Ministry of Transport,

7, Whitehall Gardens,

London, S.W. 1.

12th October, 1926.

SIR,

I have the honour to report, for the information of the Minister of Transport, in accordance with the Order of the 1st September, the result of my inquiry into the circumstances of an accident which occurred at about 2.38 p.m. on the 30th August at Naworth, on the Newcastle-Carlisle section of the London and North Eastern Railway.

As the 1.18 p.m. down express passenger train, Newcastle to Carlisle, was running through Naworth, it came into disastrous collision with a road motor coach, which had been erroneously permitted to pass over the station level crossing.

I regret to report that seven of the occupants of the vehicle and the gate keeper were killed instantly; one other died shortly afterwards; three, including the motor driver, were seriously injured; and three received minor injuries or shock. In all there were apparently sixteen people in the car.

The vehicle was manufactured by Messrs. Halley Industrial Motors Ltd., and was practically new. It was of the open charabanc type, 26 h.p., accommodating 19 passengers and the driver on 5 transverse seats. It was fitted with pneumatic tyres (double wheels in rear), a V-type wind screen and a collapsible hood, which was lowered at the time of the accident. The overall length of the body was 22 feet, the wheel base 13 feet 6 inches, and the rear overhang 6 feet.

It had passed across the up line, but just failed to clear the down line when the left-hand side of the engine struck it immediately behind the rear wheels, turning it round through an angle of 90 degrees, so that it came to rest on the side of the road alongside and parallel to the down line, facing the direction from which the train approached. The body, except the front seat, was completely wrecked, the rear of the chassis being buckled on the left-hand side, and the cross stretcher, which received the blow, being doubled up and broken.

The train, which was travelling at about 50 miles an hour, was not derailed. The driver was able to pull up in a couple of lengths, the rear of the train coming to a stand 115 yards beyond the crossing. It was drawn by 6-wheeled tender engine No. 1929, type 4—4—0, weighing in working order 91 tons 6 cwt. The only damage sustained affected the left-hand wheel guard, which had to be removed, and the neck of the Westinghouse brake pipe was broken and had to be plugged, the train being delayed 48 minutes. The stock comprised two 6-wheeled vans leading, followed by six 4-wheeled bogie carriages, weighing 176 tons. The train was fitted throughout with the Westinghouse brake operating blocks upon all wheels, except those of the engine bogie.

The weather was fine.

Description.

The Newcastle-upon-Tyne and Carlisle Railway was authorised under an Act of 1829, and from information obtained from the Company's officers, I understand that the road in question is described in the Book of Reference and Deposited Plans as a public carriage road or highway, No. 9, in the Township of Naworth, parish of Brampton. On the section it is described as Kirkhouse Road. The Railway at Naworth was opened on or about 19th July, 1836; the land adjoining the crossing on both sides being purchased from the Earl of Carlisle and Viscount Morpeth by Conveyance dated 2nd May, 1846. Neither the Act nor the Conveyance refers to this particular road.

From the attached plan it will be seen that the road runs in straight alignment southwards to the crossing for about 300 yards from its junction with the main Haltwhistle—Brampton Road, the location of which near Naworth Station is roughly parallel to and north of the railway. The road has a metalled surface in
good condition, maintained by the Brampton Rural District Council, and the gradients from the junction with the main road, to and beyond the crossing, are as follows:

For 200 feet rising 1 in 61.
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Porter (Grade I) W. J. Oliver was in charge of the station and level crossing at the time of this accident. His age was 35½ years and his service with the Company 7 years, of which for a total period of 6 years he had been acting as porter signalman at Edlingham, acting signalman at Alnwick, and again latterly at Edlingham in the former capacity. He became redundant at Edlingham, and was therefore offered and accepted the position he was occupying at Naworth. He took up his duties at 2 p.m. on the 23rd August for the afternoon shift of eight hours on which he worked thereafter daily, except on Sunday the 29th, assuming duty, however, on the 30th an hour earlier.

Prior to joining the Company, Oliver was medically examined and passed physically fit on the 20th August, 1919. He had previously seen active service during the war, and had been wounded in the shoulder. In regard to his railway experience, District Signalmen’s Inspector W. Mather reported that he examined Oliver on the 14th November, 1919, upon the general rules and regulations which included those relating to the working of level crossings, and upon the block regulations both for double and single line. He was said to have passed an excellent examination, being distinctly above the average for his grade, and the Company’s officers stated that he had a good record. In fact, two relief Stationmasters at Edlingham, where Oliver spent most of his service, both report upon his character and work in exceptional terms. Porter Bell, whom he relieved daily at Naworth, also referred to him as a very quiet, conscientious man; and his immediate superior, relief clerk Arnold—who had previously worked at Naworth and is now acting as stationmaster at Brampton Junction, in charge also of Naworth—said he was similarly impressed with Oliver’s carefulness and intelligence, adding that he did not think he was of a nervous disposition.

The duties at Naworth embrace the booking of passengers, parcels, etc., and the daily returns in connection therewith, in addition to general light work at this small station and the operation of the level crossing. Representative average daily traffic (first four months of this year being the pre-strike period) amounts to 14.7 passengers and 1.4 parcels total in and out, and 8 milk cans. In regard to rail movements, there are 14 up and 15 down passenger trains, of which respectively 6 and 5 do not stop; in addition there are in all 13 goods trains, which also do not stop.

A census of road movements for the week ending the 18th September shows that a daily (24 hours) average of approximately 50 motor vehicles, 12 horse-drawn vehicles and 36 cycles, perambulators, etc., passed over the crossing. The traffic, however, between 10 p.m. and 6 a.m. is very light, viz., less than 5 motor vehicles, less than 1 horse-drawn vehicle and 7 cycles, etc. On account of the industrial disturbance and the presence of visitors to the scene of this accident, the user thus indicated was stated to be above normal, which was estimated by Arnold (who had operated the crossing daily from the 1st February to the 1st June this year for 8 hours during daylight) not to exceed 40 movements in the 24 hours. Bell thought that it amounted to perhaps 5 or 6 per hour during daylight and not more than a total of 3 or 4 after dark.

The gates in their normal position are closed across the road, the signals displaying clear indications. No instructions are posted in the porter’s room, but the applicable Regulations are Nos. 119 and 121—vide Appendix. Upon the approach of a road vehicle the custom and primary duty of the man in charge of this station is to leave the booking office and go into the porter’s room to examine the block indicators, and thus ascertain the rail traffic position. If “train on line” is recorded, signifying that the section “Low Row—Brampton” is occupied, the signals should not be returned to danger or the gates opened until the train has passed.

Further, in the case of an express, owing to the short length of the section and to avoid delay, it is the practice to apply this prohibition when the indicators show “line clear”; for example, when a down express is leaving Gilsland, 5½ miles distant, and is approaching Low Row. The only exception to this is when the down line indicator shows “train on line,” and the train does not arrive in the anticipated interval. It is then necessary to telephone from the booking office to the Brampton signalman to ascertain the reason. If shunting is in progress and the “blocking back” signal has been used, the gate keeper is so informed, when he then knows that the crossing may be safely operated.

The gate keeper therefore has to use his judgment, and at the same time some knowledge and experience of the traffic on the line is helpful to him.
Evidence.

(1) Arnold said that he experienced no trouble during the five months of this year when he was operating this crossing. His custom was, as stated above, firstly to examine the indicators, then to place the signals to danger, and finally to open the gates in correct sequence (Rule 121), depending upon the direction in which the road vehicle approached. Moreover, during his service as stationmaster at Brampton, he had never noticed any failure on the part of the other men in this respect. Similarly, he had previously experienced no unauthorised operation of the gates, but since the accident one or two cases had been reported to him, as the result of the abnormal traffic of visitors who were strangers in the neighbourhood. Bell's service at the crossing amounts to 4 years. He generally confirmed Arnold's description of the method of working, but with the exception that his practice during a road movement was always to place himself near the north side gate in order to obtain as good a view as possible of the line. In the case, therefore, of movement from the south (Alston direction), he said his custom was not to operate the gates in the sequence prescribed. In regard to the operation of the indicators, Bell said he had experienced no trouble. They were working properly when he handed over to Oliver at 1 p.m. on the day in question and were in order after the accident.

(2) At 2 p.m. on the 23rd August, when Oliver arrived at the crossing for the first time, Bell instructed him in the first place in regard to the issue of tickets, office accounts, routine, etc., Oliver intimating that he had already carried out booking duties. They then went into the porter's room and to the frame, where Oliver was advised of the distances to Low Row and Brampton, and the running times from each place—1 1/4 to 2 minutes. In accordance with his own practice and the instructions he received 4 years previously, Bell said he told Oliver to keep the gates always closed and to replace the signals to danger before allowing road traffic to pass over the crossing; and in respect of the down line that when a train left Gilsland the indicator showed 'Line Clear,' and when it left Low Row it showed 'Train on Line.' Bell did not, however, actually inform Oliver that the gates were not to be operated when the instrument showed 'train on line,' nor did he in so many words refer to Rules 119 and 121; but as Oliver advised him of his knowledge of the block telegraph, Bell assumed that Oliver was fully conversant with the working, the fact that Oliver had little to say generally giving this impression.

In his supervisory capacity, Arnold arrived from Brampton at 4.24 p.m. on the 23rd August, and returned by the next train at 4.38 p.m., repeating his inspection daily. On the first occasion Arnold, having enquired, was informed by Oliver that he had been instructed by Bell in regard to his duties, and that 'he thought it was a very easy job.' Having regard to Oliver's previous experience of which he was aware, Arnold considered that this assurance was sufficient, conversation in fact in regard to the level crossing itself not lasting longer than a minute, the majority of the time being filled by questions upon office routine, booking duties, daily returns, etc.

As the following account will show, it is doubtful whether Oliver can have really been seized with the importance of strict compliance with Regulations, and of the necessity for performing the operations at this crossing in their proper sequence. But, having regard to the foregoing evidence, and Oliver's past experience and training, there appears to be no reason for thinking that Arnold and Bell were not justified in assuming that he was fully cognisant of his duties. In fact Arnold, on one of his visits, actually saw Oliver open the gates in their proper order for a movement from the direction of the main road.

(3) The last train on the up road was the 12.32 p.m. passenger from Carlisle which stopped at Naworth at 1.9 p.m. After this the 'blocking back' signal was used on the down road at 2.5 p.m. in respect of a shunt movement at Brampton relating to a following up passenger train, which terminated there and returned to Carlisle, the 'blocking back' signal being cleared at 2.14 p.m. A daily goods train, which usually passes just in front of the express, was then offered at this time on the down road, passing Low Row at 2.24 p.m., Naworth at about 2.29 p.m., and being cleared at Brampton at 2.33 p.m. At the last named time the express was accepted, and it passed Low Row at 2.35 p.m., on time, travelling at its usual speed.
Driver J. W. Embleton was in charge. His service is 37 years, for the last 13½ of which he has constantly driven between Newcastle and Carlisle. He stated that the brake was in good order. The last stop was at Gilsland, the train leaving there half a minute late according to his watch. The run to Scotby, 14 miles, the next stop, is booked in 21 minutes, and Embleton stated that Naworth was approached at the usual speed of 45 to 50 miles an hour, probably nearer the latter. He observed the distant signal in the clear position; also the home, of which he obtained a good view, and he whistled as usual when passing under the road bridge 560 yards from the crossing. He was about to close the regulator in accordance with custom, and the engine was nearing the tree (shown on plan) at the end of the waiting room on the down platform, when, from his position on the right-hand side of the footplate (outside of the curve), he observed the rear of the motor coach in a position roughly opposite the right-hand buffer and less than 25 yards away. He did not in fact have time to close the regulator, but applied the brake and reversed the engine, pulling up as already described. He did not have time to see whether the car was moving or not.

Fireman A. Kennedy confirmed his driver's evidence in regard to the clear position of the signals and the speed of the train. He did not actually see the car as he was engaged at the moment with footplate duties. When the train came to a stand he got down and walked towards the crossing, observing the up line signals also in the clear position. He met guard Atkinson and accompanied him at once to the crossing. After ascertaining from a child in the stationmaster's house where the telephone was, they broke open the booking office door (the key of which according to custom was retained by Oliver and was subsequently found on him), Atkinson telephoning to Brampton, and Kennedy going to the frame and replacing all signals to danger. Atkinson stated that they were somewhat delayed by a hysterical lady, but the message was transmitted within two or three minutes of the accident happening, Arnold at Brampton hearing of it at once and advising Dr. Arnott, who, with commendable promptitude, was able to reach the scene before 3 p.m.

(4) The motor coach was being driven by W. W. F. Lamb, aged 22; and a youth, Nathan Green, aged 16, was occupying the front seat on Lamb's right. On the front seat also there was a lady, who received minor injuries and was seated on Lamb's left. Mr. Maddison, who was killed, occupied the outside seat on this lady's left, and Mr. G. H. Stoker, who gave evidence, was sitting on the second seat immediately behind Green.

The coach was owned by Mr. Sowerby, in whose service Lamb has been employed for 2 years, his total driving experience of such vehicles amounting to a stated period of about 5 years. He said that the car was in good running order, and Mr. N. H. Martin, motor engineer, who subsequently examined it, confirmed this, its mileage to the date of the accident being 5,651. Mr. Martin found the car in third gear and the brakes fully applied. Though possible, he thought it unlikely that the gear would have shifted as the result of the collision, and the position of the brakes was clearly caused by the twisted state of the chassis.

Lamb knew this crossing well, and, so far as his experience went, irregularities in the method of operation by the attendant, such as the leaving of the gates open, had not previously occurred, though he had not paid particular attention to the sequence of the operation of the gates, or noticed whether the signals were returned to danger. He invariably carried a passenger in the seat on his right when the car was full. Green on this occasion being apparently privileged and travelling at reduced fare, as he had done on previous occasions when also occupying the same seat. Lamb was not teaching Green to drive, nor allowing him to handle the car, but Green (with his left hand) was being permitted to operate the horn, which was situated between them.

The evidence of both men, the principal witnesses in this case, in regard to the circumstances of the collision, was perfectly frank, and in giving all the information they could, so far as memory served them, I am satisfied that their accounts were substantially correct.

Lamb said that he left Gilsland on this occasion at about the usual hour, soon after 2 p.m., and he was not pressed for time. He passed round the turning leading from the main road towards the crossing at 10 to 12 miles an hour, Green blowing the horn "a large number of times" both before and after turning the corner. "This was our usual procedure, first to sound the horn at the corner and
again to get the level crossing gates opened." Lamb said he dropped to third gear after passing round the corner and did not change again, the car being subsequently found in this gear, as already stated. He did not notice from which side of the crossing Oliver came, but he saw him open the near gate, which he had just previously observed in the closed position, the car he thought then being “nearer the turn in the main road than half-way to the gate,” the distance between the turn and the gate being 286 yards. His speed was then about 10 miles an hour. Lamb saw Oliver walk across to the far gate, open it, and then wave with his left hand from the position in which he stood alongside the gate, the approaching train being completely screened from his view. The car at that moment was about 7 yards from the near side gate and travelling at walking pace, the result of brake application. It passed through the gate at this speed and on to the crossing, Lamb first glancing to the right and then to the left, when he observed the on-coming train. He had time to depress the accelerator pedal in an attempt to get clear. He did not notice whether Oliver looked in either direction when walking from the near to the far gate. Lamb knew him by his uniform, and saw no one else at the crossing. His statement was very definite in regard to the speed of the car at the time, and the fact that it did not come to a stand on the crossing.

Green generally confirmed this evidence, the important addition being that he saw Oliver “come down from the right from the booking office,” the principal variations being that in his opinion the near gate was opened when the car was about half-way between the turning and the crossing, estimated at 100 yards, and that when Oliver waved from the far side of the crossing the front of the car was just entering the near side gate.

Mr. Stoker was not able to give very much information, but he could confirm definitely the evidence that the car did not come to a stand on the crossing; nor was Lamb allowing Green to handle it, except in respect of the operation of the horn.

(5) As being closely allied to this case, it should be added that evidence was forthcoming from R. H. Wright, another driver in the employ of Mr. Sowerby, and from Mr. J. C. Hall, school master, Gilsland, relating to the passage of two cars over this crossing, proceeding to Alston at about 4 p.m. on the 28th June last. The first car was driven by Wright and carried 8 school children, the second car following at a distance of about 25 yards and driven by Mr. Hall. Wright stated that he found the gates open, and he was waved on by the gate keeper, who came from the direction of the booking office, the signals for both roads being clear at the time. As Wright got on to the crossing he saw a down train approaching and was just able to avoid it. In doing so both Wright and the gate keeper waved to Mr. Hall, who stopped in time, the train passing between the two cars. Neither could recognise the gate keeper again, and it is to be regretted that the matter was not reported to the Company at the time.

District relief porter Frost, service 11 years and age 36 years, was in charge on the 28th June, and denied very definitely all recollection of any such occurrence. He admitted, however, that he did not make an invariable practice of replacing the signals to danger when operating the gates, if the indicators were in the “line blocked” position. His evidence did not impress me, and there is no substantial reason, I think, for doubting the general accuracy of the accounts given by Wright and Mr. Hall of what can only be described as a providential escape.

Conclusion.

Assuming that Oliver’s movements were normal and in no way hurried, as was stated to be the case, it is roughly estimated that, after leaving the booking office, he took some 30 seconds to open the near gate, walking 20 yards, to pass over the crossing about the same distance, and to open the far gate, in which position he waved to the car, then stated to have been travelling at 5 miles an hour in a position about 7 yards from the near gate. It therefore took some 9 seconds for the car to traverse the remaining 23 yards to the point of collision, and the previous 21 seconds had been taken up in travelling 77 yards, speed according to Lamb’s evidence being in this time reduced from 10 to 5 miles an hour.

This places the car at a point 84 yards from the near gate when Oliver left the booking office, a figure corresponding fairly well with the evidence of Green, who was the only person to observe Oliver’s movements towards the gate. Lamb was of
opinion that this gate was opened a little earlier; but making allowances for such estimates and calculations, it generally seems likely that the train was perhaps no more than 700 and 200 yards from the point of collision, and the car roughly 100 and 20 yards, when Oliver respectively left the booking office and waved from the south side of the crossing.

There is in fact no doubt that the train had passed the distant signal and was approaching the home when Oliver opened the near gate, and no blame of any kind can be attached to either driver J. W. Embleton or W. W. F. Lamb, both of whom appear to have been on the look-out, and promptly took such action as was possible.

I am satisfied that porter W. J. Oliver was solely responsible for this regrettable accident. He failed to carry out three simple common-sense and important duties, which for a man of his character and experience is no less surprising than unsatisfactory. That he placed himself, however, in such a position that he was killed as the result of his own misguided actions, fully demonstrates his innocence of any idea that risk was being run.

In the first place Oliver evidently failed to proceed from the booking office to the porter's room, a distance of 28 yards, for the purpose of observing his indicators; secondly, he failed to place his signals to danger; and thirdly, he failed to operate the gates in the sequence which would have involved two journeys of 20 yards over the crossing, instead of the one made. The proper operations should have occupied perhaps double the time which was actually taken. In addition, of course, in closing the gates again afterwards, two further journeys would have been necessary instead of the one intended.

Had he performed his primary obligation the accident would not have occurred, as he would have taken no action until the train had passed. Failing that, performance of the second duty would have resulted in the home signal being replaced in front of the train, and, though this would have taken Embleton by surprise, at least it may have been the means of earlier action on his part, thus possibly enabling the car to have got clear before the train passed over the crossing. Failing both, the proper performance of the last duty alone would probably have delayed the car at the near gate sufficiently long to have permitted the train to pass.

It may therefore be held that the equipment here is sufficient in the hands of a man who obeys instructions. But there is no safeguard against human failure such as occurred on this occasion, and may equally occur in the future where similar arrangements exist. Besides forgetfulness and thoughtless lack of care, factors such as the performance of station and clerical duties, light though they may be, and the persistent blowing of motor horns "to get the level crossing gates open," have presumably a psychological effect, distracting attention and tending to hasty action.

Remarks and Recommendations.

The line between Newcastle and Carlisle was authorised and constructed when railways were in their infancy, antecedent to any powers possessed by the Board of Trade with regard to inspection; and the special and relevant subsequent general Acts, to which my attention has been drawn, appear to be difficult to interpret in respect of the protection, which the Company is under statutory obligation to provide, at public road level crossings such as Naworth. However, the requirements relating to new construction are well known. For more than 50 years it has been considered necessary to call for gates at such crossings to close across the railway during the passage of road traffic: and, when opened for the passage of trains, to close across the road, their normal position on important lines. Interlocking of signals—where they have been provided to afford additional protection—has also been required for more than 40 years, since when continuous and detailed improvement in respect of both these main principles has resulted in the efficient equipment and operation of the majority of public road crossings of the present day.

Briefly, the former condition enables enginemen to obtain a better view of the crossing—in spite of curvature and with or without signals—than they otherwise would if the gates opened away from the line when the crossing is in use for road traffic. And the latter provision, while ensuring that the gates are in their correct position in relation to the aspect of the signals, acts as an important check upon the mistake, which the gate keeper might otherwise make, of opening the gates with signals in the clear position. Porter Frost's admission in this respect is significant.
Irregular discrimination also, as adopted by Bell, in respect of the sequence of gate movement by hand, is obviated where simultaneous operation is effected mechanically.

Notwithstanding, therefore, past freedom from accident, I am of opinion that, having regard to the nature of the road and rail traffic, the other duties devolving upon the gateman, and the general situation of this crossing, its equipment should be brought into line with modern practice, the gates closing in sympathy alternately across the road and the railway—their normal position being the former—with signals suitably interlocked.

It is true that even then, particularly at a crossing such as this between block posts, liability to accident may still remain due to the operation of the gates after a train has passed the signals, if the gate keeper has omitted to observe the indicators, which are provided to warn him of the state of occupation of the line. But this can be reasonably safeguarded by the bringing together in one cabin of the whole of the apparatus. In all the circumstances, therefore, of this case and of that in June last, and having regard to the desire to maintain gates across the railway at this crossing during certain periods, I hope that the Company will take steps to improve the protective arrangements in the manner indicated. At the same time, on merits, having regard to the limited view, the length of the section on either side, and the fact that the man in charge has other duties to perform, this seems to me to be a crossing in respect of which consideration might well be given to the installation of track circuit or other device for the operation of a warning gong, or, alternatively, to the use of a bell code by the gate keeper for obtaining definite permission from the signalmen on either side to open the gates for road traffic.

Finally, though it may have had no immediate bearing upon the accident itself, I would call attention to the objectionable arrangement which permits of the occupation by a passenger of the front seat of a motor coach on the driver's right hand; also to the unnecessary extent to which apparently the horn was operated on this occasion, in itself an undesirable, and not I fear uncommon, practice when approaching railway level crossings.

I have the honour to be, Sir,

Your obedient Servant,

A. H. L. MOUNT,
Lieut.-Colonel.

The Secretary,
Ministry of Transport.

APPENDIX.

GENERAL RULE 119 (a). When it is necessary for the line to be crossed at a place which is not a Block Signal post, the Crossing keeper must, before opening the gates, satisfy himself that no train is near; he must then place his Fixed Signals (where provided) at Danger to stop all coming trains, and such signals must remain at Danger until the line is clear, when he must close the Gates across the roadway and then take off the signals.

GENERAL RULE 121. Except at Level Crossings where the Gates on both sides of the line are opened simultaneously, the gate towards which road vehicles, cattle, horses or other animals are approaching must not be opened until the opposite gate has been first opened, so as to allow them to cross over without stopping upon the line.