MINISTRY OF TRANSPORT

RAILWAY ACCIDENTS

REPORT ON THE COLLISION

which occurred on

4th November 1959

at

WEST SLEEKBURN

in the

NORTH EASTERN REGION

BRITISH RAILWAYS

LONDON: HER MAJESTY'S STATIONERY OFFICE

1960

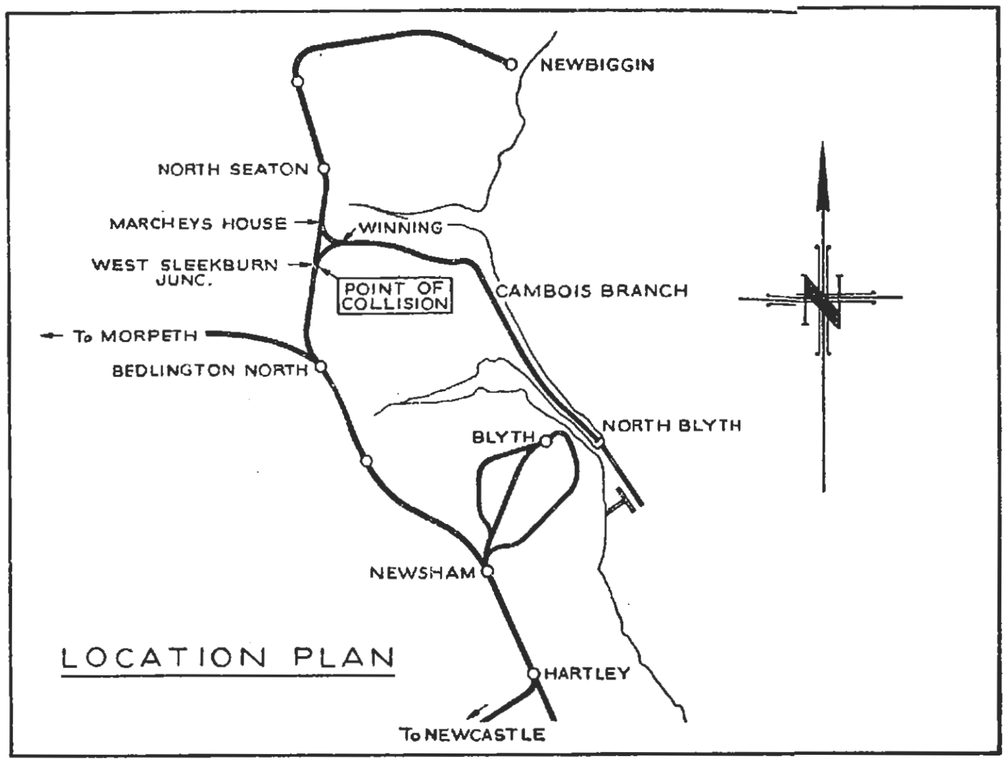
ONE SHILLING NET

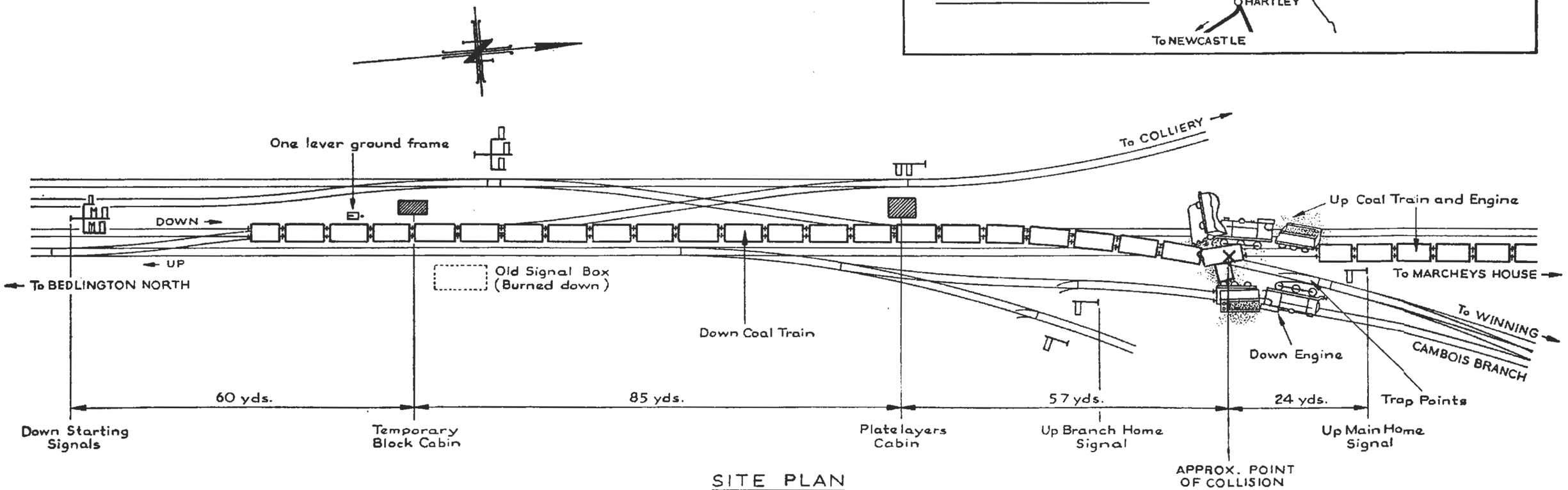
NORTH EASTERN REGION

COLLISION AT

WEST SLEEKBURN

4th. NOVEMBER, 1959





SITE PLAN

SCALE: 66 FEET TO 1 INCH

J.W.W.

MINISTRY OF TRANSPORT,

BERKELEY SQUARE HOUSE,

LONDON, W.1.

29th December 1959

SIR,

I have the honour to report, for the information of the Minister of Transport, in accordance with the Order dated 9th November 1959, the result of my Inquiry into the collision between two mineral trains at about 7.22 p.m. on the 4th November 1959, at West Sleekburn on the line from Newcastle-upon-Tyne to Newbiggin, in the North Eastern Region, British Railways.

An Up coal train, without vacuum brakes, which had been accepted under the Warning Arrangement in the Absolute Block Regulations up to the home signal protecting the junction at West Sleekburn, was unable to stop on the falling gradient. It ran slowly past the signal to collide head-on with a Down coal train which was travelling at a good speed over the junction to the branch line under clear signals. Both engines capsized and I regret to report that Driver W. Aconley and Fireman R. M. Thompson of the Down train were killed. Their deaths must have been instantaneous. The driver and fireman of the Up train suffered from shock.

It was difficult in the darkness and amongst the wreckage to find out quickly whether any of the engine crew were missing. There was a little delay on this account in sending for doctors who did not reach the scene until 8.30 p.m., although ambulances had been called promptly in anticipation of the need. Clearance was hampered by the amount of spilled coal and by the severe damage to the engine and tender of the Down train which could not be towed away; all lines were re-opened to traffic at restricted speed at 9.50 p.m. on the following day. An emergency bus service was run between the stations at either side of the scene of the accident on the 5th November.

The evening had been fairly fine but there was a shower of rain shortly before the accident.

DESCRIPTION

The trains

1. Both trains were hauled by Class 5, Type J-27, 0-6-0 engines with 6-wheeled tenders, weighing about 78 tons in working order. These engines are equipped with the steam brake which works on all engine and tender wheels, exerting a pressure equivalent to 78% of the weight. The driver's position is on the right.

2. The Up train consisted of two 13-ton wagons, twenty 16-ton wagons, and a 20-ton brake van. Its total length, including the engine, was 169 yards, and loaded weight 532 tons. The Down train comprised six 13-ton wagons and eighteen 21-ton wagons, with a 20-ton brake van at either end of the train. Its length, including the engine, was 221 yards, and loaded weight 733 tons.

The line and signalling

3. As will be seen from the location plan and drawing on the facing page, the double track line from Newcastle to Newbiggin runs North in the Down direction past West Sleekburn where there is a double line junction, facing in the Down direction, to the Cambois branch. This is a goods line which runs eastwards to the coal jetties at North Blyth. The relevant signal boxes, proceeding towards Newbiggin, and their distances from each other are as follows:

Bedlington North	
	1,600 yards
West Sleekburn	
	989 ,,
Marcheys House	
	754 ,,
North Seaton	

The first signal box on the branch line is Winning, 844 yards from West Sleekburn.

4. The alignment is straight through West Sleekburn which is in a shallow valley between Bedlington and Marcheys House. In the Up direction, from Marcheys House, the gradient falls at about 1 in 400 for ¾ mile and it then steepens to 1 in 92½ over a short distance before it eases to 1 in 140 at the junction. It is, however, shown as 1 in 250 throughout this length in the records. The increase in the gradient is ascribed to a gradual subsidence of the land over coal workings in the area of the junction.

6. The line to Newbiggin is of Category C, but it has not been necessary to impose a formal speed limit as high speeds cannot be achieved; the maximum speed attained by diesel trains is about 47 m.p.h., and by coal trains, which form the bulk of the traffic, 30 to 35 m.p.h.

7. West Sleekburn signal box was a brick structure with elevated working floor supporting a 40 lever frame, with 3-position block instruments for the main line and bells for the branch line, before it was burnt down in August of this year. A temporary cabin was then erected close by to house the block instruments, bells and telephones, and arrangements were made to work the points by hand and to flag trains past the signals. These arrangements included continuous supervision at the cabin by inspectors or railwaymen of equivalent supervisory grade. The block cabin is on the Bedlington side of the junction and about 130 yards from the diamond crossing where the Down branch line crosses the Up main. A platelayers' cabin near the junction provides shelter for the two handsignalmen who work the junction points and hand signal Up trains past the fixed signals; it is connected by telephone to the block cabin.

8. West Sleekburn Up home signal (the one passed at danger by the Up train) protects the junction and is only 18 yards from the fouling point at the diamond crossing. As already indicated, it is near the bottom of the falling gradient in the Up direction from Marcheys House, and there is no outer home signal. In the Down direction the starting signals for the main line and to the branch are on a bracketted post about 60 yards on the approach side of the block cabin, and the home signal is 204 yards on the approach side of the starting signals. There are also signals leading to and from colliery sidings on both sides of the line which are not relevant to the circumstances of this accident. A few weeks before the accident the Down home signal, which is some distance from the cabin, had been connected to a single lever frame near the cabin to avoid the need for a hand signalman at the signal.

Block Working

9. Unrestricted acceptance of Up trains by the West Sleekburn signalmen is not permissible when the junction is blocked as there is not an adequate clear distance ahead of the home signal, but acceptance under Absolute Block Regulation 5 in clear weather only was permitted by signal box Instructions up to the time of the accident, when no train conveying passengers was involved. This regulation requires the driver of the train to be warned at the box in rear of the conditions ahead. There are two ways of delivering this warning. If there is a stop signal ahead of the box and controlled from it, the signalman may check the train by delayed operation of the stop signal in rear, and warn the driver as he passes the box by holding out a green flag or green lamp; the driver must acknowledge the warning by sounding his whistle before the signalman may lower the stop signal ahead for the train to proceed into the section. If there is no stop signal ahead, the signalman must stop the train at the one in rear and then bring the train up to the box where he must verbally warn the driver and receive his acknowledgment. At Marcheys House signal box there is only one Up main stop signal and it is about 22 yards on the approach side of the box; the signalman is therefore required to carry out the second method outlined above when allowing Up trains to enter the block section towards West Sleekburn under Regulation 5.

10. Since the accident the signal box Instructions have been changed and the man at West Sleekburn is not allowed to accept Up trains under Regulation 5 when a Down train is signalled to the branch line.

Operating

11. The Newbiggin line and the Cambois branch carry a heavy coal traffic with about 40 to 45 coal trains each way per day passing West Sleekburn Junction, of which about half go to, or come from the branch line. In general, the Down trains to the branch for the jetties at North Blyth and the Up trains on the main are the loaded ones. The authorised loads for Class 5 engines are the equivalent of 34 standard mineral wagons in the Down direction towards the branch and of 33 such wagons on the main line in the Up direction. In addition to freight traffic there are 16 passenger and parcel trains each way per day on the main line.

12. It will be apparent from a consideration of the gradients that loaded Down trains for the branch must have difficulty in climbing the steep bank towards Winning unless they are able to approach it at a reasonable speed. This is fully recognised and the drivers of such trains will stop well short of the Down home signal at West Sleekburn if they have not been given a clear run to the branch.

The effects of the collision

13. The two engines must have met left buffer to left buffer at about 24 yards from the Up home signal as the Down train was travelling across the Up line towards the branch. These buffers had been torn off and the buffer beams were bent back on the left hand sides, and the main frames on that side of both engines were distorted. The engines had turned, away from each other, on to their right sides.

14. The Up train engine had stopped where it turned over. It had then suffered further damage from wagons of the Down train which had run into the front end of it. The tender lay derailed and tilted to the right at an angle of about 30° but it had remained in line with the engine and had been little damaged. None of the Up train wagons had been derailed and all were intact.

15. The Down train engine was more severely damaged, both at the front end and in rear; the wheels had come into contact with the other engine and this had caused buckling of the main frames, coupling rods, and horn guides. The tender, pushed forward by the momentum of the train behind, had been badly distorted; the body had been almost separated from the frame and it lay projecting into the upper part of the cab. The engine had come to rest on the Up branch line about 20 yards ahead of the point of collision.

16. The leading brake van and first three wagons of the Down train had been piled up and wrecked. The next three wagons had suffered heavy damage to the ends, with two derailed, and the rest of the train had remained on the track though a number of the hopper doors had fallen open.

Evidence

17. Signalman J. Ryan, who was on duty at West Sleekburn cabin, said that he accepted the Down train from Bedlington North at 7.16 p.m. and received the train entering section bell code for it at 7.17 p.m. At the same time he was offered the Up train but did not accept it. He then saw the lights of the Down train which he had been told was to go to the branch and, in order to let it travel unchecked over the junction, he offered it to Winning and received "Line Clear" at 7.18 p.m. He then told the hand signalman to set the route and clear the signals. At about the same time he was offered the Up train again and accepted it under Absolute Block Regulation 5; he received "Train Entering Section" immediately. The Down train passed the box at a good speed, which Ryan estimated to be 25-30 m.p.h. at 7.22 p.m., and he then saw it come to a sudden stop. Ryan said that Inspector Brown, who was on duty supervising the working at the signal box, told him that some of the hopper doors had opened, and he, Ryan, sent the obstruction danger signal to Bedlington North at once. Within a minute or two Inspector Brown came back to the box and told him that there had been a collision and he sent the obstruction danger signal to Marcheys House at 7.25 p.m., followed by Obstruction Danger to Winning. Ryan confirmed that it was quite usual to accept Up trains under Regulation 5.

18. Ryan's evidence was confirmed by the hand signalmen. The Down home signal lever had been operated after the points had been set for the branch and a yellow light exhibited at the starting signal. Lengthman L. R. Garrett, who had set the Down line points for the branch line, added to his evidence that it had not been necessary for him to alter the trap points on the branch which protect the Up main line, as he had left them closed for the line after the previous train on the branch. (In normal working these points are coupled with the Down line points and move with them). Signalman G. Kay, who was acting as hand signalman for Up trains, said that he saw the Up train travel slowly past the Up signal just before the collision, though he was not near enough to see, in the darkness, whether the engine wheels were locked.

19. District Inspector H. Brown also confirmed Ryan's evidence. After he had made a quick survey of the accident he told Ryan to get the ambulance and a few minutes later reported the accident himself to District Control and arranged for the breakdown crane and for the recovery staff to be called. He then made a further inspection at the scene of the collision, and when he realised that the enginemen of the Down train could not be found, gave the order for doctors to be called at about 7.45 or 7.50 p.m. A few minutes later the fire brigade was ordered. Inspector Brown said that he had not been aware of Lengthman Garrett's omission to re-set the trap points after the previous train to the branch line had passed.

20. Relief Signalman N. G. Hartley, who was on duty in Marcheys House signal box, said that he did not bring the Up train to a stand at his home signal but he checked it by leaving the signal at danger until the train was close to it; he then showed a green light from the box, which was acknowledged by the driver. He was satisfied that the train passed his box slowly. Hartley admitted that this procedure

was not in accordance with the Regulations but said that it was the custom at the box and was thoroughly understood by the drivers.

21. The Train Register times for the Up train in West Sleekburn cabin, which agree with those in Marcheys House, show that the Up train took 4 minutes to travel the one-half mile from Marcheys House to the point of collision, an average speed of about 7½ m.p.h.

22. Driver T. W. Cheeseman of the Up train said that he had coupled up to the train at Lynemouth, about five miles from West Sleekburn, and had been informed of the load, which was near the limit, by the Guard. He had checked the sanding gear on his engine when he went on duty at South Blyth shed at 4.30 p.m., and had used it when starting from Lynemouth. The lever was worked by the fireman but Driver Cheeseman was satisfied that the sand had been applied to the rail. He said that the train travelled slowly past North Seaton to Marcheys House, where it was brought practically to a stand at the home signal which was then lowered and a green light shown at the signal box. He realised at the time that he had been warned and that he would be required to stop at West Sleekburn home signal. He thought that his train passed Marcheys House at walking speed, and he used the brake steadily thereafter to prevent the speed rising much higher.

23. Driver Cheeseman said that he knew the route well and was fully aware of the care necessary in approaching West Sleekburn home signal because of the falling gradient; he had thought that the train was fully under control as it approached the signal at walking pace, but as he made the final brake application to stop it a few yards from the signal the engine wheels began to skid. He did not need to tell the fireman to apply the sands as this had been done by the man immediately the skidding started, and he was aware that the fireman had stepped down to the cess to pin down the wagon brakes. He then tried to reverse the engine as it slid slowly past the signal over the few yards up to the point of collision.

24. Driver Cheeseman had been fully satisfied with the working of the brake and he said that the reason for the engine wheels losing adhesion at the critical moment was that a light rain had begun to fall. He did not sound the whistle for the Guard to help him by applying the van brake because he was so busy trying to control the skid. He was shaken by the effect of the collision but after climbing out of the roof opening of the cab, which was on its side, he went to the other engine to look for the crew before he was conducted to the ambulance.

25. Fireman G. Cormack of the Up train confirmed Driver Cheeseman's evidence in so far as he could remember the incidents before the collision. Though he was on the ground and was not physically shaken by the collision, he seemed to have been severely shocked by it and his recollection was patchy. He remembered checking that the sand boxes were full at the shed and he thought that the sand had been used not more than twice and that the equipment had then worked properly. He did not remember passing Marcheys House but said that he remembered applying the sands when he felt the engine skid as they approached West Sleekburn home signal; he had then stepped down to the cess without difficulty as the engine was travelling so slowly.

26. Cormack said that when he tried to pin down the brake lever of the first wagon, he was not able at once to get the brake pin into the guide, and he thought that he was only at the second wagon when the collision took place. He then crossed under the train and went to the signal cabin to get help; after meeting his own driver he went to the other engine.

27. Guard N. Armstrong of the Up train confirmed generally the evidence of Driver Cheeseman. He had told him of the train load at Lynemouth, and he was looking forward through the ducket window of his brake van as the train approached Marcheys House; he saw the stop signal at danger before it became obscured by the train on the curved approach to the signal. The train had been travelling slowly at North Seaton and Guard Armstrong said that the speed at Marcheys House was not more than 7-8 m.p.h; thereafter he was sure that the train travelled slowly; it seemed to be fully under control and he felt no need to apply the van brake before the collision occurred.

28. Armstrong heard the noise of the collision though there was no shock in his van, and after going to the engines and finding his own driver he searched with others on either side of the line to see if the engine crew of the Down train had left their engine and were lying injured. At that time it was not possible to get inside the cab of the Down engine because of the escape of steam. Armstrong then returned to his van and protected the line in rear.

29. Guard J. Pawson of the Down train said that the accident did not jolt him severely and that it seemed like a normal stop. He had applied the van brake as he usually did on the falling gradient as the train had passed Bedlington North and had then released it when he saw that the signals had been given for the branch. He joined in the search for his driver and fireman for a few minutes before going back to protect the train.

30. Attempts were promptly made to break open the cab of the Down train engine and divert an escape of steam to enable rescuers to search for the engine crew. Driver I. Dixon, who had gone to the site from North Seaton where he had heard about the accident as he was finishing work, showed determination and resource in entering the cab and diverting the flow of steam. He said that he verified that the regulator was closed, and he also closed what he thought was the brake wheel valve. It would seem therefore that the enginemen had realised the danger in time for the brake application valve to be opened before the collision took place.

31. During my Inquiry a number of witnesses were questioned about the difficulty of stopping unfitted freight trains at West Sleekburn home signal. It was generally agreed by drivers and passed firemen that it was difficult to stop trains there on account of the gradient, but the occasions on which trains had overran the signal had been rare.

Conclusions

32. It is clear that Driver Cheeseman understood that he had been admitted into the section at Marcheys House under the Warning Arrangement of Absolute Block Regulation 5, and that he was required to stop at West Sleekburn home signal. I am satisfied that he approached the signal cautiously, with every intention of stopping at it, but events showed that he was not driving with sufficient care for this difficult section of line.

33. Acceptance of Up mineral trains by West Sleekburn under Regulation 5 with the junction set for the branch line is not safe in view of the gradient, the proximity of the home signal to the fouling point, and the type of unfitted coal trains which use the line. When the gradient was 1 in 250 the margin of safety may have been reasonable; now that the gradient has become steeper it is too small. The Railway amended the West Sleekburn signal box Instructions, as already mentioned, when the increase in gradient was brought to light after the accident, to prohibit acceptance under Regulation 5 unless the Down junction points are set for the main line. This should prevent a repetition of the accident.

34. Relief Signalman N. G. Hartley did not carry out the full Warning Arrangement procedure appropriate to Marcheys House signal box before allowing the Up train to go into the block section. Although the abbreviated procedure carried out by him gave Driver Cheeseman the necessary warning, Hartley had no authority to vary the Regulation which has been framed in the light of many years of experience, and he should not have done it. His action did not, however, contribute to the accident.

Remarks

35. The delay in sending for the doctor did not in any way affect the fate of the two men who so unfortunately lost their lives. I draw attention to the matter, however, in order to emphasize that the man in charge at the scene of an accident should be biased towards promptness in calling for doctors in anticipation of the need, rather than towards waiting until it has been established. Past experience has shown that there has seldom been any delay in sending for doctors.

36. Lengthman Garrett's failure to re-set the Down branch line trap points after the passage of the previous train had no bearing on the accident, but it illustrates the need for unremitting attention by the supervisory staff when hand working is in operation, to ensure that routes are properly set in all respects.

Recommendations

37. The North Eastern Region Instructions respecting Loads to be Conveyed by Engines Working Freight Trains require the observance of Rule 131 (ii) on certain specified sections of line. This rule enjoins the Guard to apply the rear hand brake when travelling down a steep gradient to steady the train. I consider that the Up line between Marcheys House and West Sleekburn should be specified in the Instructions.

38. The change in gradient which made the conditions at this junction hazardous may happen at other places where subsidence can take place through mining. I am advised that the gradients where subsidence can occur are being checked so that train operating arrangements shall not be based on misleading data, and I think that the same precautions should be taken in other Regions.

I have the honour to be,

Sir,

Your obedient Servant,

The Secretary,
Ministry of Transport.

W. P. REED,
Colonel.