MINISTRY OF TRANSPORT

RAILWAY ACCIDENT

REPORT ON THE COLLISION

which occurred on

30th July 1961

at

PITSEA HALL OCCUPATION LEVEL CROSSING

in the

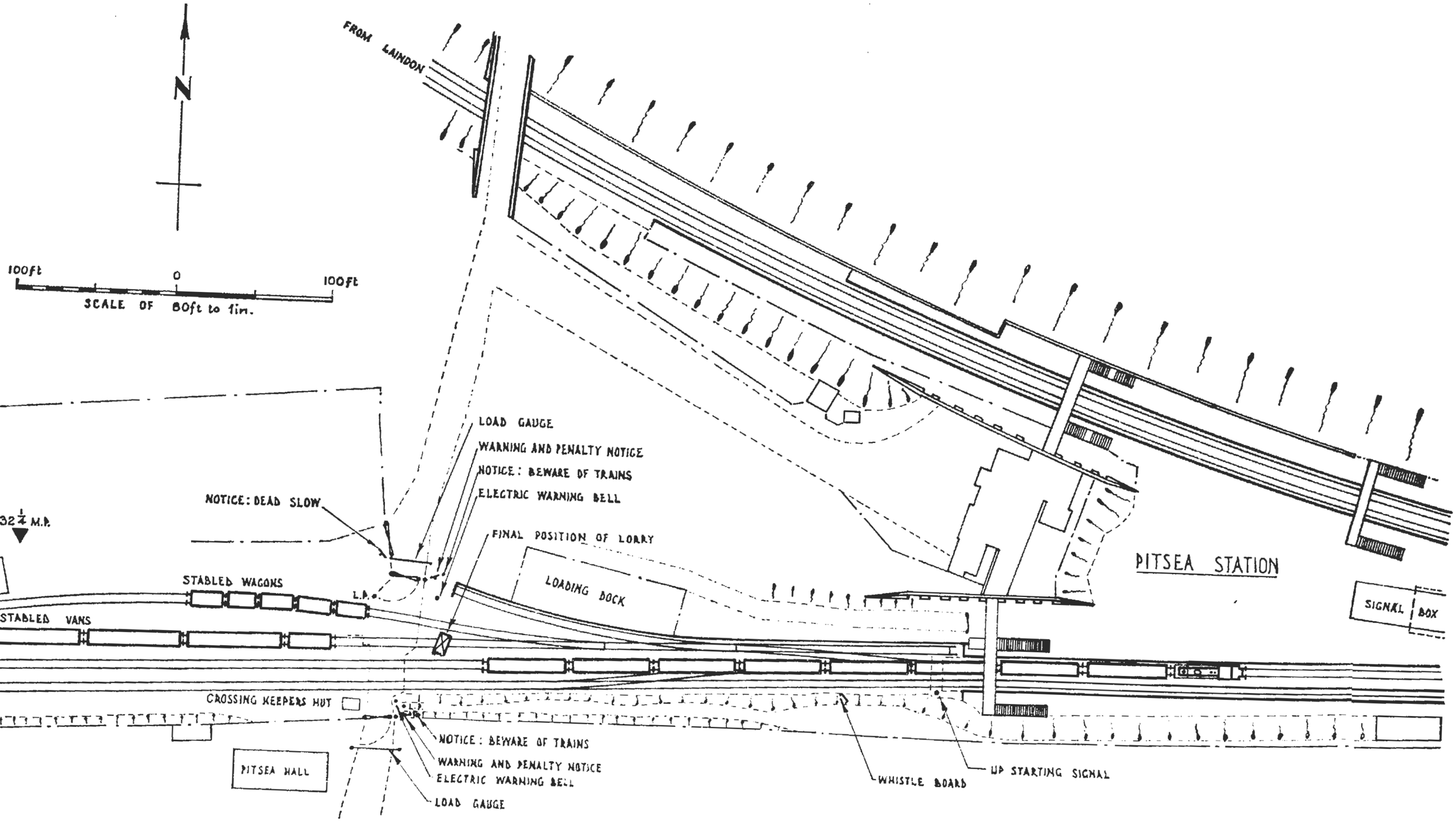
EASTERN REGION
BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE

1961

ONE SHILLING NET

ACCIDENT AT PITSEA HALL LEVEL CROSSING — 30th JULY 1961



MINISTRY OF TRANSPORT,
ST. CHRISTOPHER HOUSE,
SOUTHWARK STREET,
LONDON, S.E.1.

25th October 1961.

SIR,

I have the honour to report for the information of the Minister of Transport, in accordance with the Order dated 4th August, 1961, the result of my Inquiry into the collision between a steam passenger train and a loaded tipping lorry, that happened at about 10.28 a.m. on Sunday, 30th July, 1961 at Pitsea Hall Occupation level crossing close to Pitsea station on the Tilbury Loop of the London, Tilbury and Southend line, Eastern Region, British Railways.

The 10.5 a.m. Class B Down passenger train, Tilbury to Thorpe Bay, was reducing speed to stop at Pitsea station, and was travelling at about 30 m.p.h. as it reached the crossing. The driver could not see the road approach from the left hand side as he looked towards the crossing because of railway vans stabled on an adjacent siding close to the road, and did not see the lorry which came from that side on to the crossing, before his engine struck the front of it. The lorry was spun round and its body crushed the sides of the first two coaches as the train ran past. The coaches were not, however, derailed. The train travelled about 175 yards before it stopped with the last coach clear of the crossing and of the capsized lorry.

Fortunately there were no passengers in the first two coaches though the rest of the train was well filled, and there were no injuries to passengers or train crew. The driver of the lorry, Mr. W. Pound, was thrown out and I regret to state that he was killed. An elderly lady pedestrian who was at the crossing at the time was seriously injured, but I understand that she is making a good recovery.

The emergency services arrived promptly and the injured lady left for hospital in an ambulance at 10.45 a.m. The permanent way was not damaged and the site was cleared and train services were restored before midday.

The weather was fine and clear.

DESCRIPTION

The train and lorry

1. The train consisted of 8 coaches weighing 211 tons, drawn by a BR Standard 4 MT tank engine with 2-6-4 wheel arrangement, weighing 87 tons. The brake power of the train was 69% of the total weight of 298 tons, and the length was 159 yards. All the coaches except the second one had timber bodies on steel underframes; the body of the second one was of steel panels on timber framing. The engine was running bunker leading and the driver's position was therefore on the right in the direction of travel. The engine suffered minor damage only; the crushing of the sides of the bodies of the first two coaches was severe, but the damage to the remainder was confined mainly to handles which were broken as the coaches scraped past the lorry.

2. The road vehicle was a Commer diesel tipping lorry with a capacity of about 6 cubic yards. It was carrying a load of excavated spoil from the Basildon New Town Area to a tipping site on the Thames Estuary. The front end of the lorry was destroyed by the impact.

The level crossing

3. This level crossing, which carries appreciable road traffic, is manned by day during weekdays, but not on Sundays. The sketch map on the facing page shows the arrangement of the level crossing; it is situated at the country end of the Tilbury Loop line close to Pitsea station where this line re-joins the main line to Southend, and is between the Up starting colour light signal at the end of the Up platform 110 yards away, and the Down home colour light signal which is 105 yards away towards Tilbury. These signals were installed in place of semaphore signals, in approximately the same positions, in November 1960 as a part of the modernisation scheme. The signal box, on the main station platform in the 'V' between the two routes, is 210 yards from the crossing; the view between it and the crossing, however, is hampered to some extent by the stairs of the footbridge between the Tilbury Loop platforms and by stabled wagons in a loading dock on the Down side of the line.

4. The road over the crossing, Marsh Road, is a continuation of the approach road to the station which passes south over the main L.T. & S. line by a bridge and then downhill to the occupation crossing. The turning to the station, between the two railway routes, is between the bridge and the crossing. South of the level crossing the road leads past Pitsea Hall, close to the railway, to an area of development on the Thames Estuary, where there is also a reclamation site. The road is metalled on both sides of the crossing, and is approximately 16 ft. wide on the estuary side; it is wider to the North. The level crossing itself is surfaced with sleepers and the width of the roadway is approximately 19½ ft.

5. As will be seen from the map, the gates are set well back from the running lines, the one to the North being outside two sidings on which rolling stock is frequently stabled. They are of field type, 11 ft. wide; the south one opens away from the railway and the north one towards it. 4 ft. wide wicket gates are provided in line with the main gates. The distance between the gates is 30 yards, and the distance between the Down line and the adjacent siding on which vans were stabled to within 10 yards of the crossing at the time of the accident is 7 ft. 4 ins. between running edges of rails.

6. The crossing is provided with the usual warning and penalty notice on either side combined with an instruction to open the far gate before the near gate. It is also equipped with load gauges provided recently in anticipation of electrification. There is a whistle board on the Up line, near the end of Pitsea Up platform, about 95 yards away, and one on the Down line 500 yards away. From near this point the railway is straight through the crossing to beyond Pitsea station. The gradient is rising at 1 in 200 in the Down direction for the last half mile to the crossing after a length of falling gradient from Stanford-le-Hope, the station before Pitsea. Speed on the line is limited to 60 m.p.h.

7. In addition to the notices and gauges, warning gongs, recently replaced by bells, have been provided on both sides of the crossing. These are operated by a Down train when it reaches a track circuit 2 miles away if the intervening signals are at clear, and they sound continuously thereafter until the train reaches the crossing. There are also light indicators in the crossing keeper's hut which is on the estuary side of the crossing.

History of the crossing

8. The level crossing has always been regarded by the Railway as of occupation status, though it is described in the Book of Reference to the plans deposited with the London, Tilbury and Southend Extension Railway Act of 1852, under which the line was built, as a public road. The entry in the Book reads as follows: —

No. on Plan	*Description of Property*	*Owners or Reputed Owners*	*Lessees or Reputed Lessees*	*Occupants*
24	Public Road	*Rev. George Heathcote and the *Hon. Payan Dawnay and Surveyors of Highways	—	William Hunswicks, Charles Bayley, William Ockenden, James Goulsen, James Green

**These two persons represented, I think, the Dean and Chapter of St. Paul's Cathedral.*

9. The phrase "public road" is not generally used in the Book of Reference, the regular phrase being "public highway"; where the proposed line of railway crossed such highways the "Owners" were shown solely as the Surveyors of Highways of the parish concerned, and no "lessees" or "occupiers" were shown. It seems, therefore, that the road did not have the status of a public highway at the time that the Railway was built. This appears to be confirmed by a Conveyance dated 18th January, 1856 giving the Railway Company a right of way over the road.

10. The deposited plan shows the road as leading to a farm with numerous outbuildings. Most of these have disappeared but the farm, now Pitsea Hall, remains.

11. Section 9 of the 1852 Act gives a list of "turnpike roads" and "public roads" which might be crossed on the level. (It will be noted that the phraseology in the Act appears to be at variance with that used in the Book of Reference). The road at this crossing is not included in Section 9, but this omission is not of itself proof that the road was not a public one when the railway was built, since the deposited plan shows the railway as passing under the road by a bridge and it would not therefore have been included in Section 9 even if it had been a public highway. On the centre line of railway as shown in the deposited plan the railway would have been in a cutting of 15 feet where it crossed the road. In the event, however, the railway appears to have been constructed at the southern limit of deviation in this area where the levels of the road and the railway were the same. This was within the farm limit, just to the North of Pitsea Hall. It is of interest that the chord railway line between Barking and Pitsea, now the main line, which was constructed 30 years later under the Act of 1882, passes under the road through a bridge at the site of the one shown on the original plan.

12. The Book of Reference for the 1882 Act shows the road as a public highway in the ownership of the Billericay Highway Board. It seems therefore that the road on the approach to the crossing was deemed a public highway in 1882. This does not, however, mean that it was one in 1852, and even if it was it may only have been a public highway as far as the gate of the farm to the south of which lies the level crossing. I understand that the road on the landward side of the crossing was classified as a Class III road about a dozen years ago, and that the road on the estuary side was taken over by the Basildon Council in 1956.

13. Over the years and for a variety of reasons there has been a growth of public road traffic over the level crossing. I understand from the Railway that is was manned for special reasons during the first world war and then again in the second; thereafter it has been manned to the present time by day during weekdays, though not on Sundays. The present arrangement is that crossing keepers are in attendance for two shifts from 6 a.m. to 10 p.m.

14. There have been three previous accidents here in the past six years but all have been on the Up line. All occurred when the crossing was not manned, two on Sundays and the third at night. In two of them local taxis were involved and the third, one of the Sunday ones, was between a light engine and a heavy A.A. gun drawn by a tractor, which was sixth in a convoy.

Present conditions at the crossing

15. The crossing has been heavily used for some little time by tipping lorries carrying spoil from the Basildon Development Corporation work area to a reclamation site on the estuary. It is also used by vehicles travelling to a few small factories and to a Sea Transport Stores, which are located on the estuary side, and to the new Electrical Depot of the Eastern Region which has been constructed on that side near Pitsea station. There are also a few private dwellings whose residents use the crossing.

16. I asked for a census to be taken at the crossing on 14th August, and learned that 1,006 vehicles, including 116 motor cycles, used it on that day; 344 were heavy lorries, mostly tip lorries, and 240 were private cars, the remainder being light lorries, vans, etc. A census taken three years previously on Monday, 17th July 1958 showed a traffic of 279 4-wheeled vehicles and 39 motor cycles over the crossing. I understand from the Deputy Chief Engineer of the Basildon Development Corporation that spoil removal from their site should continue for the next five years at the present rate before a gradual reduction to a termination after another three years. It seems, therefore, that the present volume of road traffic, due in a considerable degree to tip lorries, will continue for some years, by which time, no doubt, development to the South of the crossing will have given rise to road traffic of other kinds.

17. The railway traffic over the crossing is expected to increase by about one-third to approximately 90 trains a day when the electrified train service is fully introduced, with about two-thirds of that amount on Sundays. In addition there continues to be a limited amount of shunting over the sidings, most of which is done at night.

18. The warning gongs already mentioned were installed last November as a part of the additional precautionary arrangements thought advisable for electrification. Their noise, however, gave rise to strong complaint and, as advised to me by the General Manager, Eastern Region, they were at first muted on the 7th June and then removed on the 19th June leaving the clapper, which made sufficient noise to warn the crossing keeper, and also crossing users if they left their vehicles to listen for it. This was the situation at the time of the accident.

Report

19. So far as the accident itself is concerned Driver R. G. Anderson said that he received no warning of it. He had left Tilbury about five minutes late but was only 1½ minutes late on starting from Stanford-le-Hope, five miles away from Pitsea. His train ran under clear signals thereafter. He had sounded the whistle as was his custom at a number of crossings between Stanford-le-Hope and Pitsea even though there was no whistle board for them, and he again whistled as he approached the board for the crossing until he reached the board. He had closed the regulator some little while before he applied the brake about 150 yards before the crossing, in order to reduce speed for the stop at Pitsea. He saw no movement at all over the crossing as the train approached, but the full width was not visible because of the crossing keeper's hut to his right side and the stabled vans on the left. As the train came very close to the crossing the obstruction of his view to the left by the projecting part of the engine bunker prevented his seeing the lorry emerge from behind the stabled vans. He thought that his speed had been reduced to about 30 m.p.h. at the crossing when he felt the crash, and immediately he applied the brake fully. The engine rocked but was not derailed, and the train continued forward to stop with the first three coaches at the platform. Anderson left the fireman to secure the engine and walked down the train to see if anyone had been injured; he then went to the signal box to report the accident.

20. Fireman R. D. Dowman was on the left hand side of the engine; he said that he had been looking forward, but that he was adjusting the injector and looking down at the overflow pipe as the train closely approached the crossing. He did not see the lorry appear from behind the stabled vans on the adjoining siding. He confirmed that the driver had whistled. Guard E. C. Gunner had nothing to add to Driver Anderson's evidence. He confirmed that the brakes had been in good order, with a train pipe vacuum of 21 inches on the gauge.

21. Signalman C. A. L. Lawrence, on duty in Pitsea signal box, said that he heard the collision, saw the passenger train come to a stand, and restored all signals to danger on the Tilbury Loop. He then sent the "Obstruction Danger" signal to Stanford-le-Hope. He added that at the time of the accident there were no Up trains closely approaching Pitsea.

22. Chief Inspector T. W. J. Dolder said that he made tests beginning at 11.45 a.m. of the gong clapper at the crossing. It was working properly and he assured himself by questioning the lineman, who had arrived at the crossing within a few minutes of the accident, and others, that the clapper had been in good order and that no adjustment had been necessary after the accident.

23. Mr. R. W. Barratt, Station Master, Pitsea, was in front of his house at Pitsea station when he heard the noise of the collision. He went immediately to the crossing to find out what had happened, made sure that the emergency services had been called, and told the signalman to protect the lines. He then arranged for the deceased lorry driver to be taken from the scene of the accident and thereafter, when police photographs had been taken, for the damaged lorry to be drawn clear of the railway. At that time Mr. Bates, one of the members of the firm which employed the lorry driver, told him of the arrangements which had been made to reduce delays on that day to his lorries at the crossing. Mr. Barratt understood that six lorries had been at work during the morning carrying spoil from the Basildon New Town site to the tip on the estuary and that a spare man had been sent by the firm to open the gates. The accident happened on the first trip after the break for breakfast, when the spare man was not at the crossing and when three of the lorries loaded with spoil arrived at it on their journey to the tipping site on the estuary.

24. I spoke to the drivers of the two other lorries which were in the same group as the one involved in the accident, Mr. J. C. Hollier and Mr. L. M. Guilfoyle, at the offices of their employers, Messrs. Thos. Bates and Son of Harold Wood, Essex, and they explained to me what had happened. I understood them to say that they had been employed by Messrs. Bates for perhaps two years; their jobs varied, but both knew this one well. They had not, however, worked lorries over this crossing previously on a Sunday. On this day they had made three trips before the break, being admitted through the gates by one of the firm's men. They realized that the railway gateman was not on duty. At the time of the break their three lorries were loaded; after it they drove to the crossing on the way to the tip with Pound leading, followed by Hollier and then Guilfoyle. The gates were closed and Pound got out of his lorry and opened them. As he was doing this Hollier left his lorry, got into Pound's lorry and drove it over the crossing, stopping about 30 yards beyond the far gate so that the other two lorries could stop behind him clear of the gate. While he was doing this Pound walked back, got into Hollier's lorry and drove on to the crossing. Meanwhile Hollier had got out of the leading lorry and was walking back to the far gate of the crossing. Before he reached it he heard a train coming and saw his lorry, with Pound in it, moving forward. He ran towards the crossing waving his arms to attract Pound's attention, but Pound seemed to be looking towards Pitsea station as he drove forward to collide with the train.

25. Hollier's reason for driving Pound's lorry over the crossing, and letting Pound drive his, was apparently to enable him (Hollier) to get back to close the gates behind the third lorry as it passed, thus saving time. The arrangement was not fixed in detail between him and Pound but developed naturally. He had understood Pound to say during the break that he would act as gateman for the rest of the morning, and Hollier expected him to stop at the crossing on his way back from the tip, and to remain there. Hollier was insistent that he did not hear the clapper of the gong at any time while he was driving over the crossing, or while walking back.

26. Guilfoyle remained in his lorry while the interchange between Hollier and Pound took place, and he had nothing to add to Hollier's story in this respect. He said that he expected to make about 12 to 14 trips in a day on this job. He was well aware that the crossing was not safe when not controlled, and he commented, as did Hollier, on the lack of view towards Stanford-le-Hope when rolling stock was stabled in the sidings close to the crossing, as was generally the case. He also said that he did not hear the clapper of the gong; this is not however surprising in view of the noise of the lorry engines.

27. I asked both men whether they had judged the safety of the crossing at all by the position of the semaphore signals on either side before these had been replaced by colour lights. Hollier said that he had never taken any notice of them and Guilfoyle had only worked on this job after the semaphore signals had been removed. Neither of the men could offer any suggestion as to why Pound should have been looking towards Pitsea. Hollier said that the diesel engine of the Commer lorry was moderately noisy. He was sure that the driver's window was open when he got out of the cab.

Conclusions and Remarks

28. It is clear that the lorry came on to the crossing from the concealment of the stabled railway vans as the train was very close to it, and I am satisfied that there was nothing that the train men could have done to prevent the accident other than to have whistled continuously on the approach to the crossing. If Driver Anderson had done this the lorry driver might have heard it above the noise of his engine, though I think the sound would have been muffled by the stabled vans to an appreciable extent. Drivers, however, are not expected to whistle continuously when approaching such crossings, and there is no doubt that strong complaints of nuisance would be made if they were required to do so here. The distance of 175 yards travelled by the train under a full brake application after the collision is commensurate with Driver Anderson's estimate of speed of 30 m.p.h.

29. Fireman Dowman, if he had been looking forward at the time, would only have seen the lorry emerge from the concealment of the vans at about 30 yards range and no effective action would then have been possible.

30. Though there appear to be some anomalies in the records concerning the status of the road towards the level crossing, it would seem that it was a private one at the point where the railway crossed it, though there may have been a public foot right of way over it. The status of the crossing would thus have been "occupation", as claimed by the Railway, and I understand that the subsequent adoption of the road on either side would not have altered the Railway's obligations. At such crossings it is the responsibility of the user to ensure that it is safe to cross, before doing so; it is apparent from the tale that I was told that the unfortunate deceased did not so make sure. I can only surmise that he did not see the train as he walked back over the crossing after having opened the far gates, and assumed that the crossing would therefore be safe when he drove the lorry over it. It is clear that the deceased was fully aware that the crossing was not manned on that day, and the fact that there was no notice to the effect that the crossing is not manned on Sundays had therefore no bearing on the accident. I think nevertheless that such a notice is advisable and the Railways have erected one on either side of the crossing.

31. I do not believe that the clapper of the gong failed to work on this occasion. The initiating point for it is two miles away, however, and it would have been working steadily for about three minutes before the accident happened. So long a warning may be of value to the gateman, but road users will tend to pay less heed to it than they would to a shorter, more urgent one. It would be better if the warning of the bell, which has now replaced the gong, were to sound for only about 20 seconds before the fastest train reaches the crossing, and I recommend that this be done. Adequate notice to the gateman will still be necessary, of course.

32. For the same reason I consider that the whistle board on the Down line ought to be placed only about 150 yards from the crossing. Though the speed of the line is 60 m.p.h. and may be raised in the future, nearly all trains stop at Pitsea, and those that do not must reduce speed for the permanent 15 m.p.h. restriction on the connections at the country end of the station. It is reasonable therefore to assume an average speed of 40 m.p.h. on the approach to the crossing for the fastest train, and since engine drivers habitually sound the whistle on the approach side of a whistle board (say at 50 yards from it) this will mean a warning whistle at least 10 seconds before the train reaches the crossing. This, in my opinion, is a much more realistic warning to road users than one given at 500 yards range, 25 to 30 seconds before the train reaches the crossing as happens at present. Moreover at this distance the whistle may well not be heard in unfavourable conditions.

33. When the crossing is attended there is no great objection to stock being stabled close to it on the siding adjacent to the Down line even though it obstructs the road user's view of approaching trains, since safety rests on the attendant. I think, however, that the Railways were unwise to let this be done when the crossing was not manned, since the obstruction of view then made it less easy for a road user to avoid an accident. I recommend that steps be taken to prevent stock being stabled close to the crossing on the siding next to the Down line when the crossing is not manned.

34. The above observations are concerned with improvements of detail to the crossing as it is, which can be carried out at once. The traffic over this crossing is such, however, that proper arrangements as for a public level crossing should be made. The crossing appears suitable in all respects for lifting barriers operated remotely from the signal box. If it is found that the obstruction to view of the overbridge stairs and stabled wagons in the loading dock is too great, the crossing could be equipped with closed circuit television. It would be better to position the barriers close to the Up and Down lines, and the Down sidings would have to be slewed slightly to achieve this. I recommend that this scheme be given serious consideration, and I hope that the local and other authorities who have contributed, by their policies, to the growth of road traffic over the crossing will bear in mind that such works are in excess of the Railway's statutory obligations, and will contribute to the cost.

I have the honour to be,

Sir,

Your obedient Servant,

W. P. REED,

Colonel.

The Secretary,

Ministry of Transport.

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