Water-tanks for the engines should be provided at shorter intervals. The engine-driver of the goods train and the under-guard, should not have detached the engine on the incline, before the head guard was made aware of what they wished to do, and proper arrangements had been made for securing the train by putting on the breaks.

The engine-driver of the goods train stated that the goods train had run back on distance beyond where he had left it, and that this, as well as the omission of the guards to protect the train with proper signals, were the cause of his running into it.

The neglect of the guards, and the goods train not having been protected with proper signals, was no doubt the real cause of the accident; but I do not think that the train had run back more than three or four wagon lengths, and I cannot acquit the driver of the goods engine of neglect in approaching his train when he returned.

The head guard did not obey the rules furnished for his guidance, in placing fog signals at the rear of his train, and in seeing that the under-guard did his duty. This man’s excuse is, that he knew that there was no engine at Clonskeag that could run up in rear of his train, and that he thought that the under-guard knew what it was necessary to do.

The under-guard, whose neglect was the real cause of the accident, and whose statement was decidedly incorrect, excused himself by saying that he had never put down any fog signals before; but this man’s statement about going forward 500 yards beyond the break-hand lamp, shows that he knew that protection was required for the train at 500 yards from the place where it stood.

I do not believe that this man ever went forward beyond the 120 yards where he put down the fog signals, and he certainly had not taken sufficient fog signals with him to enable him to follow the company’s rules. Both guards evinced proper precaution for their own safety, by awaiting the return of the engine outside their vans, instead of getting inside, when their train was so badly protected.

The Secretary,
(Re: Railway Department),
Board of Trade.

I have, etc.,
F. H. KEEN,
Lieut.-Col. R.E.
Board of Trade.

Copies of the above report were sent to the company.

WEST LONDON EXTENSION RAILWAY.

Board of Trade,
(Re: Railway Department),
Whitehall, 12th April 1872.

In compliance with the instructions contained in your minute of the 26th March last, I have the honour to report, for the information of the Board of Trade, the result of my inquiry into the circumstances which attended the collision that occurred on the 9th of March at the Lillie Bridge sidings on the West London Extension Railway.

In this case, an engine and break-van of the London and North-Western Company came into collision in approaching the Lillie Bridge signal-cabin with a goods Western goods train which was engaged in shunting into a siding on the west of the main line.

The Lillie Bridge signal-cabin is about 550 yards on the north of the West Brompton station, at the West London Extension station, and there are sidings on the east and on the west of the line. This cabin is provided with levers for working the points and signals, interlocked with another cabin on the Brompton station, similarly provided with levers for working the points and signals, and with telegraph instruments for working the traffic on the block-system.

The telegraph-instruments in these two cabins communicate with one another; the space between them forms a block-telegraph length; and the object of so providing these cabins with block-telegraph apparatus is, or ought to be, to prevent any two separate engines or trains from being at the same time upon the block-telegraph length between them. The two cabins are about 550 yards apart. There is a semaphore-post on the west of the line near the West Brompton signal-cabin, the arm of which is worked from that cabin, and is also controlled by a slotting arrangement from the Lillie Bridge cabin, so that the West Brompton signalman cannot lower the semaphore arm which applies to a train passing towards Lillie Bridge until the Lillie Bridge signalman has also pulled off his lever applying to that arm. Immediately to the north of the West Brompton station, there is another semaphore-post, with an arm upon it which is similarly worked by the West Brompton signalman and controlled by the Lillie Bridge signalman. These two signals will be specially referred to in the present report. The semaphore-arm near the West Brompton signal-cabin is well seen from a considerable distance; but the advance-signal referred to as being immediately to the north of the West Brompton station, which is intended to be used as a starting-signal for trains from the passenger platform, is not visible much beyond the down platform of the station.

On the morning in question, an engine and break-
van, which had taken a goods train to Clapham junction, left that junction on its return to Lillie Bridge at 6.40 a.m. There were the driver and fireman on the engine, and a guard and breakman in the van.

The engine-driver found all the signals clear, and ran forward in due course to West Brompton, approaching the signal station at 10 or 12 miles an hour, a little before seven o'clock. He also saw the semaphore-signal south of the West Brompton station lowered for him to pass; but in passing the platform and approaching the starting-signal on the north side of the station he found that signal at "danger." He did not, however, consider that signal to apply to his engine. He thought it was intended, he says, for passenger trains only; and he therefore proceeded past it at about the same speed, 10 or 12 miles an hour, towards the Lillie Bridge cabin. He intended to stop opposite the Lillie Bridge signal and ask the goods foreman whether it would be his duty to take a train forward to Willesden. He represented that there was a thick fog round the cabin at Lillie Bridge, that he only saw the engine of a Great Western train which was in his train 30 yards before he passed it, and that the engine was the first indication of danger which he received, or to which he paid any attention. He had just time to pull over his reversing-lover and open his regulator, when his engine came into collision with the Great Western engine, which was running towards a siding in the opposite direction. The collision occurred 40 or 50 yards on the south of the Lillie Bridge cabin, at the foaling point between the siding and the main line. The buffer-plank of the London and North-western engine was broken, the cylinder-cover was fractured, and a good deal of damage was done to the motions of the engine. The two men who were riding in the break-van behind this engine saw nothing of the signals, or of the impending collision, until they were approaching the Lillie Bridge cabin. The guard then looked out of his van for the purpose of communicating with the goods foreman, and saw the Great Western engine within a short distance of him. The guard remained in the break-van, and was knocked down by the collision, but the breakman jumped out of his van on the right-hand side. The former represents himself to have been a good deal shaken, whilst the latter escaped unhurt.

The Great Western goods train which was thus shunted into a siding at Lillie Bridge when the London and North-western engine came into collision with it, had arrived at Lillie Bridge from the junction with the Great Western and the West London Railway, near Wormwood Scrubs, about 6.30 a.m.; and had been standing in a siding there for about 15 minutes, when the engine-driver and the guard were permitted to take a certain waggons from the siding on the east, and to cross over both main lines to the sidings on the west of those lines. The engine-driver attacked nine waggons to his engine, drew them on to the up main line, crossed to the down main line, and was in the act of proceeding into the west sidings from the down main line, when his engine, soon after passing the points, was run into by the London and North-western engine as above described.

He was travelling at a speed of six or seven miles an hour. He is not certain whether his engine had been separated from the truck before the collision occurred, but he believes that it had just been uncoupled from the trucks, with a view to the engine running into one siding, and the trucks being turned into another siding on the west of it. The engine-driver was looking back at the trucks, and for signals from his guard, and his head was therefore turned in the opposite direction to that from which the London and North-western approached. He did not see that engine until just before the collision occurred. He had no time to jump off his engine, and was only able to pull over his reversing-lover and blow his whistle. The fireman also remained on the engine. They were neither of them injured. The under guard of this train was standing on the ground, ready to hold the first siding points for the engine and trucks to pass through them. The head guard of this train was knocking on the buffers between the tender and the first of the trucks, for the purpose of uncoupling the leading truck from the tender, and which was unluckily caught by the buffer of the tender. His hand was forced through the capping at the end of the truck, which was loaded with coal. He was taken to St. George's Hospital, where his leg was amputated, but the shock was too severe for him, and he died at four o'clock the same day.

The signalman who was on duty at the Lillie Bridge cabin on the morning in question was an experienced man, and had been at the same spot for two or three years. He came on duty at six o'clock on the preceding evening, and he ought to have been relieved at six o'clock, or a little later, on that morning; but the relieving signalman was prevented from missing his trains and did not reach the cabin until a little before seven o'clock. He saw the Great Western goods train arrive from the West London Railway half past six o'clock, or a little later, and came to stand in the east sidings, nearly opposite his cabin. Hearing from the guard of this Great Western train that he wanted to change for coals, he saw trucks across the line into the west sidings, and gave the permission to do so, and held the points over for the train to cross. Whilst doing so, and when the train was in the act of crossing, he received notice on his telegraph-instrument of a London and North-western goods train from Clapham Junction, and he says that in accordance with the usual practice, an engine and van only would approach him from that direction, within a few minutes. On receiving this notice he accepted the London and North-western goods train from West Brompton, and printed his telegraph-needle, which had previously been at "line open," over to "line blocked," for that engine and van, to indicate that the line was blocked by them, and that nothing should be allowed to follow until they had passed. He next waved his head-light towards the driver and guard of the Great Western train, to instruct them to run forward into the west sidings with their engine and trucks; and for several minutes, in obedience to that instruction, for the sidings, he pulled over his lever applying to the semaphore-signal south of the West Brompton station, which allowed the West Brompton signalman to lower that signal and so to permit the London and North-western engine to pass the West Brompton cabin in the Lillie Bridge cabin. He kept, however, the starting-signal north of the West Brompton station at danger, and expected that the London and North-western engine and van would, after passing the West Brompton cabin, draw up in the station, and wait for the starting-signal to be lowered before proceeding towards the Lillie Bridge junction-cabin. This man, in fact, allowed the London and North-western engine to come forward by means of his telegraph-instrument, and the West Brompton home-signal to be lowered for it to run forward, and depended upon the starting-signal only for stopping that engine, and for that reason the Great Western goods train should have completed its shunting opposite its cabin. Unfortunately, the starting-signal was not well seen towards the southward; the engine-driver did not attach the same meaning to it as the signalman; and it proved to be useless in protecting the shunting train. In considering the causes of this collision there are two or three points to be referred to. In the first place, this portion of railway was supposed to be worked on a block-telegraph system. In the second place, the Lillie Bridge signalman was specially provided with a mechanical means of preventing the West Brompton cabin from giving the starting-signal when it was not right to allow an engine of train to pass on to the telegraph length of 525 yards between West Brompton and Lillie Bridge. And in the third place, the only signal which was really displayed to the London and North-western engine-driver was believed by him not to apply to his engine.

As regards the block-system of telegraph-working the instructions which ought to be obeyed when an
The next point to be referred to is that of the signalman at Lillie Bridge having pulled over his lever so as to unlock the signal at the Brompton cabin, which was expected to allow the London and North-western engine to pass towards Lillie Bridge. The Lillie Bridge signalman admits that he pulled over this lever, but attempts to justify himself for having done it by saying that he expected an engine and break-down carriages, according to custom, and not a goods train; and if he be considered responsible, he kept the starting-signal north of West Brompton station at "danger," that this signal would afford sufficient warning to the London and North-western engine-driver, and that the engine-driver would be able to stop his train short of the obstruction at Lillie Bridge.

I do not so much blame this man for not carrying out the printed rule No. 150, because it has been the universal practice on the line to ignore that rule; but he was not justified in pulling over his lever so as to unlock the West Brompton semaphore-arm—and in trusting to the starting-signal only for stopping the London and North-western engine.

As regards the conduct of the engine-driver of the London and North-western engine, that engine-driver had a right to expect, if there was any obstruction at the Lillie Bridge signal-cabin, to have found the semaphore-arm at the West Brompton signal-cabin at "danger," and if he was aware that he was, he was allowed, by the lowering of that arm, to run through the West Brompton station without stopping, the starting-signal north of the station, which could only be seen by him for a short distance, was not a good substance for the signal which ought to have been visible to him. At the same time, considering that he had only his engine and a van behind him, he would have had plenty of time to bring his engine to a stand after seeing the starting-signal north of the West Brompton station; and he had no right to assume, as he states, that he did, that the starting-signal was intended to apply to passenger trains only. There had been some little alteration six days before the accident, in converting what had been the distant-signal from Lillie Bridge only into a main-signal, in connexion with a new block telegraph-signal-cabin south of the West Brompton station, whilst making the signal to serve as a starting-signal from Lillie Bridge, giving the Lillie Bridge signalman, as already described, the power of keeping it at danger by means of a slotting arrangement. The engine-driver states that the day after this new arrangement came into force he incurred of a signalman as he passed the new signal-cabin south of the West Brompton station whether, when the semaphore-arm opposite to that cabin was lowered, he was to obey the starting-signal, and that he was informed by that signalman that it was not necessary for him to obey that signal; but the signalman, when questioned, denies any recollection of such a conversation having occurred.

The regulations which were published by the Superintendent of the West London Extension and West London Railways when these alterations were made, and it will be observed that there is nothing in these regulations to justify the interpretation placed upon the new arrangements by the engine-driver. It is true that a careful man he certainly would not, after passing the starting-signal at "danger," have come into collision, as he did, with the Great Western engine nearly 300 yards beyond it.

In any case, I now recommend that the printed regulations of the West London Extension Railway be made future carried out in practice. It has been the custom on this occasion was engaged in the dangerous occupation of uncoiling a waggon from a tender whilst they were in motion, for the purpose of fly-shunting. This is a system which is forbidden on many railways, but it is not practised on the railways on which it is forbidden as well as on the railways on which it is permitted. Where the
traffic is constant and heavy, it, no doubt, affords a
means of getting through the work to be done in a
much shorter time than would otherwise be occupied.
At the same time there is much risk attending it to
the men employed. It does not appear, however, that
in this case the guard, who lost his life, would have
received any injury if it had not been for the collision
superseded to the practice of fly shunting; and I have
already shown how, if the block-telegraph regulations
had been properly carried out, the collision would have
been prevented; and even although the block-telegraph
regulations were neglected, the collision would further
have been prevented if the signalman at the Lillie
Bridge cabin had only allowed his lever locking the
signal south of the West Brompton station to have
remained in its normal position, instead of pulling it
over to allow the West Brompton signalman to lower
the signal opposite his cabin for the London and
North-western train to pass while the shunting
operations were being carried on at Lillie Bridge.

The evidence as to the state of the atmosphere
when the collision occurred is very conflicting. It is
admitted that fog was driving about, and that the
atmosphere was not clear; but the servants of the
company with the Great Western train state, some of
them, that they could see the London and North-
western engine before it left the West Brompton
station, or from a distance of two or three hundred
yards; while the engine-driver of that engine states
that he could not see the Great Western engine until
he was within 30 yards of it.

The Secretary,
(Railway Department),
Board of Trade.

WEST LONDON EXTENSION AND WEST LONDON RAILWAYS.

NOTICE TO ENGINE DRIVERS, GUARDS, SIGNALMEN,
AND ALL CONCERNED, INCLUDING SERVANTS OF
THE LONDON AND NORTH-WESTERN, GREAT
WESTERN, SOUTH-WESTERN, AND BRIGHTON
COMPANIES.

OPENING OF A NEW INTERMEDIATE SIGNALING
STATION AT WEST BROMPTON, AND ALTERATION
OF SIGNALS.

WEST BROMPTON DOWN DISTANT SIGNAL.

This signal is erected on the down side of the
line, at about 150 yards north of the Stamford
Bridge, and is shown thus as seen from a train
proceeding from Chelsea towards Kensington.

West Brompton Main Signals.

The signal box is erected on a new intermediate
station south of the line, about 10 yards north of
the station platform. The signals stand on the down
side of the line, immediately opposite to the box,
and are shown thus, as seen from a train proceed-
ing from Chelsea towards Kensington.

When these signals are
at "Danger," no train or
engine is allowed to pass
until the semaphore arm
is lowered to "Caution," or
the green light shown;
but these down passenger
trains which are timed to
stop at West Brompton station, shall, at the request
of the signalman, pass to the station platform on
receipt of the necessary signal by hand, lamp, or fog
and remain there until the "Starting Signal" is
lowered.

EARL'S COURT JUNCTION.

A Down Distant Signal has been erected on the
down side of the line, about 180 yards north of Lillie
Bridge signal box, and is shown thus as seen from
a train proceeding to Kensington. This signal
shows the same as the Main Earl's Court Junc-
tion signal. If this exhibits a "Danger" signal
the engine driver must immediately reduce the
speed of his train or en-
gine as to come to a
"Stop," if he sees the
way is clear, he must pro-
ceed slowly and cautiously
to the "Main Junction Signal," where the train or
engine must be brought to a "Stand" clear of the
Metropolitan District line, and remain there until
the signal is given for it to proceed.

These alterations are to be brought into use on
Monday the 4th March.

S. Grew.
Superintendent's Office,
Kensington, February 26th, 1872.

Copies of the above report were sent to the Great Western, the London and North-western, and the
West London Extension Railway Companies.
WEST LONDON EXTENSION RAILWAY

Plan of

WEST BROMPTON AND LILLIE BRIDGE SIDINGS.

Scale 100 Feet to 1/2 Inch.