The Inquest was presided over by Dr. W.G. Cogswell sitting with a jury.

**Present:**

- Mr. S.C. Hearn - Operating Superintendent, Ruston
- Mr. L.V. Cox - District Operating Supt., London (W.)
- Mr. Clayton - Assistant Metre Gauge Supt.
- Mr. Davis - Divl. Signal & Telegraph Engr., Derby.
- Mr. B. Howland - Operating Supts. Office, Ruston.

The Railway Executive were represented by Mr. S.F. Jones, B.T.C. Legal Services, the A.S.L.E.F. by Mr. J. Cleaver and the U.R.S. by Mr. Holloway.

Medical evidence was given by Doctors Camps Keith, Lee Hampton Pass and Teare respecting post mortem examinations which they had made. In all cases death was due to injuries with the exception of a woman named Cheetham who had no injuries but had heart diseases which had proved fatal as a result of shock.

Dr. Teare gave evidence of the post mortem examination which he made of the body of Driver Jones. He stated that there were no natural diseases and he had died as a result of injuries to the right side of the skull and lacerations of the brain. Driver Jones was a perfectly healthy man.

Mr. Cox produced a sketch prepared for use at the inquest and described the layout and signalling in detail for the benefit of the jury. Mr. Cleaver asked Mr. Cox to explain the operation of the distant signal in relation to the aspects exhibited on the Home signals and with the Coroner's consent, Mr. Cox stated that the distant signal on the Up Fast line is a colour light signal and shows a green aspect when all the other signals in advance are OFF, or the distant signal shows a yellow aspect if all the other signals in advance of it are ON. The 3rd indication at the colour light distant signal is what is known as a auxiliary light in the event of the main light failing. It is not mechanically possible to take signal No.45 to the clear position unless signals Nos. 44, 43, 42 and 41 are also in the clear position.

**Coroner:** If a driver shows No.45 at clear would he assume that all the others are at clear.

**Mr. Cox:** Under normal working, emergency or otherwise it is impossible to obtain the green light in the distant signal unless all the other stop signals are in the clear position. A driver can assume that with the distant signal at clear the signals in advance are also at clear but he must keep a good lookout and be prepared to stop at the other signals which may have been reversed as a result of an emergency.

**Mr. Cleaver:** If the driver sights a distant signal at clear he can reasonably expect that the Home signals are in the OFF position.
Mr. Cox. : Perfectly correct.

Coroner. : And if the distant signal is against him.

Mr. Cox. : If the distant signal is at caution the driver must be prepared to stop at the first stop signal which in this case is 1474 yards ahead.

Driver Payne stated: After leaving Hatch End, I was on the lookout for Harrow No. 1 Up Slow Distant signal which is situated near Headstone Lane Station. It was rather foggy and I saw the distant signal at caution. I brought the train under control to be prepared to stop at the next signal and on slowing down I saw the signal was off from slow to fast. When I first came in sight of the Home Signal at Harrow it was OFF and I went over the crossing at about 15 m.p.h. and entered the platform. I was travelling bunker first, I was on the right hand side of the foot-plate and I asked the fireman to look out for signals all the way.

I was stationary in station about 2 minutes and up to the time I felt something hit me in the back everything was as usual. We are booked to cross from slow to fast at Harrow on this train.

I saw the train on the Down Fast Line coming by just after we had been pushed forward under the bridge.

Mr. Molison stated: I was on the platform at the time of the accident which I should say occurred at 8.18 a.m. I did not see anything of the crash.

I was in attendance to the Tring train and people were getting in and out and I was assisting them at the front end of the train, closing doors, when without any sound the engine and front part of the Tring train jolted forward violently. I was standing between approximately the 1st and 2nd coaches.

I estimate that the train was at a stand in the station roughly one minute before the train jolted forward.

I saw the Down Fast train just coming under the bridge at the South Side, but I did not actually see what happened as my view was impeded by the Tring train in the platform.

Mr. Cleaver. : When you came on the platform how far could you see, I understand it was misty at the time.

A. : A couple of hundred yards.

Q. : Would that apply in both directions.

A. : Yes.
Signalman H.C. Armitage stated: I am a Relief Signalman and I have received special training whereby I can work at more than one box.

When the 10/20pm Glasgow to Euston train passed on the Up Fast line, I gave T.E.S. to North Wembley, replaced signals to danger and then gave T.O.S. to Hatch End. I then accepted the 8/15am ex Perth on the Up Fast which was straight after I had given T.O.S. for the 10/20pm Glasgow train. I had accepted the 7/31am ex Tring on the Up Slow line and the booked path of that train is slow to fast at Harrow and that was done on this particular morning. This train passed Hatch End at 8.14am.

Q. Coroner. Can you say whether you accepted the train on the Up Slow line before or after the Perth express.

A. I do not know. I cannot remember.

(The Coroner then pointed out to Signalman Armitage that he was only endeavouring to get to bare facts in a non-technical way and asked Signalman Armitage to try to answer question. To this Armitage replied that he had been asked the question and said he did not know and still the Coroner kept asking him. The Coroner then rebuked Armitage and told him that he must try to answer questions and to do so politely)

In answer to further questions Signalman Armitage stated: The signals on the Up Fast line would be at danger and the junction would be set from Up Slow to Fast and I would make this movement after the 10/20pm ex Glasgow train had gone. I did not pull off signals for the Slow line train until the train had struck the approach track and this is the usual practice. The annunciator for this track would operate when the train struck the track which is about 200 yards from the Home signal. I could see the train approaching the signal from the box and it came through the junction in the normal way and came to a stand in the Up Fast platform at 8.17am. I got this time from the clock provided in the signalbox. I received the T.E.S. for the Perth express and also at the same time the T.E.S. for the Euston to Liverpool train on the Down Fast line.

Questioned by the Coroner, Armitage stated:

Had I been in a position to allow the Perth express a clear run through the station on the Up Fast line it may well have been that this and the Liverpool train on the Down Fast line would pass each other in the station.

The first time I saw the Perth train was as it was passing the Up Fast Outer Home signal and the noise of the train gave me the impression that it was not stopping. It was obvious the driver had not obeyed my signals and I could only do one thing, which was to place the detonators on the Up Fast line opposite the signalbox. This I did and at the same time I replaced my signals to danger against the Down Fast line.

Q. Mr. Cleaver. You have stated that you do not recall which train you received from Hatch End first, the Local or the Perth, is that correct.

A. That is not how the question was worded to me.

Q. I think the question was which train had you accepted first. (The Coroner agreed that this was so.) If as you say, you accepted the
Mr. Cleaver: Perth train first would you not have allowed that train to proceed on the main line in preference to the Watford train.

A. Are you under a misapprehension of what I said.

(The Coroner asked Mr. Cleaver to put the question again.)

Q. I am asking the witness, on his previous reply to you, why, or rather, if he had received the Perth train first whether he would have allowed its passage on the Fast line with the knowledge that when he had received the Local he would have allowed it into the platform thus blocking the Perth train.

A. No, I would have kept the Up Fast platform for the local train bearing in mind that the Up residential trains have preference over all other trains.

Q. You booked on at 6.0am on that particular day.

A. I booked on at 5.37am at Watford.

Q. Very well 5.37am what was the weather conditions like when you got to Harrow.

A. Dark and misty.

Q. Was it just misty, was it misty all the time.

A. What time do you mean.

Q. From the time you arrived up to the time of the accident.

A. From the time I arrived until 6.35am it was not foggy enough for me to apply the fog regulations but I did apply fog regulations after that time until 8.10am.

Q. What is implied in fog regulations.

A. An additional ½ mile in advance of Home signal unless the fog signalman is on duty at the Outer Home signal when you can then accept as normal.

Q. You do not have to contact Hatch End under these regulations.

A. No.

Q. Under these regulations you could not have accepted the Perth train.

A. No.

Q. At 8.10am the weather in your opinion was sufficiently clear to withdraw the fog regulation.

A. Yes, I could have given fog clear at 8.0am but like the regular practice with signalmen, I usually allow 10 minutes to see what the weather was doing.
Q. Mr. Cleaver. Had you continued to work fog working after 8.10 am you would not have had a fogman on duty at the Outer Home signal, should you have had one there.

A. Yes.

Q. Then why did you not have one there.

A. Well, I don't know what you are getting at but I will tell you what the practice is. At Harrow No. 1 you have a callman's which I operate but, because it takes about one hour to call the man out with the time being 6.35 am, I consider that it would be best to wait until the platelayers came to work at 7.30 am and they could have then reported to the signalbox for fogging.

Q. But why did you not have them on duty.

A. I can still work to the regulations without having fogsignalmen.

Q. The answer is that if you had had this fogsignalman on duty at his post you could have accepted this train up to your Home signal in foggy weather.

A. Yes.

Q. How far are the detonators you placed on the line from the rear of the Tring train.

A. About 18 yards.

Q. How far is it from your signal cabin to your Inner Home signal.

A. About 73 yards.

(Corrected by referring to plan which stated 155 yards.)

Q. What is the distance from your Inner Home to your Outer Home signal.

A. 440 yards.

Q. Had this detonator machine which placed these detonators 18 yards from the train operated the detonators at your Outer Home signal, would this accident have been avoided.

A. No.

Q. Would you agree that it would have been considerably minimised.

A. Yes, had that driver obeyed the Distant signal at the start and then exploded the detonator at the Outer Home signal, the accident would not have happened.

(QWhen further asked to answer the point)

The accident would still have occurred but would have been minimised.
Q. Mr. Cleaver. Conditions of visibility determined from your signalbox, would you agree on this morning the fog was very patchy.

A. Yes.

Q. So that the visibility from your signalbox may have been different to that from your box to that appertaining at the Distant signal which is about 1½ miles away from your box.

A. Quite probably.

Q. Therefore it is impossible for you to know what is the actual visibility at this Distant signal.

A. That is quite correct.

Q. When you pulled off for the Watford train is it impossible for you to pull off the Distant signal and put it on again for the Perth train.

A. Absolutely impossible.

Q. You are a District Relief Signalman, how frequently do you get in that signalbox.

A. Not very often, I have been in on four occasions.

Q. How long have you been in for this period.

A. 10 days.

Q. What was your turn of duty on the day preceding the accident.

A. 2. 0am to 10.0pm.

Q. In this signalbox

A. Watford No.1.

Q. Which signalbox were you in on Tuesday, Watford No.1.

A. Yes.

Q. And you booked off at 10/0pm and booked on again the next day at 5.37am.

A. Yes.

Q. Is there not some provision that a signalman should have 12 hours rest.

A. There may be.

Q. Do you consider that 8 hours rest for a signalman is sufficient.

A. Knowing what I know, I do not consider that that applies.
Q. Mr. Jones. Have you got an extract of the Train Register Book. I wish to suggest that in view of the questions that have been asked, that if Mr. Armitage could look at it perhaps he will say whether or not he accepted the Tring train first.

(The extract from the Train Register Book was produced and certified as correct by Mr. Cox.)

A. Yes Sir, the Tring train had been accepted first at 8:17am which is 4 minutes before the Perth.

Q. You have asked one or two questions about visibility. Where was the Perth train when you saw it appear out of the mist.

A. She was just opposite the Outer Home signal.

Q. So that at the time the Perth express first came into your view, the visibility was about 550 yards.

A. Yes Sir.

Q. Had you tested visibility in the southerly direction about the same time.

A. I could not say for the southerly direction. I could see along the platform up to the overbridge but the passengers on the platform obstructed my view.

Q. Well you say that before taking off the fog block there should be a certain visibility.

A. 200 yards.

Q. What was the distance of your visibility in the southerly direction.

A. Well, the mark we use in a northerly direction.

Q. Well put it this way. As you can see the platform we can work it out from the plan. You could have seen further under the bridge had not passengers been there, would it be fair to say that you could see 280 yards.

A. According to that Sir, yes.

Q. You are certain that when you gave the right of way to the Tring train to proceed slow to fast that the Up Fast Distant signal and outer and Inner Home signals were at danger and therefore you gave passage to the Tring train. Assume for a moment that there had been fog-signalmen by the Outer Home the driver having gone past the caution signal you cannot say whether he would have taken any notice or not of the fog signals even if he exploded detonators there.
Q. Mr. Jones.

I cannot really answer that one.

A.

Q.

Let me put it this way; suppose you had fog signalmen at the Outer Home signal the driver could just as well ignore him as he had done your caution signal.

A.

Yes.

Q.

If no signalman is on duty and during fog working is there any precautions you have to take.

A.

Yes you must have a \( \frac{1}{2} \) mile in advance of your Inner Home signal.

Q.

Did you see the Up Fast points after the accident.

A.

Yes.

Q.

Was there anything to indicate to you that after the Perth train had passed the signal that these points from the Slow to the Fast line were as set for the Tring train.

A.

Yes, the junction was still set for the Slow to Fast line and the points had been run through.

Q.

Just tell me this then, if those points were still set for the Slow train to travel to the Up Fast at the time that the Perth train passed through then, would it have been possible for you to lower any signals on the Up Fast line north of that.

A.

Absolutely impossible because with the 7.31am Tring train standing in the platform on the Up Fast line and the Starting and Advanced Starting signals in the clear position it absolutely locks the junction.

Q.

And that being so you are certain that the caution signal was at amber and the Inner and Outer Home signals at red and they could have been altered by you.

A.

That is so Sir.

Q. Mr. Holloway.

Mr. Cleaver made reference to your previous turn of duty which was a "refresher" at Willesden No.1.

A.

Yes Sir.

Q.

You are an experienced signalman and quite comfortable in Harrow No.1 Box and do not feel uneasy.

A.

Yes Sir.

Q.

Regarding this short rest. As a District Relief Signalman you are used to this short rest if it can be called that when you are within half an hour changes of 8 hours.

A.

Yes Sir.
Q. Mr. Holloway. But that does not make you feel tired taking duty from 2 p.m. turn of duty to 6 a.m. turn.

A. I have never experienced any difficulty.

Q. Suppose when occasions demanded you did not finish until 2 a.m. you would not expect to be called for duty at 6 a.m.

A. No, Sir.

Q. You have been going through an ordeal, through a technical board, have you received any rebuke, orally or otherwise from any Railway Officer for what you did that morning in carrying out your instructions.

A. None whatsoever.

Q. And you are quite confident in your own mind that what you did that morning was quite right.

A. Yes Sir.

Q. Regarding the fog; as an experienced District Relief Signalman you are fully aware of the urgent necessity of putting full fog block into operation and as an experienced man you know when to take it off.

A. Yes Sir.

Q. You said when giving an explanation that in taking it off, you yourself, and I think that goes for most signalmen, you are never over anxious to take fog block out of operation and you allow 10 minutes to be on the safe side before resuming normal working.

A. Yes Sir.

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Mr. Davies stated: Immediately after the accident Mr. Williams, Signal and Telegraph Engineer, who was present at the scene, arranged for the signalling equipment to be tested. This and subsequent tests of the signalling apparatus have been very carefully carried out and have shown that everything was satisfactory.

I have examined the records with regard to the signalling equipment and there is no history of any defect during the past seven years with regard to the particular signals under review.
Passenger Guard J. Kent: The 8/15pm Perth to Euston train had been controlled in a proper manner all the way down from Crewe. The train was last checked at the North End of Watford Tunnel when it practically came to a stand and moved off again. This indicated to me that the 10/20pm Glasgow to Euston train was in front and that my driver had observed a signal. It was foggy at the time and we went through the tunnel at 5 to 10 m.p.h. When we emerged from the tunnel, I dropped my window and looked out and saw that the fog had cleared and I could see all the signals were clear for my train. We then commenced to gain speed into a practically normal run and the fog was just then patchy and we attained an approximate speed of 50 to 55 m.p.h. I was busy at the time with invoices to throw out into the Camden net and all went well until the unfortunate crash. There was nothing amiss until then.

Q. Coroner. Do you observe the signals always.
A. When I am not otherwise engaged.

Q. Mr. Cleaver. You have mentioned that it was foggy and that when you got to Watford the driver passed signals at the tunnel and that when you got through it was clear. Can you tell us how far you could see after the accident.
A. It was much clearer and to give you a sight for distance, when I went back to protect my train I went such a distance that I could see the Outer Home signal. I went a good halfway between the Inner and Outer before I could see the Outer. When I put the "fog" down and locked back at my train I could just see a black object in rear of my train.

Q. Did you feel brakes applied before the collision.
A. Not after Watford Tunnel North a few seconds before the crash.

Q. So you felt an application of the brake before the impact. What did it indicate to you.
A. I came to the conclusion from that that the driver had seen something and it was too late to do anything and had applied the brake to the full extent.

Q. If the driver had run over detonators in other circumstances would he not have immediately applied the brake.
A. Not so severely Sir.

Q. Any-how you are sure in your mind that the impact did not cause the brake application but that the brake was applied first.
A. Yes.

Q. Mr. Holloway. On many occasions you have heard your driver whistle for signals etc., did you during this journey hear your driver whistle for signals at any point seeing that you say you had a pretty rough passage from Crewe due to fog etc.
A. No Sir, I cannot say that I heard him whistle.

Q. And you never heard one when approaching the Distant signal at Harrow No.1.
A. No Sir, I did not.

Q. Mr. Holloway. Has it been your experience Mr. Kent of hearing drivers giving a series of pop whistles and do you agree that this is a special signal.

A. It is a warning signal.

Q. Have you known an occasion when a driver has done that when running into something.

A. I have heard it used.

Q. Did you hear it on this morning.

A. I did not but I was inside the van and a lot of noise going on and I cannot be sure that I would have heard it.

Q. Was your window up.

A. Yes, I dropped it to look out occasionally and pulled it up again.

Q. Was there any condensation on the window.

A. Yes there was.

Q. That would not actually improve what the weather looked like outside and give a correct estimation of the degree of fog.

A. Well that would be so Sir.

Mr. Clayton stated that: The engine of the Perth express has been examined subsequent to the accident and nothing found in the condition of the engine to detract a driver from his normal duty. The brakes were in good order, the driver's brake valve in the ON position indicating that the brake had been fully applied. The regulator was shut. Another emergency action would be to place the gear in reverse, but in this case it was still in fore-gear in the drifting position indicating that the driver was running with low steam.

Q. Mr. Cleaver. Can you say when Driver Jones was last medically examined.

A. When he was passed for driving in 1948.

Q. Would that be when his colour vision was last tested.

A. Yes.

Q. Can you tell us that it does happen on occasions that even though a man's colour vision is normal on last test, it is found faulty in a subsequent test.
A. It certainly can happen.

Q. Mr. Cleaver. Can you say that enginemen are removed from the footplate because of colour vision failures?

A. Yes Sir.

Q. And that is revealed at a test.

A. Yes.

Q. So there is always that possibility that even though a driver's vision is normal something can happen subsequently.

A. Yes that is so.

Mr. Cox (Recalled)

Mr. Holloway Has there been anything in the way of a rebuke, however slight, or mild given to Signalman Armitage through you on the way he acted that morning.

(The Coroner advised Mr. Cox that he need not answer the question if he did not desire to do so.)

A. For myself the answer is no.

Mr. Clayton (Recalled)

Q. Mr. Cleaver. Was Driver Jones an experienced driver.

A. He was an experienced man and was passed for driving in January 1948 and would have done this run with similar trains up to London.

A verdict of "Accidental Death" was recorded.