Wivelsfield, and we lost a little time. We were checked at the Keymer crossing signals, and came very slowly into Wivelsfield, coming to a stand at the up starting signal. In my experience during a fog, if drivers do not see the fixed signals, and do not run over fog signals at a distant signal, they usually come slowly forward to the stop signal. I have worked the boat train for 15 months, and it is very seldom that we are in front of the Pullman train. The train was pretty full. I think there were 104 passengers, mostly in the Victoria portion which was in front. None of the carriages in this portion were off the rails, although some were damaged. The London Bridge portion was broken up.

John Woodhead states: I am out-door locomotive superintendent at Brighton. At 6.45 p.m. on December 23rd I received a telegram saying a serious collision had occurred at Wivelsfield, and that both up and down lines were blocked. I at once went to the runningshed to arrange for the sending of the break-down gang and steam crane, which were ready to leave soon after 7 p.m., but which did not start until 7.30 p.m., in consequence of waiting for doctors who had been sent for. In the morning I had arranged for the breakdown gang to be ready for emergencies from 2 p.m. till all trains had left. On receipt of the message I wired Mr. Billinton, locomotive superintendent, and he joined the train at Preston Park. We arrived at Wivelsfield about 7.50 p.m., and seeing the serious results of the accident, the break-down gangs from New Cross and Battersea, and the steam-crane from New Cross, were telegraphed for and instructions given for strong gangs of men to be sent immediately. While looking round the scene of the accident, I was applied to for engine and carriages to convey injured to Brighton, and for this purpose the Pullman car, Arundel, and three carriages which had formed the rear portion of the 5.45 p.m. Brighton to Victoria train, and which had not been damaged, were detached from the damaged portion and taken to the down side, all the wheels being gauged while the injured passengers were being put in the train, which was worked to Brighton by engine which had brought up the break-down gang. The Pullman train I found in the following condition:—The engine, No. 206, "Smeaton" (four-wheels-coupled bogie) was over on its side on down line, the trailing wheels lying slightly in the six-feet way; the tender was on its wheels, but across the six-feet and up lines; the next vehicle, a brake-van, was also across the line, partially down the bank, and dock-buffered with the tender; the next vehicle was a bogie-composite, and was partially telescoped with brake-van and off the rails; the next vehicle, a first-class

saloon; was off the rails; the next vehicle, a saloon, was off the rails, and partially telescoped in Pullman car "Maud," which was off the rails, and its bogie wheels knocked partially from under it; the rest of the train consisted of the undamaged stock which conveyed the injured to Brighton. When the injured had left for Brighton, another engine came from Brighton, and we commenced to replace carriages on the metals. I only had time to glance at the boat-train, and saw that the brake-van and a carriage were partially down the bank, and that a bogie carriage had been knocked off its framing. I can say nothing more about the boat-train, as being

called away to get train for injured, I remained working at the south end of the scene of accident, getting the carriages on the rails. The break-down gangs from New Cross and Battersea arrived something after 10 p.m., and commenced working at the North end of the scene of accident. In the meantime the engine and undamaged carriages of the boat-train formed a "special" to London, taking many of the injured, who were conveyed to Guy's Hospital. We got the engine and tender and all the carriages on the line soon after 3.30 a.m. on 24th ultimo. I found the line very much damaged; the rails were torn from the sleepers and bent.

Conclusion.

The circumstances under which this lamentable collision occurred are very clearly described in the foregoing evidence, and the causes of the disaster are easy to determine. There is very little discrepancy on material points between the statements of the witnesses, considering the number of persons examined, and the different interests involved; and the one satisfactory feature of the case is the absence of any serious attempt on the part of any of the servants of the Company to evade responsibility, by throwing the blame on a fellow servant, as too often happens.

It may be as well, before entering upon the history of the case, to say that, judging from the entries in the train record books in the different signal cabins concerned, it is evident that there was some difference between the times of the clocks in these cabins, although each of the signalmen believed that his clock was right, for the differences in the times entered are greater than can be accounted for by delays in making the entries, or by the practice of not booking fractions of minutes. It seems, however, most probable that the clocks in the main line cabins up to Burgess Hill were right, but that the clocks in Keymer Junction and Wivelsfield cabins were one or two minutes faster than the others, and in dealing with the running of the trains I have assumed that this was the case.

The 5.35 up boat train started from Newhaven at right time, and, having been checked at one or two places, and on approaching Keymer Junction, passed Wivelsfield signal cabin at 6.9 p.m., about three minutes late. It came to a stand at Wivelsfield up starting signal, the preceding train, the 5.20 up train from Lewes, which had passed Wivelsfield at 5.59 p.m., not having been cleared from Folly Hill, the next block signal cabin northwards.

The starting signal was lowered at 6.14 p.m., according to the clock in Wivelsfield cabin, but probably between 6.12 and 6.13 p.m., and the boat train had started, and run forward for a distance of about 40 yards, at the outside, when the collision occurred.

The 5.45 up Pullman train from Brighton was seven minutes late in starting, passed Hassocks at 6.8 p.m., Burgess Hill at 6.11 p.m., and Keymer Junction at 6.13 p.m. (probably), and was still running at a speed of some 20 to 25 miles an hour when it overtook and struck the boat train, with the terrible results detailed above; the driver having become aware of the danger, and having taken steps to stop his train, only when a red light was shown to him from Wivelsfield signal cabin about 260 yards from the point of collision, at which time his speed was probably about 40 miles an hour.

There was no irregularity in the block-working of these trains, and although the Pullman train almost invariably precedes the boat train, the signalman at Keymer Junction was quite justified in giving the latter train the precedence, and allowing it to enter upon the main line at 6.7 p.m. or 6.8 p.m., at which time he had not received any intimation of the approach of the up Pullman train, which, as a matter of fact, had not then passed Hassocks, over $2\frac{1}{2}$ miles distant. Both trains were express trains, running through to London without stopping.

The cause of the Brighton train being late in starting was that the 3.50 p.m. down train, a train which should return to London as the 5.45 up train, was, owing to the heavy Christmas traffic and the fog, very late in leaving London, and therefore the 5.45 train had to be made up of vehicles at Brighton.

The driver of this train found all the signals off for him, and actually saw them off as far as Burgess Hill but he did not see either the Burgess Hill up starting signal, the Keymer Junction up distant, or the Keymer Junction up home signal, the first of which signals was off for him, the two others being beyond any question at danger, and with the lamps burning properly.

He did not however take any steps to pull up his train, until, as stated above, he was passing Wivelsfield signal cabin, and his fireman told him that there was a red light being waved from the cabin.

He estimates his speed to have been 35 miles an hour at Burgess Hill, and at Keymer Junction and Wivelsfield, while the signalman at Wivelsfield estimates it at 50 miles an hour, and a fog-signalman near Keymer Junction at between 50 and 60 miles an hour, and the signalmen at Burgess Hill and Keymer Junction say the train was running "very fast."

An estimate of speed calculated from the times recorded in the signalmen's books, on short lengths of line, and where fractions of minutes are not booked, is absolutely unreliable, but, as it appears that after leaving Brighton, the train was losing time, and took 21 or 22 minutes at least to run 10 miles 1 chain, instead of 15 minutes, the usual time, it is clear that the driver's estimate is pretty nearly correct, although probably, as he was at that point running upon a falling gradient, his speed was increasing between Burgess Hill and Wivelsfield, and may at the latter place have been as high as 40 miles an hour.

The fog which prevailed at the time had commenced at about 3.30 p.m., and had got steadily worse, so that at the time the accident happened the distance at which a signal lamp could be seen was small, varying, no doubt, according to the position and height of the signal lamps, and according to the density of the fog at each particular place. The evidence, however, leaves no doubt whatever that all fog-signalmen should have been at their posts, whereas there was no man at Burgess Hill up distant signal, or Keymer Junction up distant signal, for which posts there are men detailed.

The evidence of platelayer Stephen Gravett, who was acting as fogman at Burgess Hill down distant signal, which is on the same post as Keymer Junction up home signal, is to the effect that, on his way to his post, he could see Keymer Junction up distant signal from Burgess Hill platform, a distance of about 90 yards, and the light on the signal where he was fogging from a measured distance of 35 yards, so that, although the fog was no doubt thick, the signal lamps were not absolutely obscured between Burgess Hill and Wivelsfield, any more than, according to the evidence of the driver of the Pullman train, they had been on the line between Brighton and Burgess Hill.

The absence of the fogman at Burgess Hill up distant signal had no bearing on the case under consideration, as this signal was off, but had there been a man at Keymer Junction up distant signal it is almost certain that the collision would not have happened, for the driver would have been warned there by running over fog-signals, and it may be assumed that he would have reduced speed and have been prepared to stop at Keymer Junction up home signal. The fact that no fog-signalman was at this post seems to have been partly due to a chapter of accidents, but also to inadequate arrangements for calling out the fog-signalmen under all circumstances and to a want of appreciation, on the part of those responsible, of the great risk of leaving the distant signal unguarded.

As Keymer Junction is considered a part of Wivelsfield Station, the station-master at that station was clearly, under Rules 61 and 68, technically responsible for seeing that fog-signalmen were stationed at all the signals requiring them worked from Keymer Junction cabin, as well as at those worked from Wivelsfield cabin, but, as the man who should act as fog-signalman at Keymer Junction up distant signal belongs to the Burgess Hill platelayers' gang, it has always been the practice for the Keymer Junction signalman to wire to Burgess Hill when he wants the services of a fog-signalman, leaving the Wivelsfield signalman to get out the fog-signalman required at his signals, and furnished by the Wivelsfield gang. The Wivelsfield men were duly posted at Wivelsfield up starting signal, Wivelsfield down home signal, Keymer Junction down distant signal, and Folly Hill up distant signal, on the requisition of the signalman at Wivelsfield to the station-master at 3.30 p.m.; but, although, at about 3.45 p.m., the Keymer Junction signalman telegraphed to Burgess Hill to ask for a fog-signalman, and asked again three times between 3.45 p.m. and 5.45 p.m., no man was posted, and it was not till after 6 p.m. that the Keymer Junction signalman telephoned for a fogman to the station-master at Wivelsfield, who at once took steps to obtain one as speedily as possible, although, as it turned out, too late.

The fog-signalman on the Keymer branch being provided from Keymer Crossing the only man to be got out by the Keymer Junction signalman is the man at his up distant signal. The regular man for the post, belonging to the Burgess Hill gang, is named Alfred Lewry, and his name is, according to rule, posted up in Keymer Junction signal cabin, but he had been ill for some weeks. Since his illness his place as platelayer in the Burgess Hill gang had been taken by a man named Moore, who lives at Brighton, and who upon an ordinary day would have been sent to act as fog-signalman at Lewry's post, but,

the 23rd December being a Saturday, the platelayers had left work at 1 p.m., and Moore had gone home to Brighton.

The arrangement which had been made, and acted upon, in regard to this man was that if a fog came on during the hours of work he was to take up fogging duties, but that if he had gone home he need not return, and that another man would be obtained. Until some other man could be obtained it was the duty of the ganger Edward Tullett to take the place, but the arrangements for providing this other fog-signalman seem to have been very defective.

Ganger Tullett had also been ill and off work for some time, but he had taken up his duties again about a fortnight before the 23rd December, and had been at work up to 1 p.m. that day: He was unfortunately again taken ill at 3 p.m. and was evidently not fit to come out again.

At 4 p.m. the station-master at Burgess Hill received a message from the signalman through head-porter King, to say that the fog-signalmen were wanted for the Burgess Hill signals, and also for the Keymer Junction up distant signal, and he sent a platelayer to call out two of the men, another man, Charles Cox, having been telegraphed for to Hassocks, where he lives.

After considerable difficulty the regular man for Burgess Hill down distant signal, by name Stephen Gravett, was despatched to his post, and was there when the Pullman train passed, but Charles Cox, whose post is Burgess Hill up distant signal, was not obtained until much later.

At 4.45 p.m. the station-master at Burgess Hill went to Keymer Junction up distant signal, and found that there was no fog-signalman there, and it was not till then that any serious attempt appears to have been made to get a man for that post, although it was well known that the regular man Lewry was ill.

A porter was sent off to ganger Tullett to tell him to come out to fog at once, but he returned between 5.30 p.m. and 6 p.m. with a message from Tullett to say that he was ill and was going to bed, and that the station-master had better see if he could get ganger Packham, the ganger of the Wivelsfield length. The station-master admits that the porter said something about Packham or seeing Packham, but says that he did not understand that Tullett had said "Better send for Packham." Consequently he contented himself with going to the signal cabin to ask whether Charles Cox had come from Hassocks, and while he was there the Pullman train passed, and soon after he heard that the collision had taken place. Such being the facts of the case the causes of the accident are quite apparent.

No doubt the primary cause was the adverse conditions of the weather, for the late departure of the Pullman train from Brighton, and its consequent precedence by the boat train, was due in some degree to the fog, which also was certainly the cause of the driver of the Pullman train missing the signals at which he should have reduced his speed, and come to a stand.

In spite of the fog, however, the accident would not have occurred if the rules of the Company had not been disregarded by the driver of the Pullman train, Alfred Westlake. He knew perfectly well where he was, and under Rules 47, 51, and 61A, it was his duty to have treated the Keymer Junction up distant signal, which he did not see, as a danger signal, to have reduced the speed of his train, and to have stopped at Keymer Junction up home signal, or at the place where he knew it should be, if he were unable to see it.

He has the reputation of being one of the best drivers on the line, with an excellent character, and he gave his evidence in a very straightforward manner, stating that he was misled by not finding any fog signals on the line; but to accept that plea as a justification for the breach of clear and distinct rules, and to admit that a driver not finding fog-signalmen out is in the least degree entitled to assume that signals which he does not see are off for him, would be a most mischievous conclusion, and would constitute a danger to the travelling public. It is I fear only too clear that, finding all the signals up to Burgess Hill off for him, he was too ready to take it for granted that he would, as usual, precede the boat train, and have a clear run to London, and therefore was not sufficiently careful to make sure of the condition of the Keymer Junction signals. He had at the time been on duty for a little over seven-and-a-half hours, and to a small extent his responsibility for the accident must be shared by his fireman. At the same time it must be observed that the absence of the fog-signalmen was a contributory cause of the accident, and speaks badly for the arrangements for fog-signalling at this place.

Doubtless the illness of the regular fog-signalman, the sudden indisposition of

ganger Tullett, and the fact that the platelayers had all left their work before the fog came on, made it somewhat difficult to get out the fog-signalmen, but, when it is seen that for over two hours two important signals were left without fog-signalmen, it is impossible to avoid the conclusion that sufficient energy was not shown by some of those responsible.

So far as the Wivelsfield station-master is concerned I think that he can hardly be found fault with. He was a relief station-master, taking the place of the regular station-master who was ill, had only been at Wivelsfield for five days, and, although according to the strict reading of the rule he was responsible for having a fog-signalman at the Keymer Junction up distant signal, he only followed what had been the recognised practice in leaving the man to be found at Burgess Hill, while he had taken care to have the men posted at the Wivelsfield signals. The signalman at Keymer Junction signal cabin, when he was unable to get the fog-signalmen from Burgess Hill, ought most certainly to have applied at once to his own station-master, instead of letting matters drift from 3.30 p.m. till 6 p.m., at which time he first made his application to Wivelsfield. Had he done so there can be little doubt that ganger Packham would have arranged for the duty being done, and also that if he had asked for assistance he might have been able to comply with Rule 68A and have had detonators placed upon the line opposite to his signal cabin, when his signals were at danger, before the fog-signalmen had arrived. This he says he was unable to do himself, and looking at the great height of his signal cabin, and the age of the man, there is a good deal of force in his contention.

Again if the Burgess Hill station-master had been sufficiently alive to the risk of leaving Keymer Junction up distant signal without a fog-signalman he would have taken more pains to procure one. Very likely he was as he says, short-handed, one of his men being away, and as usual at that season, there was a great deal of work to be done, but still it was certainly not impossible for him to have sent one of his five porters temporarily to take up the duty of fogging, whereas he did not send for ganger Tullett until nearly an hour had elapsed since the fog-signalman was applied for, and he did not even take the trouble of telegraphing to Wivelsfield when the message came back from ganger Tullett to say that he was ill, and that ganger Packham had better be sent for.

Ganger Tullett also, knowing that there was no one but himself to take Lewry's place, ought, if he had had a proper sense of his duty, to have taken steps, when the fog came on and he felt himself too ill to go out at 3.30 p.m., to have let the station-master know, so that someone else might have been got to take his place, and I cannot think that, if he had taken any trouble, he would have been unable to find a messenger.

Briefly therefore the accident may be attributed principally to the disregard of rules by driver Alfred Westlake and his fireman, in running past signals at danger, but also in some degree to the state of the weather, to the unsatisfactory arrangements for fog-signalmen, and to the apathy of the Burgess Hill station-master, ganger Tullett, and signalman Richard Edwards.

The principal lessons to be learnt from it by railway companies generally are:—

First. The necessity for the strictest possible discipline, in order to ensure that, under all circumstances, rules and regulations are attended to, and that all the servants of the company have an adequate knowledge of them.

Secondly. The want of some better system of fog-signalmen, so that, even if by some mechanical or electrical appliance, the employment of fog-signalmen cannot be altogether dispensed with, means may be provided by which a signalman can protect the line at his signals during the interval which must elapse between the time that fog-signalmen are called out, and the time that they arrive at their posts, especially in the case of sudden fogs.

There have been very numerous inventions to carry out these objects, and I cannot but think that, if the questions were energetically taken up, some one at least of these inventions might be found suitable for adoption. As, however, it is most desirable, if not essential, that any appliance adopted should be of universal application, the concerted action of the Associated Railway Companies is necessary.

The Company more immediately concerned, the London, Brighton, and South-Coast Company, would be well advised if they were to lose no time in adopting the more modern code of rules drawn up by the Associated Companies, for, while the wording of several of the new rules for working during fogs is clearer and more explicit than that of those now in force on this railway, it may be taken as almost certain that the provisions of one of these rules, as to block-working, would have averted this accident, for they enjoin that during a fog, until the fog-signalmen are at their posts, a signalman must not give "Line clear" and allow a second train to approach until he has received the "Train out of section" signal

from the block-signal cabin in advance, that is to say that in this instance the Pullman train would not have been allowed to pass Burgess Hill until the Keymer Junction signalman had received the "Train out of section" signal from Wivelsfield, which would not have been given so long as the boat train was standing in the Wivelsfield section.

It is also desirable that, if possible, better arrangements should be made so that fog-signalmen should be easier to get at when their services are required, and so that there can be no possible misunderstanding as to who should detail the fog-signalman on an emergency, and who should take the place of a man who is taken ill, or is absent from any other cause.

In conclusion, I would recommend the Company to make some alteration in their signalling arrangements at Wivelsfield. I cannot think it satisfactory that the section between Keymer Junction and Wivelsfield should be considered as a separate block section, and yet should have no separate up signals. The station might be treated as an intermediate station in a section between two block signal cabins, having only signals worked from the platform for the protection of trains standing thereat, or if a block signal cabin be necessary there should be an up home signal worked from Wivelsfield, with an up distant signal on the Keymer Junction up home signal post. The signal cabin would probably be better placed at the north end of the station, and the existing main line cross-over road, now worked from it, might be moved forward, or back to be worked from the Junction cabin.

Another matter worth the attention of the Company is in reference to their high signals. It is the practice upon some lines to provide duplicate low arms upon all signal posts over a certain height, in one case fixed at 45 feet. It is possible that, although the driver of the Pullman train missed seeing the Keymer Junction up distant signal lamp, only 14 feet above rail level, he might have caught sight of a low signal lamp on the Keymer Junction up home signal if there had been one.

The Assistant Secretary,
Railway Department, Board of Trade.

I have, &c.,
F. A. MARINDIN,
Col

APPENDIX I.

LIST OF KILLED AND INJURED.

KILLED.

George Paris, Messrs. Chipperfield and Butler, Brighton, killed on the spot.
Bellande Adamiro, an Italian, killed on the spot.
William Davis, guard of the boat train, killed on the spot.
Alfred William Giles, 1, Glenharm Road, Lower Clapton, died on arrival at Guy's Hospital.
William Drapier, 1, Wadding Street, Walworth, died in Guy's Hospital on the 24th December.
Ferdinand Henri Arts, 54, Tunstall Road, Liverpool, died in Guy's Hospital on the 24th December.

INJURED.

In boat train.

Mary L. Smith, of Paris.
Mrs. Blackshaw, 314, Lordship Lane, Dulwich, S.E.
F. K. Nisbet, 314, Lordship Lane, Dulwich, S.E.

C. E. Sullivan, 84, Argyle Road, Southampton.
Lieutenant Pierre Bernard, of Asnières, Seine.
Mr. Silvio, Cathcart Road, Govan Hill, Glasgow.
Mrs. Silvio, Cathcart Road, Govan Hill, Glasgow.
J. Griffiths, 67, Spencer Street, Everton Road, Liverpool.
M. Schubert, 9, Stretton Road, East Croydon.
Massalio Petteti, Manor Yard, High Street, Battersea.

In Brighton train.

M. C. Richards, 19, Vernon Terrace, Brighton.
J. B. Burdge, Clifton Villa, Bridge Road, Hornsey.
Mrs. Welfare, 7, West Hill Road, Brighton.
J. Giles, 66, North Street, Brighton.
F. Woodruff, 76, Western Road, Brighton.
R. C. Wells, 83, Forest Road, Nottingham.
P. G. Capon, 3, Oxford Road, Ealing.
G. Cross.—Head guard.
H. Scott.—Under guard.
W. J. Franklin.—Fireman.

APPENDIX II.

FORMATION OF, AND DAMAGE TO, THE 5.35 P.M. NEWHAVEN TO LONDON BOAT TRAIN,
23RD DECEMBER, 1899.

No.	Description.	Length over buffers.	Weight, loaded.	Particulars of damage.	Equivalent to vehicles.
		Ft. Ins.	Tons Cwt.	<i>Victoria portion.</i>	
193	Passenger tender engine ...	61 10	38 14 }	No damage.	
	Tender ...	—	27 0 }		
637	First-class car, six wheels ...	31 3	11 13	Headstock damaged...	1
118	Brake-van, four wheels ...	28 11	11 0	Headstock damaged...	1
481	Bogie composite ...	60 11	21 15	No damage ...	2
266	Bogie composite ...	60 11	21 15	No damage ...	2
"Queen"	Pullman car ...	62 0	25 16	No damage ...	2
435	Bogie composite ...	60 11	21 15	No damage ...	2
54	Bogie composite ...	60 11	21 15	No damage ...	2
405	Brake-van, six wheels ...	32 11	11 12	No damage ...	1
				<i>London Bridge portion.</i>	
169	Bogie lavatory composite ...	50 11	21 15	Three compartments destroyed; lavatory and fittings damaged.	2
59	Bogie composite ...	60 11	21 15	Entirely destroyed ...	2
458	Second-class, four wheels ...	28 11	10 8	Entirely destroyed ...	1
164	Brake-van, six wheels ...	32 11	11 12	Entirely destroyed ...	1
	Totals ...	574 3	278 5		19
	Weight on wheels without brakes.	—	22 3		
	Weight on wheels with brakes.	—	256 2		

FORMATION OF, AND DAMAGE TO, THE 5.45 P.M. BRIGHTON TO VICTORIA TRAIN, ON
23RD DECEMBER, 1899.

No.	Description.	Length over buffers.	Weight, loaded.	Particulars of damage.	Equivalent to vehicles.
206	Passenger bogie, tender engine	Ft. Ins.	Tons Cwt.		
	Tender ...	53 7	43 6 }	Buffer beams bent; buffers damaged; bogie axles and crank axle bent; guard irons twisted; brake work broken; draw gear broken, and pins bent; side angle iron bent, and splashers bent and twisted.	
418	Brake-van, six wheels ..	32 11	11 12	Totally destroyed ...	1
430	Bogie composite ...	60 11	21 15	Three compartments entirely destroyed; bogie truck twisted, and one end much damaged; headstock damaged; win- dows and side lights broken; step boards broken, and irons bent.	2
591	First-class saloon, six wheels	32 11	11 15	Buffer castings broken; buffers bent; frames and axle guards strained.	1
542	First-class saloon, six wheels	32 11	11 15	Totally destroyed ...	1
"Maud"	Pullman car ...	60 0	22 13	End portion, including buffet, and part of drawing room destroyed; main ties of frames fractured and damaged.	2
"Arundel"	Pullman car ...	65 8	29 13	Not damaged...	2
61	Bogie composite ...	60 11	21 15	Not damaged...	2
578	Invalid carriage, six wheels	32 11	12 10	Not damaged...	1
268	Bogie composite ...	60 11	21 15	Not damaged...	2
166	Brake-van, six wheels ...	32 11	11 12	Not damaged...	1
	Totals ...	496 7	245 14	Vehicles ...	15
	Weight on wheels without brakes.	—	30 2		
	Weight on wheels with brakes.	—	215 12		

APPENDIX III.

Extracts from the Rules and Regulations of the Company, dated January 1st, 1886.

DISTANT SIGNALS.

Observance
of Distant
Signals.

47. When an engine-driver finds a distant signal at "Danger," he must immediately reduce the speed of his train, so as to be able, in case of need, to stop at such signal; but if he sees that the way in front of him is clear, he must proceed slowly and cautiously within the distant signal, having such control of his train as to be able to stop it short of any obstruction that may exist between such signal and the home signal, and must bring his train to a stand as near the home signal as the circumstances of the case will allow.

SIGNALS NOT SHOWN, OR IMPERFECTLY SHOWN.

Signals not
shown, or
imperfectly
shown.

51. The absence of a signal at a place where a signal is ordinarily shown, or a signal imperfectly exhibited, or the exhibition of a white light at a place where a red, or a green, ought to be seen, must be considered a Danger Signal, and treated accordingly.

SIGNALLING IN FOGGY WEATHER, OR DURING SNOW-STORMS.

Station
Masters re-
sponsible for
employing
Fog-signal
men when-
ever neces-
sary.

Drivers to
reduce speed
in Fogs, &c.

61. During foggy weather or snow-storms, it is the duty of the station-master to take care that fog-signalmen are employed, when necessary, at all the places where their services are required, and, where platelayers are employed for the purpose, to arrange beforehand with the inspector of permanent-way for the district the platelayers who are to act as fog-signalmen at the various posts.

61a. Drivers must run with extra caution and at reduced speed during Foggy Weather or Snow-storms, approaching all Junctions, Stations, and places where fixed Signals are known to exist with extreme care, keeping a good look-out for Hand Signals, and if the fixed Signals are not clearly seen by the Driver, the Train must be completely stopped before entering into any Station or passing any Junction or other place where Signals are known to be fixed.

Should a Driver not know his whereabouts through the density of a Fog, he should at once stop, and if he then cannot satisfy himself at what part of the Line he is at, he must proceed with his Train at a walking pace, until finding a Signal or other indication to satisfy himself as to what part of the Line he is at.

Fog or snow
storm in
daytime.

62. In the event of a fog or snow-storm occurring during the day, between 6 a.m. and 8 p.m., the men appointed to act as fog-signalmen must at once report themselves to the station-master, and take his instructions; those who have to do duty at junctions or intermediate signal-boxes away from a station, must report themselves to the signalmen on duty at the respective boxes.

Employment
of Fog-signal-
men in the
night.

63. When it is necessary to employ Fog-signalmen during the night, between 8 p.m. and 6 a.m., the station-master must arrange to have the men called, and sent to their respective posts. If the fog-signalmen become aware, from their own observation or from information given to them, that their services are required during the night, or at any other time when off duty, they must at once report themselves to the station-master, or to the signalman at any junction or intermediate signal-box away from a station, without waiting to be called; but this will not relieve the station-master from the responsibility of sending for the fog-signalmen when necessary.

Addresses
and Posts of
Fog-signal-
men.

64. A list of the names and addresses of the fog-signalmen, showing the post to which each man is appointed, must be kept exhibited in a conspicuous position in the station-master's office, signalman's box, or other convenient place.

Station
Master to
satisfy him-
self that Fog-
signalmen are
at their posts.

68. The station-master must in all cases satisfy himself that the fog-signalmen have duly proceeded to their respective posts, when it is necessary for them to do so; and, where the fog-signalmen are numerous, a competent man must be appointed to visit them at their posts, and see that they are properly performing their duties, and are supplied with the necessary signals, furnishing them with a further supply of detonators, if required.

Supply of
Fog Signals.

Fog-signal-
ling at inter-
mediate
signal boxes.

68A. At intermediate signal-boxes, where no fog-signalmen are appointed to repeat fixed signals, or in cases where such men are appointed but have not arrived, the signalman must, if practicable, when his danger signals are exhibited, place opposite his signal-box two detonators on each line for which the danger signal is intended to apply, two yards apart to give two distinct and separate reports.