

BARRY RAILWAY.

Ministry of Transport,
Public Safety and General Purposes Department,
7, Whitehall Gardens,
S.W. 1.

6th September, 1920.

SIR,

I have the honour to report for the information of the Minister of Transport, in accordance with the Order of the 5th August, the result of my Inquiry into the circumstances of a collision, which occurred at about 10.53 p.m. on the 4th August, at Barry station, on the Barry Railway.

As the 10.20 p.m. down passenger train from Cardiff was approaching Barry station, it collided with a shunting engine and cattle truck attached, which were standing foul of the down line. Fortunately only three passengers received minor injuries. Both engines were damaged. The first two vehicles of the passenger train were telescoped and the third vehicle slightly damaged. The shunting engine and cattle truck kept the road but the passenger engine was derailed and was buried to a considerable depth in the ballast on the near side of the down line.

The shunting tank engine was No. 27, 0-6-2 type, weight in working order 55 tons. The passenger train was drawn by tank engine No. 95, 2-4-2 type, bunker leading, weight in working order 59½ tons, and consisted of ten 6-wheeled coaches. The engine was fitted with the vacuum brake, working blocks on the coupled wheels, and on all wheels of each vehicle except the centre pairs. The weight of the train excluding that of the engine was 130 tons.

It was a very bad dark night, raining and blowing hard.

Description.

The general direction of the main line through the station, is east and west, the down road being to the south of the up road. Between the down inner and outer home signals the line commences to curve southwards towards Barry dock station. At the west end, the branch to Barry Island also curves from the junction southwards. The gradient through the station and for some distance on either side is level.

The collision occurred at about the intersection of the scissors crossover roads (No. 51 trailing and No. 69 facing crossovers) between the up and down line at the east end of the station.

The southern platform is an island serving, on the north side, the down line, and on the south side, the up and down Barry Island branch line traffic on what is known as the Island bay road. The east end of this platform is some 160 yards west of the point of collision. The Island bay road junctions with the down main line, by means of a facing connection (No. 46) located immediately to the west of No. 51 trailing points in that line. This connection provides access to other lines among which are the van sidings to the south of the station and the locomotive sheds.

Barry station signal-box is located at the east end of the south (island) platform and controls the scissors crossing, the above mentioned connection, and other connections of mineral lines, van sidings, the locomotive shed, etc., on the south side of the station. It also controls the trailing connection No. 73 in the up main line, situated some 25 yards east of crossover points No. 51 in that line and giving access to the up platform bay line on the north side of this platform, and eight dead end sidings to the north of this line. These sidings are called the north yard and the 9th or most northerly track from the platform serves the cattle dock.

The relevant signals, points, etc., and their distances from the centre of Barry station signal-box are approximately as follows:—

East end of down (island) platform		20 yards	West
East end of up main and bay platforms		23 "	East
Facing connection No. 46 in down main line leading to van sidings, engine shed, mineral lines and Island Bay line		110 "	"
Trailing (scissors) connection No. 51 in down line	} ..	120 "	"
Facing " " No. 69 in up line			
Centre of scissors crossover roads; viz. Point of collision		147 "	"
Points No. 72 in North Yard shunting neck and Disc No. 31 controlling movements from this siding on to the up main line		150 "	"
Trailing scissors connection No. 51 in up line	} ..	175 "	"
Facing " " No. 69 in down line			
Up line disc No. 59 for shunting movements from up to down main line over trailing (scissors) crossover No. 51		178 "	"
Four arm bracketted inner home signal		192 "	"
Trailing connection No. 73 in up line for north yard	..	202 "	"
Up line discs Nos. 81 and 82 for shunting movements into the north yard and along up line respectively	..	205 "	"
Down outer home signal		419 "	"

Conclusion.

1. The investigation of this case was made difficult by the somewhat conflicting evidence of the witnesses on the more important points.

In addition to engine No. 27 with cattle truck attached, another light engine, No. 124, is involved. This engine preceded the former in moving from the up to the down line immediately before the accident.

Traffic at this station had been considerably augmented, during the week in which the accident occurred, by the running of special trains in connection with the Eisteddfod, and though by the evening in question the number of movements was probably below the average, due to the suppression of some of the mineral trains, the service was not quite normal.

Signalman Tucker of Barry station box, had come on duty at 10.0 p.m. He was assisted by signalman Cannan in the box and to meet the special conditions of working Inspector Griffiths had been deputed, at this station, to deal with the extra movements involved, as intermediary between the signalman and the shunting staff. He was also there to convey messages from the box to the platform, yard, etc. For instance, at about 10.15 p.m. when engine No. 27 was in the van sidings and wanted water, Tucker could not understand why the driver was whistling so he asked Griffiths to find out what was required. The latter left the box and, proceeding to the engine, allowed it to move to the shed. When this engine returned to the van sidings Griffiths returned to the box.

According to signalman Tucker's evidence, at about 10.35 p.m., brakesman Stevens, who was accompanying this light engine, came to the box and told him, in the presence of Inspector Griffiths, what movements he wished to make. The instructions he had received were to proceed across the main line to pick up a cattle truck in the north yard and return. Tucker stated that he gave Stevens instructions that, after coupling up the cattle truck, the engine was not to move from the yard without his (Tucker's) permission. Inspector Griffiths corroborated this.

After the engine had been shunted on to the Island bay line, Tucker set the road, cleared the relative signals, and at about 10.40 p.m. it moved, chimney leading, over points No. 46 in the down line, via the trailing crossover (No. 51) of the scissors, to the up road. The engine stopped clear of the north yard trailing points (73) in this road, preparatory to shunting back into the north yard to pick up the cattle truck.

Tucker stated that when the engine had cleared these points, which are some 200 yards from the box, he noticed it had no tail lamp. He did not see the brakesman's hand-signal nor did he hear the engine whistle. He stated that he, therefore, turned these points "on spec." As the engine proceeded back (bunker first) into No. 9 siding of the yard, he observed it again as it passed his box, though he did not see it actually

start back from points No. 73. He apparently observed the engine come to rest against the cattle van, but his evidence and that of other witnesses conflicts as to the position of the van.

Tucker's evidence is not clear as to the possibility, at the time, of adequately observing movements in this siding. He said that normally the signalman can speak from the box with drivers in the north yard, but on this particular night there were three sets of coaches on sidings Nos. 2, 3 and 4, between him and No. 9 siding. Steam was beating down from the engine of a train standing on the up line. At the same time he stated that there was a powerful street lamp opposite the cabin near No. 9 siding which afforded a fairly good, though restricted, view of the siding.

During this movement, light engine No. 124, which had finished work, had been waiting at the east end of No. 3 siding to shunt out preparatory to passing across the main line to go to shed. At about 10.45 p.m., Tucker said that he gave permission by hand signal, for this engine to move out of the siding. It did so, and later he heard it whistle for the backing movement across the main line. As a matter of fact engine No. 27 had already moved back in front of light engine No. 124 and was waiting to follow it across the main line.

Tucker said that he "was much worried about engine No. 27 and went to the window five or six times" to see if he could see where it was. He had no proper knowledge of its location at the time as he "had no indication either in the shape of a lamp, whistle or by vision."

From his evidence it would appear that light engine No. 124 passed across the main line at about 10.48 p.m. He noticed its red tail light. He stated that after this movement he accepted the 10.20 p.m. down passenger train under the warning at 10.51 p.m. In doing so he said that, in spite of lack of information as to their position, "I was fully convinced in my own mind that the engine and truck were still standing in No. 9 siding, and when I looked out I thought I could see it and that it was carrying out the instructions I gave the brakesman." He further said that his reason for the warning acceptance was "in case I wanted to cross the engine and van of cattle" in front of the passenger train.

The engine and van had closely followed light engine No. 124, but when half way over the crossover Tucker replaced the signals and reversed the road preparatory to the arrival of the passenger train. As will be explained later, the movement, about this time of an engine and van on the down line from Barry dock, which delayed the acceptance of the passenger train, has I think an important bearing on this part of the evidence. If the sequence of movement had been as stated by Tucker, it would have meant that engine No. 27 had been standing on the crossover foul of the main line for, say, 5 or 6 minutes before the accident occurred.

The passenger train approached Barry with the distant signal at danger (it was not working at the time due to certain slotting work which was in progress) and the outer and inner home signals clear. Tucker watched the train approach and he estimated its speed at about 22 miles per hour. He saw nothing of the engine and cattle truck until the brakesman got down from the engine with a hand lamp immediately before the collision occurred.

Assistant signalman Cannan, whose duty in Barry signal box was generally to assist Tucker, could give little information. He corroborated what Tucker had said in regard to the instructions to the brakesman, and also as to Tucker's endeavours to locate engine No. 27.

Inspector Griffiths stated that he was in the box when this engine passed across the main line to the north yard and he left the box after seeing it reach points No. 73. He heard Tucker give instructions both to brakesman Stevens and to the brakesman of light engine No. 124 that they were not to leave the yard without "the tip to come out." He could not remember that Tucker made any remarks in regard to the lights of engine No. 27 and, in fact, he had not noticed either the head or tail lights of this engine.

Signalman Challice of Barry dock cabin said that at 10.51 p.m. he received the "train out of the section" signal from Barry station for the engine and van movement for which he had been holding up the passenger train. The latter, in consequence left Barry docks about 7 minutes late, and the driver had been warned under Rule 5. The normal running time between Barry dock and Barry stations is 3 minutes.

From the foregoing it would appear that:—

- (a) Engine No. 27, without tail light, was shunted into No. 9 siding in the north yard to pick up a cattle truck, with orders not to move out of the yard without instructions from the box.

- (b) Due to the very bad weather and possibly to the presence of rolling stock, signalman Tucker did not observe this engine pick up the truck and precede engine No. 124 in returning to the main line.
- (c) In moving engine No. 124 across the main line Tucker did not think that engine No. 27 would be following, and though he had not then accepted the passenger train, he set the road for this train while engine No. 27 was passing over the crossover.

2. Jenkins, the driver of engine No. 27 gave his evidence in a straightforward and connected manner. He stated that he received his orders on the pit, and left the shed with one red tail and 2 white head lights. He instructed brakesman Stevens to go to the box and advise the signalman "as to who we were and what we were going to do." After receiving the signal he proceeded across the main line and whistled two crows for the shunt back into the north yard, and found the cattle truck on No. 9 siding just clear of the crossing of No. 8 siding. While his brakesman was coupling up the truck he observed engine No. 124 standing in No. 3 siding. He realised that this engine was waiting for orders. He received no orders from the brakesman. They knew what they had to do, and when ready, the brakesman instructed him to go ahead, which he did immediately, and ran back to disc No. 31, controlling the crossover leading on to the up line. He stated that he whistled before he got to the disc, but, as it was not cleared, they stood there for 3 or 4 minutes. While there, he ascertained from the brakesman that there was no tail lamp in rear of the cattle truck, so he instructed the brakesman to take the tail lamp off the engine and place it in the rear of cattle truck, which he did.

As soon as disc No. 31 was cleared he proceeded on to the main line, and in doing so he could see engine No. 124 following him from the yard. He did not know whether the driver of this engine knew he was there, so he drew far enough ahead to allow the engine to clear points 73. Jenkins stated that he whistled, and disc No. 59 and shunting signal No. 89 were cleared. Engine 124 moved forward at once, and Jenkins followed at about 25 yards. When he got to the centre of the scissors crossing he saw the points in the down road go over against him, and he immediately stopped. After he stopped he stated that he whistled "one and a crow." He thought for a moment that he saw an up train approaching him, and that this was the reason for the road being changed. He realised the position he was in and instructed the brakesman to proceed at once to the box to advise the signalman. The brakesman was on his way when the accident happened.

Jenkins estimates that he was not in this position more than one minute when he saw the passenger train on the down line. He reversed his engine and started to go ahead, viz., in the direction of the approaching train, in order to clear the down line. He had moved two or three yards only when the collision occurred. He estimated the speed of the train at 15 to 20 miles per hour.

Brakesman Stevens' evidence was to the same effect. He stated emphatically that he received no instructions from signalman Tucker to wait in the north yard sidings for a hand signal from the box.

Driver Adams of light engine 124 stated that, having propelled his train into No. 3 siding, he was waiting, chimney towards Barry dock, at the east end of this siding. The brakesman of this train, having been to the box and seen Inspector Griffiths and signalman Tucker, returned with permission to go to the shed and finish work. He was not due to book off till 11.40 p.m.

He knew he could not go forward at once as he had observed the shunt being made by engine No. 27. When his fireman, however, saw this engine returning with the cattle truck towards the main line, Adams shouted to the signalman in the box. He "could see the signalman as he came to the window." Adams told the signalman that he was going to shed to finish work, and asked him "if it was right for us to follow that man over the top crossover." He stated that the signalman said "right" and gave a signal with his hand. On receipt of this signal, Adams went forward and followed engine No. 27 on to the main line. He came to a stand two or three engine lengths away. He stated that he had a tail lamp, but he was not certain whether it was red or white. His impression too was that the tail lamp light on the cattle truck in front of him was white. Having cleared the points No. 73 in the up main line he gave a short whistle. The signal was not cleared and he then noticed that there was a train signalled on the down line from Barry dock. An engine and van passed and went towards the van sidings. After this movement (for which "out of section" was received by Barry dock at 10.51 p.m.) Adams stated that the

road was set and the disc 59 cleared. Adams at once proceeded across the main line to the shed. He did not take note at the time, whether engine No. 27 followed him.

The chief points in the drivers' and brakesman's evidence are :—

- (a) That engine No. 27 had tail and head lights and that the driver had received no instructions to await a hand signal from the box before leaving the yard.
- (b) That Driver Adams thought the signalman knew the position of this engine when he obtained permission to proceed on to the main line.
- (c) That the drivers whistled to draw attention.
- (d) That the movement across the main line was made immediately after the arrival of the engine and van from Barry dock station, and therefore after the acceptance of the passenger train.

Driver Morris of the passenger train stated that he was running at a speed of 25 to 30 miles per hour on approaching the distant signal. He then checked the train, and had reduced speed to about 8 miles per hour when passing the outer home signal, and to 5 miles per hour at the inner home signal.

From the effect of the collision I should say that Morris under-estimated his speed, though I do not think he could have been running so fast as 20 miles per hour. He was running at "caution" and, on coming round the curve, was looking out for his signals and did not see the engine standing foul of the line.

3. One other witness is concerned, namely, guard Raisin. He had received orders at the time office to proceed with engine No. 27 from the shed to pick up the cattle truck, to return for a van in the van sidings, and go to the goods yard for further instructions. His own account of his movements in connection with this shunt does not tally with those of other witnesses concerned. He apparently did not accompany the engine when crossing the main line on either occasion. He was, however, present when the cattle truck was being attached, and up to the time the engine returned to disc No. 31 when the tail lamp was placed in position while waiting to proceed on to the main line.

He evidently considered that his brakesman was qualified to deal with the movement, and in allowing him virtually to take charge, I think that he is open to criticism. Considering the state of the weather, that this was Raisin's first experience of main line working, and that it was the first time brakesman Stevens had worked with him, I am surprised that Raisin did not assume more control.

4. After carefully considering the circumstances and the evidence of those concerned, my opinion is that the primary cause of this accident was signalman Tucker's failure to satisfy himself as to the location of engine No. 27. He admitted that he was worried about this at the time. He tried to see the engine and failed. He had no real idea where it was, though he obviously thought it was still at the loading dock. Why, therefore, with any doubt in his mind, he allowed any movements at all to be made, I cannot understand. There was no hurry to release the engines. He had no lack of assistance.

I cannot credit his statement that the movement was made before he accepted the passenger train. The evidence of Driver Adams on this point is conclusive. Moreover, if the passenger train had not left Barry dock there would apparently have been no necessity for his haste in resetting the road, and clearing the signals for this train after the passage of the first engine.

His instructions to brakesman Stevens, not to move from the sidings without his orders, are also open to question. Stevens denied this, though Inspector Griffiths corroborated this part of Tucker's evidence. In any case driver Adams realised the position and, in asking Tucker for permission to follow engine No. 27, evidently thought that Tucker, in giving his permission, also knew what the situation was. Tucker's statements that engine No. 27 failed to whistle and that it was not carrying a tail light are also not supported by other witnesses concerned.

It is difficult to account for signalman Tucker's actions, in which possibly forgetfulness and evidently weather conditions contributed to his failure. In spite of his evidence, on which in some respects I regret that I cannot rely, I do not consider that he acted with reasonable caution under the conditions prevailing, and he must, therefore, take the main responsibility for this accident. He has had 22 years service with the Company of which he has been connected with this cabin for 20 years, for the last 18 months of which as regular signalman.

Brakesman Stevens either did or did not receive orders to the effect that no movement was to be made from the sidings without permission from the signalman. He has a good knowledge of the yard and I cannot believe that he would purposely disregard such orders within a few minutes of receiving them. If they were given it follows that he did not hear them, or, at any rate, did not understand their importance in the circumstances then existing.

From the evidence it appears, however, that he left the yard and ran to disc No. 31 without a tail light on the cattle van. This was remembered when the engine stopped here. I do not think that this should have materially affected the signalman's ability to observe the movement, but it is evidence of a certain amount of slackness on the part of both Raisin and Stevens.

I do not consider that any of the drivers concerned are to blame.

5. The question of signals controlling movements out of the north yard sidings Nos. 2 to 9 was discussed at the Inquiry. It was suggested that the present arrangement by which disc No. 31 controls movements from any of the sidings on to the main line was not adequate. I understand that these sidings are used chiefly for stabling stock and that only on rare occasions is there more than one engine in the sidings at the same time. The practice is that no engine moves out without permission from the shunter in charge or from the signalman. I consider that the existing arrangements normally provide sufficient security, and I do not, therefore, think that additional signalling here is necessary.

On the other hand, there are, during the 24 hours, a large number of shunting and train movements over the scissors crossover No. 51. I think, therefore, that the Company would be well advised to provide the additional protection afforded by track circuiting this connection.

I have the honour to be,

Sir,

Your obedient Servant,

A. MOUNT,

Major R.E.

The Director General,
Public Safety & General Purposes Department,
Ministry of Transport.
