



MINISTRY OF TRANSPORT AND CIVIL AVIATION

RAILWAY ACCIDENTS

REPORT ON THE COLLISION

which occurred on

8th March 1958

at

CHINLEY

in the

LONDON MIDLAND REGION

BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE

1958

PRICE THREE SHILLINGS NET

1st August 1958.

SIR,

I have the honour to report for the information of the Minister of Transport and Civil Aviation, in accordance with the Order dated 14th March 1958, the result of my Inquiry into the collision between two passenger trains, which occurred at about 9.25 p.m. on Saturday, 8th March 1958, at Chinley, in the Midland Division of the London Midland Region, British Railways.

The 5.15 p.m. express excursion train, Luton to Manchester Central, was wrongly admitted under clear signals on the Down Fast line into Chinley station where it ran into the 7.10 p.m. passenger train, Derby to Manchester Central, which was standing at the platform. The speed at impact was not high, about 30 to 35 m.p.h., as the excursion train had been checked on the approach to Chinley, and the driver also was able to see the train in front in time to apply the brake, but the rear coach of the stationary train was penetrated for nearly half of its length by the engine of the excursion train. Fortunately there were no passengers in the more seriously damaged part of this coach, and of the total of 6 passengers in this train and 90 in the excursion train, only 8 required treatment. All were discharged from hospital within a few days.

There was a severe frost on the night of the accident which caused the semaphore home signal concerned to remain in the clear position when the lever was replaced after the passage of the first of these two trains. This failure was not detected by the signalman until it was too late to stop the second train, as he had omitted to carry out the routine duty of looking for the back light of the signal to see that it had correctly returned to danger when he put back the lever in the frame. The distant signal for the box ahead, which was on the same post below the home signal, was also in the clear position as that signalman had failed to replace the lever.

The Up and Down Fast lines were blocked but there was little delay to rail traffic, which was diverted over the Slow lines through the station. The emergency services were called promptly, and doctors and ambulances were on the scene within 25 minutes of the occurrence.

The weather was fine and clear, though very cold, and there was snow on the ground.

#### DESCRIPTION

##### *The trains*

1. The excursion train comprised 10 coaches weighing 289 tons, drawn by a Class 6 tender engine with 4-6-0 wheel arrangement and weighing 120 tons. The length of the train over buffers was 667 ft. and the braking power 72% of the total weight of 409 tons. The front buffer beam of the engine was distorted by the collision and the supporting brackets destroyed, the main frame was bent, and the left hand cylinder valve motion was damaged. There was no damage to the first two coaches and only seat displacement in the remaining ones, except the fifth and sixth coaches which were buffer-locked. The sixth coach was a cafeteria car weighing rather less than the other vehicles and this may have accounted in part for its buffers over-riding those of the one in front.

2. The 7.10 p.m. passenger train consisted of 5 coaches weighing 150 tons, drawn by a Class 5 tender engine with 4-6-0 wheel arrangement weighing about 110 tons. The brakes were applied when the collision occurred. The train was pushed forward about 50 yards and the last coach was penetrated by the engine of the excursion train for nearly half its length. This coach was of steel panel construction on wood framing above a steel underframe which was opened outwards by the force of the collision; the rear bogie was displaced 20 ft. forward. The front part of the coach was also severely damaged and buffer-locked with the coach in front where all the seats were displaced and some windows broken. The damage in the three leading coaches was slight.

##### *The line and signalling*

3. The plan shows the general arrangement of the tracks through Chinley station, and the relevant signals. The gradient is falling steeply at 1 in 90 towards Chinley in the Down direction, in which the trains were running, but it eases to 1 in 220 through the station. There are three signal boxes to which reference will be made in the report; they are Chinley North Junction signal box about 1 mile in the Up direction from Chinley station, where the routes from Derby and Sheffield converge to form the 4-track route through Chinley, Chinley Station South Junction signal box at the Up end of the station, and Chinley Station North Junction signal box 346 yards away at the Down end of the station. The collision occurred near the middle of the station about 140 yards beyond Chinley Station South box. I propose to refer to these signal boxes as Chinley Junction, Chinley South, and Chinley North boxes respectively. The boxes are of usual construction, mainly wood, with an elevated working floor and an illuminated diagram above the lever frame.

4. The Down Fast distant signal for Chinley South box is about 1,000 yards from the home signals and under the starting signal for Chinley Junction. The two home signals at Chinley South box for the

Down Fast line lead, one along the main line past No. 5 platform in Chinley station which was the route followed by both trains, and the other via points No. 17 to the loop past No. 6 platform. They are upper quadrant semaphores and are placed fairly high on a bracketted post so that they are in good view above a road overbridge from the signal box which is about 200 yards away. There is a sodium vapour street lamp at one end of the overbridge, which is alight from dusk until about 11 p.m., and which gives sufficient light for the signalman to see the arms of these signals at night if he looks with care. The back lights on the signals can also be seen clearly from the box except, of course, in fog.

5. Underneath the two home signals there are the distant signals worked from Chinley North box; these are slotted with the home signals. There is also a subsidiary signal on the bracket post for the loop line.

6. Chinley South home signals are also the section signals for the short section between that box and Chinley North, and the levers are interlocked, as is normal, with No. 17 points lever. There is also mechanical detection between the signals and the points, and the run of the wires from the box to the signals is across the tracks to the far side of the Down Fast line and then parallel to this line so as to pass through the detector for the points. The wires then return under the tracks and run along the cess to a point opposite the home signals where they cross the lines once again to the signal post. The electric locks on the levers for these signals are released only when the appropriate track circuits between them and Chinley North box are clear, and they are also controlled by Line Clear (one pull) from Chinley North box.

7. Ordinary, pegger type, block instruments are in use between the South and North boxes, but the section between Chinley Junction and Chinley South box is controlled by block instruments of the Midland Rotary type. The commutator of this instrument can only be turned clockwise in normal operation to give the indications Line Clear, Train on Line, Line Blocked, in sequence, though provision is made for reversing the movement from Line Clear to Line Blocked through a co-acting release mechanism. The commutator is held, when in the Train on Line position, until a treadle has been operated at the forward end of the section to complete the release circuit so that it can then be turned to Line Blocked. A plunger is provided behind glass to lift the Train on Line lock armature mechanically in case of failure. There is further provision for a limited reverse rotation from the Line Blocked position into the Train on Line sector when this is required in order to block back within the home signal (the B.B.I. position). The commutator is not locked when in this position and can be restored at any time to Line Blocked. Full block controls are provided so that Chinley Junction starting signal is released for one pull only by Line Clear, and the home signal levers at Chinley South must be normal in the frame and the distant signal arms at caution, before Line Clear can be given. The danger position of the home signal arms, however, is not proved in the block circuits as the signals, or their back lights at night, are easily visible from the signal box.

8. The usual conditions of acceptance for Down trains apply at Chinley South box, so that the line must be clear for  $\frac{1}{4}$  mile ahead of the home signal before a train may be allowed to approach from the box in rear. When a train is at No. 5 platform this condition of acceptance for a following train on the Down Fast line is met when points No. 17 are set for No. 6 platform line, providing that line is clear for  $\frac{1}{4}$  mile ahead of the home signals.

9. The permanent way is partly 109 lbs. flat bottom and partly 90 lbs. bull head material on wood sleepers. There is a detonator placer of obsolescent type a few yards on the approach side of No. 17 points.

10. The tracks are in cutting at Chinley South Down home signals where the road bridge passes over the line, and the formation changes to side cutting towards Chinley South box, with a steep slope, partly revetted, behind the signal box. The soil is clay and the formation gives much trouble; the ballast had been thoroughly cleaned about a year previously but at the time of the accident there was much clay in it which had worked up above sleeper level in places. The signal wires were partly buried in dirty ballast at one or two places where they crossed the tracks near points No. 17.

#### REPORT

11. Driver J. J. McLevey of the 7.10 p.m. passenger train said that when he passed the starting signal for Chinley Junction on the Down Fast line, he saw the distant signal for Chinley South box below it at caution; the next signal, Chinley South home, was "off" and the distant signal for Chinley North box below it on the same post, was also in the clear position. He stopped the train at the forward end of No. 5 platform in order to take water but misjudged the braking and had to draw forward after station work was completed and he had received permission to move the train. He had already applied the brake at the water column when he heard the express whistling; he told his fireman to jump clear but did not do so himself, and he did not have time to release the brake before the collision. He said that the effect was a quick surge forward which moved his engine about 50 yards. He went immediately to Chinley North signal box to make sure that the adjacent Up Fast line was being protected and then went to the rear of the train to render assistance.

12. Guard A. T. Key of the passenger train said that the arrival at Chinley at 9.19 p.m. was 20 minutes late. He was on the platform when he heard the whistle of the express train and saw it approaching, but he did not have time to take any warning action. After the collision he spoke to his driver and then went to the rear to make sure that protection had been carried out; he later returned to the platform to attend to the passengers.

13. Passed Fireman A. Sanders was driving the 5.15 p.m. express excursion train. He said that the train was a few minutes late, mainly due to delay in getting water on the journey at a column which had been frozen. The visibility was good and he saw the starting signal for Chinley Junction clearly; it was "off" with the distant signal below it at caution. He said that he brought down the speed of his train to about 20 m.p.h. before he saw the Chinley South home signal with the distant for Chinley North below it, both in the clear position. He then opened the regulator, but only a little because of the steep falling gradient, and thought that the speed must have increased to about 30 m.p.h. before he saw the tail lamp of the train ahead as his engine was nearing the platform. He sounded the whistle and made a full application of the brake which was in proper working order, but thought that it did not have time to take effect before the collision. Neither he nor his fireman was badly hurt and he sent the fireman to the rear to protect the train while he attended to the engine. Sanders explained that he was unable to see the tail lamp of the train in front earlier because it was well down the platform and the line is on a left handed curve so that the station structures might have obscured it.

14. The fireman, Passed Cleaner C. P. Grant, confirmed Sanders' evidence except that he thought the speed of the train to have been greater than Sanders had estimated. He said that a little coal fell on him from the tender but he was able to run to the rear of the train and arrange with the guard to carry out protection.

15. Signalman S. Norris was on duty in Chinley South box on the night of the accident until 9.5 p.m. when he handed over to Signalman J. Shirt. The normal hours of duty on the afternoon shift are from 2 p.m. to 10 p.m. but the signalmen are permitted to advance them by 1 hour on Saturday afternoons by agreement. Norris said that it was very cold during his spell of duty and that towards 6 p.m. he experienced trouble in working certain of the points and signals. He was unable to pull off the Down Fast line home signal and went to No. 17 points to ease the signal detector slide, and this seemed to cure the trouble. He also sent a message for the lineman at 6.41 p.m. but did not get a response. He was using the signal frequently thereafter and it worked satisfactorily; there was no delay in its movement to danger when he restored the lever. He said that he mentioned the difficulty with the signal to Shirt but did not mention another difficulty he had had with a shunt signal leading over No. 17 points. He also admitted that he had failed to test the detonator placer at No. 17 points as he should have done during his term of duty especially when the weather was freezing.

16. Norris's house is close to the station; he heard the noise of the collision a few minutes after arriving home and returned at once to the signal box where he found all the block instruments showing Train on Line and the detonator lever in the pulled position. There was other evidence to the effect that the commutator handle of the Down Fast rotary block instrument was seen to be in the B.B.I. position some time later, but Norris said that he did not notice the position of the handle when he returned to the box, only the position of the pointer. He also did not notice whether the glasses over the Down line plungers were broken when he returned to the box, though they were reported to be broken by the lineman when he arrived at the box two hours later. Norris saw that the home signal arm was at danger, but he said that he assumed that it must have stuck previously in the "off" position to have caused the collision; he did not however discuss the matter with Shirt. Norris remained in the box to help in signalling work.

17. Signalman J. Shirt said that Norris had spoken about trouble with the levers when he took over but had not mentioned the home signal lever. There were no trains signalled when he took charge and the first train he had to deal with was the 7.10 p.m. passenger which he accepted at 9.9 p.m., offering it to Chinley North box at the same time. He said that when he pulled the Down Fast home signal lever he could tell by the feel that the chain was off the pulley under the box; he restored the lever and replaced the chain, and pulled the lever again after getting a second Line Clear from Chinley North box. He then noticed that the distant signal for Chinley North box beneath his home signal had also been cleared. After the passenger train passed he restored the signal lever; he said that he noted that the weight bar repeater for his distant signal, which he had not operated, was in the "on" position but he did not look for the back light of the home signal.

18. After he had given Train out of Section to Chinley Junction at 9.19 p.m. and was making the entry in the Block Register he was offered the express excursion train and accepted it at the same recorded time of 9.19 p.m. He had however failed to reverse No. 17 points, which he was required to do before accepting the second train as the one in front was still in the station within the overlap of the Down Fast home signal, and he admitted that he generally gave Line Clear on occasions such as this before setting the points for the loop. When he attempted to reverse the points he found that they would not move; he tried to free them by shaking the lever until he received the Train entering Section message from Chinley Junction at 9.21 p.m. (The times quoted are those recorded in Chinley South box register; they vary in both cases by three minutes from those recorded in Chinley Junction but the interval of two minutes between the Line Clear and Train Entering Section is the same in both boxes.) Shirt then looked at the signal and saw that it had not gone back to danger, realizing at once that the signal detection slide was holding the points. Continuing his evidence, he said:

"I immediately took up the detonators and at the same time gave Chinley Station North two beats on the Loop block bell and told him to put his Distant back. He did not answer it, and I could hear a train coming and I rang him again on the Fast line bell and gave him the 'Obstruction danger' signal, six beats, which he answered. I rang him two beats and by then the train was coming under the bridge. I took hold of a hand lamp, turned it to red, took hold of some detonators and went outside to get something on the line, but before I could do so the train had passed."

19. Shirt also said that he pulled the detonator placer lever before the train reached the points and it seemed to work normally. In fact, however, the detonator placer machine, which is wire operated, was frozen and did not respond. After the accident Shirt carried out the protection of the line and arranged with Control for the relief services.

20. Shirt had not noticed whether the glasses above the Down release plungers were intact as he had only been in the box a few minutes before the collision took place; he had had no occasion to use the plungers during the previous three weeks. Furthermore, he said that he had never used the B.B.I. position on the block instrument commutator while he had been at the box.

21. Shirt was further questioned on the reasons for his improper practice of working but had no explanation to offer. He is a class 2 signaller with 25 years' railway service and has been in this box for 10 years.

22. Signaller F. Coupland was nearing the end of his term of duty at Chinley North box in accordance with the normal rostered hours of duty of 2 p.m. to 10 p.m. He said that he had had trouble in pulling his signals off, due to the frost, but when asked if he had sent for the lineman he replied: "No, because it is understood when the weather is bad you have to reverse the signals and then pull hard, and when the signal does not go back you free the wires until eventually it does." He said that there had been no total failure of points or signals. When he was offered the 7.10 p.m. passenger train at 9.9. p.m., he obtained Line Clear for it from the signal box ahead without delay and pulled off his signals including the Down distant signal (the one under South box home signal). He did not remember Shirt cancelling Line Clear and obtaining it again from him but agreed that he might have done so. He booked the Train Entering Section signal at 9.18 p.m. (9.19 p.m. according to Chinley South box) and the train arrived at the platform at 9.19 p.m. He did not, however, replace the distant signal lever in the frame. He said that it was not his habit to replace that lever until he replaced all the Down signal levers after the train had passed, partly because freight trains sometimes stopped at the station to change crews, with the rear of the train outside the distant signal, and partly because the lever in his box only operated the weight bar for the signal which was linked with the South box home signal above it so that it would return to caution when that signal was placed at danger. He also tried to excuse himself by saying that his box was closed for a part of Sundays and that all running signal levers were then kept in the operated position.

23. Coupland said that he heard the "attend telephone" bell code from Shirt and lifted the telephone to hear him say "Slap back the back 'un"; at the same time he heard the sound of the second train and immediately restored all his signal levers in order to reverse the exit points from the loop, thinking that the train had run by signals into the loop and that it might not stop before it came to his end of it. He was satisfied that the weight bar repeater for his distant lever went back to the normal position when he replaced the lever in the frame. Before he could get the points over, however, he received the Obstruction Danger bell message from Chinley South box and heard the noise of the collision. He then carried out the proper action for protecting the Up lines, which included operating the detonator placer on the Up Fast line. He was sure that it worked correctly as it was of modern type, rod operated. Coupland is a Class 3 signaller and has been in Chinley North box for over 9 years.

24. Telegraph Lineman J. J. Molesworth arrived at Chinley South signal box two hours after the accident and made such tests as were possible with the trains occupying the track circuits, and found the electrical gear in order. He noted, however, that the glass over each of the release plungers for the two Down lines was broken and that the commutator handle for the Down Fast line was in the B.B.I. position. Molesworth was joined an hour later by Telegraph Inspector V. L. Brownhall who carried out a complete test of all the electrical equipment during the course of the next morning after the lines had been cleared. Mr. Brownhall confirmed that the equipment was in proper order throughout.

25. Signal Inspector A. H. Kershaw made complete tests during the night and on the next morning of the mechanical part of the signalling. He noted that the detonator machine failed to operate fully when the lever was pulled, until it had been thawed, and he also found the place where the ice-encrusted signal wire was held in the ballast. He was able to reproduce this fault during the next morning when the signal was free for testing after the line had been cleared, as it was still freezing hard. The pull exerted on the wire when the lever was operated was sufficient to draw it through the frozen ballast, but when the lever was replaced the pull exerted by the weights at the signal was insufficient to move the wire in the opposite direction. When the ballast had been cleared the wire ran freely and the signal responded properly to the movements of the lever. There was no other fault in the signalling. Mr. Kershaw had not received reports of previous trouble of this sort at Chinley during the past four years that he had been in charge of the district.

26. District Signalmen's Inspector H. S. Lambert, who arrived in the box about an hour after the accident, said that he saw the Down Fast line Block commutator handle in the Train on Line position.

He did not see, however, whether the glasses were broken. He said that he had no suspicion that Shirt had been breaking the rules in block working, and he thought that it would be very difficult to detect such a misdemeanour unless the signalman committed one while he was being watched.

27. District Signalmen's Inspector A. T. Casey, who had been on the district for three years until his transfer four months previously, said that he had never found the signalmen breaking any of the principal regulations, though he had found minor discrepancies from time to time which he had pointed out to them. He had not made any comparison of Block Registers at Chinley, and he said that the comparisons which he had made at other boxes in his district were in order to find out the reasons for train delays, and not as a check on the recording of block messages. Station Master E. W. Pritchard, however, who has been at Chinley for the past eight years, said that he had noticed irregularities in the working of Shirt and Coupland in the past and had reported them; he knew that disciplinary action had been taken and he said also that arrangements had been made so that the two men should not be at their respective boxes during the same shift. Mr. Pritchard had found it necessary to be very strict in the supervision of these signal boxes. He was absent from duty at the time of the accident as he had broken his arm a few days before, and did not therefore take any part in the subsequent investigations.

#### CONCLUSIONS

28. Passed Fireman Sanders, in charge of the express excursion train, was in no way to blame for the accident. He had every right, from the signal indications which he saw, to expect a clear line ahead of him, and I am satisfied that he was fully alert. The speed of his train was not excessive and he lost no time in applying the brake when he saw the tail lamp of the train ahead of him.

29. There is no doubt that responsibility for the collision rests primarily on Signalman Shirt. He failed to see that the home signal had returned to danger when he replaced the lever, a duty which should be instinctive in a responsible signalman, and he then knowingly contravened the Block Regulations by accepting the express train without having set the points in order to obtain a clear overlap beyond the home signal. He admitted that he had been in the habit of breaking this regulation though he would give no reason for it, and I can only conclude that he lacks a proper sense of responsibility and is not therefore fit to be entrusted with the duties of a signalman. I am informed that Shirt left the Railway service after this accident.

30. Signalman Coupland's failure to return his distant signal lever to the frame as soon as the 7.10 p.m. passenger train arrived undoubtedly contributed to the accident. If he had replaced it promptly the driver of the express excursion train would have seen the distant signal at caution and would have applied the brake in order to stop at the signal ahead even if the home signal above the distant had remained stuck in the off position, instead of increasing speed as he did when he saw both signals at clear. Signalman Coupland is therefore also responsible for the accident to a degree; furthermore, his method of working in Chinley North box, as described by himself, is reprehensible.

31. The conflict of evidence about whether the commutator handle of the Down Fast line block instrument was in the B.B.I. position was not resolved, nor was it clear why or when the glasses over the Down line plungers were broken. I am satisfied, however, that neither of these matters influenced the wrong actions which led to the collision.

32. The failure of the detonator machine did not materially affect the accident as the express train driver saw the train ahead very soon after he had passed over it. In this exposed locality, however, it is necessary to have the best equipment, and the machine is to be replaced by one of the modern, rod-operated types which are not liable to failure through frost.

#### REMARKS

33. The dangerous situation which gave rise to the accident would not have occurred if the arm of the home signal had been proved in the Block between Chinley South and Chinley Junction, as well as the lever. It is not the custom, however, to do this when a home signal is easily visible from the box, and there are no unusual circumstances here which make it specially advisable that it should be done. The failure to keep the signal wires free from contact with the rising clay also contributed to the accident, and I have no doubt that closer attention will be given to this aspect of maintenance work in future.

34. It is somewhat disturbing that the irregular methods employed by the two signalmen had not come to the notice of the District Signalmen's Inspector. Both men admitted that they had been accustomed to working without due regard to the Regulations, and it was clear that their shortcomings in certain respects had been brought to light in the past, both from the evidence of Mr. Pritchard who appears to have shown a very proper sense of duty in what must have been at times an unpleasant task of supervision over the years, and from a number of entries in their records of service. I am surprised, therefore, that the District Signalmen's Inspectors, whose duties are specially concerned with the supervision of working by signalmen and who must have known that these two men were not altogether reliable, did not keep a closer check on their work. This they could have done by comparing the Register of each box for

the signalman concerned with those of the boxes on either side. Such a comparison, made at my request in these three signal boxes for the week previous to the accident, for the 10.0 p.m. to 6.0 a.m. shift on which Shirt was employed, showed a considerable number of discrepancies in booking, most of which were attributable to the South box, which would have given sufficient grounds for a more rigorous examination of the working here. It is more than likely, if comparisons had been made in the past, that a number of discrepancies would have come to light which would have warranted corrective action being taken.

35. The value of the cross-check on Registers was mentioned in the Report on the collision at Irk Valley Junction which occurred on 15th August, 1953, and again emphasised in the Report on the collision at Newlay and Horsforth which occurred on the 22nd November, 1956, and on both occasions the British Transport Commission drew attention to the importance of it as a means of supervising the work of signalmen. I have no doubt that Inspectors are busy men, and it may be that they find it difficult to make time for the cross-checking of Block Registers. This work is valuable, however, as a means of checking repeated slack working by the few careless signalmen, and I am glad to report that instructions have now been issued in the London Midland Region for a cross-check of Block Registers to be carried out twice a year, either by District Signalmen's Inspectors or by Station Masters.

I have the honour to be,

Sir,

Your obedient Servant,

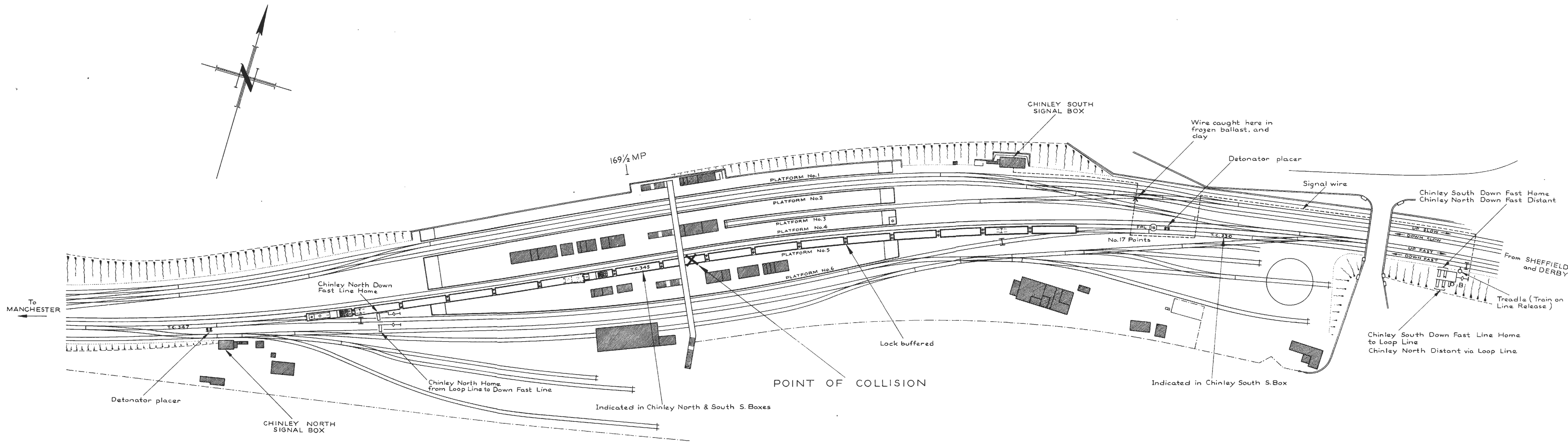
W. P. REED,

*Colonel.*

The Secretary,  
Ministry of Transport and Civil Aviation.

# COLLISION AT CHINLEY STATION

8th. MARCH, 1958



SCALE: 80 FEET TO 1 INCH

