DEPARTMENT OF THE ENVIRONMENT

RAILWAY ACCIDENT

Report on the Collision that occurred on 27th November 1973 near Whitehaven

IN THE
LONDON MIDLAND REGION
BRITISH RAILWAYS

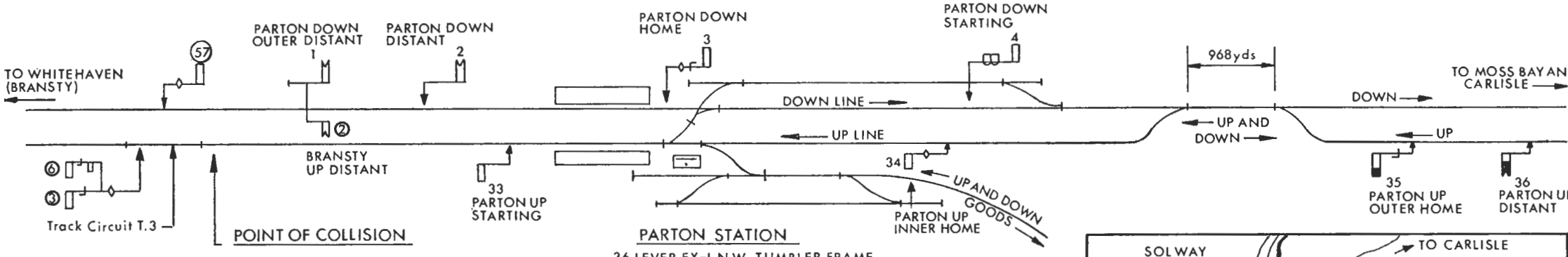
LONDON: HER MAJESTY'S STATIONERY OFFICE
1975

PRICE 22p NET

ISBN 0 11 550361 7

COLLISION AT WHITEHAVEN (BRANSTY) – L.M. REGION ON 27th NOVEMBER 1973.

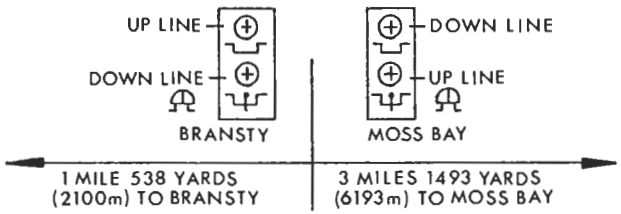
DIAGRAMS SHOWING LOCATION, SIGNALLING, AND GRADIENTS – NOT TO SCALE

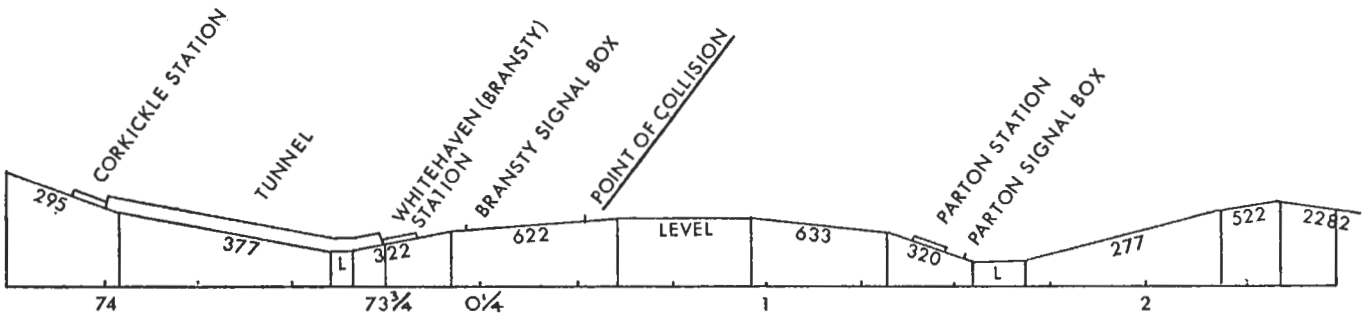


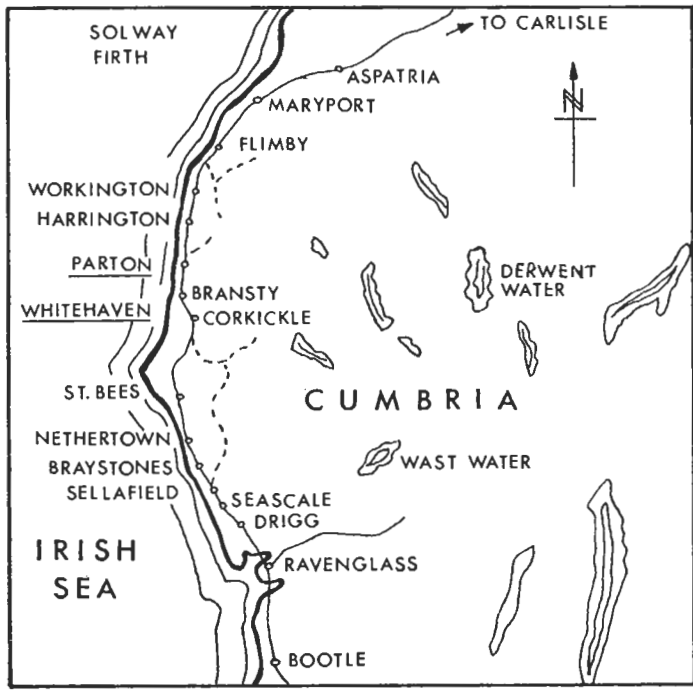
Note Relevant Signals only shown. Signals controlled by Bransty shown circled.

PARTON STATION

36 LEVER EX-L.N.W. TUMBLER FRAME ILLUMINATED DIAGRAM.







RAILWAY INSPECTORATE,
DEPARTMENT OF THE ENVIRONMENT,
2 MARSHAM STREET,
LONDON, SW1.

30th December 1974.

SIR,

I have the honour to report for the information of the Secretary of State, in accordance with the Order dated 28th November 1973, the result of my Inquiry into the collision between a passenger train and a freight train that occurred on 27th November 1973 near Whitehaven in the London Midland Region of British Railways.

At about 08.11 on that day a freight train was brought to a stand at the Up Home signal at Bransty (Whitehaven) to await acceptance by the signal box ahead. Some ten minutes later the signal cleared and the train started to move but almost immediately it was run into at the rear by a two-car diesel multiple-unit passenger train that had been irregularly allowed into the section by the signalman at Parton Station. The collision resulted in the derailment of the leading bogie of the passenger train and of the brakevan and rearmost vehicle of the freight train. Considerable damage was done to the leading coach of the passenger train but by good fortune injuries were confined to the driver of this train and to the guard of the freight train, none of the 14 passengers being more than shaken. The driver and guard were not seriously hurt.

Only the Up line was blocked by the accident. Single line working was instituted over the Down line at 09.25 and the Up line was cleared and restored to traffic by 14.30.

At the time of the accident the weather was clear and dry with good visibility.

DESCRIPTION

The Line

1. The double track railway between Parton and Bransty signal boxes, on the line from Carlisle to Barrow via Workington, is 1 mile 538 yards long with jointed track maintained to Class C standard. Until June 1973 the Up direction was from Bransty towards Parton but in that month, and in conjunction with signal modernisation in the Carlisle area, the Up and Down directions were reversed so that at the time of the accident the Up direction was towards Bransty and the Down direction towards Parton.

2. The railway follows the coast, with the sea on one side and high cliffs on the other. Leaving Parton Station in the Up direction the line curves to the left at 10 chains radius and then, after a short straight, to the right at 20 chains radius. It then runs straight for a little over ¼ mile before curving to the left, initially at 14 chains radius and then at 18 chains, to the point of collision. A permanent speed restriction of 30 mile/h applies over this compound curve. The gradient leaving Parton is at 1 in 320 rising, easing to 1 in 633 before the line descends at 1 in 622 into Bransty.

3. The layout of the railway to the north of Parton and to the south of Bransty is also of some significance in the circumstances leading up to the accident. Between Parton and Moss Bay Iron Works, the next signal box to the north, the line is double track except for a stretch of single line some 968 yards long where the line rounds the unstable cliffs at Parton Sea Brows. This length of line is track circuited throughout and is under the control of the signalman at Parton. Immediately to the south of Bransty the main lines, which are designated the Down Main and Up and Down Platform lines through Bransty Station, converge to a single line to pass through a short but restricted tunnel before emerging at Corkickle.

4. A diagram showing the important features of the line, including the signalling, is at the front of the report.

The Signalling

5. The line between Parton and Bransty is worked in accordance with the Absolute Block Regulations, with semaphore upper quadrant signals on the left hand side of the line in the relevant direction of travel. On the Up line the Parton signalman has Distant, Outer Home, Home, and Starting signals and on the Down line he has Outer Distant, Distant, Home, and Starting signals. Entry onto the single line section north of Parton is controlled by the Up Outer Home and Down Starting signals for movements in the Up and Down directions respectively.

6. At the time of the accident the signalling controls provided at Parton differed between the Up and Down lines. In the Up Direction the Starting signal was not provided with a Line Clear release, although occupation of the berth track circuit at the Bransty Up Home signal (200 yards long) prevented Line Clear being given to Parton by the signalman at Bransty and maintained the block instruments at Parton and Bransty at 'Train on Line'. Both the levers and signal arms of the Parton Up Distant and Up Outer Home signals were required to be Normal before Line Clear could be given, but the locking of the Up signals was not sequential. No Welwyn control was provided. In the Down direction the Starting signal was provided with a Line Clear release, and the arm of the Outer Distant and the lever of the Down Home signal were required to be Normal before Line Clear could be given. The locking was sequential but there was no Welwyn control.

7. Standard British Railways 3-position block instruments, mounted side by side on the block shelf, are provided at Parton Signal Box. The instrument for the Parton–Bransty section is on the Bransty side, and the Parton–Moss Bay instrument is on the Moss Bay side. In the case of the Parton–Bransty instrument the block indicators read Up line above Down line. The Parton–Moss Bay instrument reads Down line above Up line.

8. The exceptionally exposed nature of the railway where it follows the coast-line has led to difficulties in the maintenance of the signalling equipment. This had resulted, at the time of the accident, in the Bransty Up Distant and the Parton Down Outer Distant signals being temporarily fixed at Caution. In the case of the Down Outer Distant this situation had existed for some considerable time: in the case of the Up Distant for a comparatively short time only.

The Trains

9. The freight train was the 9T91, 07.09 Workington to Corkickle. It was hauled by Class 25 diesel locomotive No. 7546 and comprised 38 mixed vehicles including the brakevan, loose coupled throughout. The total weight of the train was 880 tons, and its overall length was 954 feet.

10. The passenger train was the 2P59, 07.00 Carlisle to Whitehaven, formed by a two-car diesel multiple-unit comprising Motor Brake Second No. 50961, powered by two BUT (Leyland) 150 hp engines, and Driving Trailer Composite No. 56243. The unit was built at Derby in 1959. Its total weight was 50 tons 10 cwt and its overall length 115 feet.

The Collision and Resulting Damage

11. The collision occurred approximately 277 yards in rear of the Bransty Up Home signal. The freight train had only just started away from this signal and was still moving at a walking pace when the passenger train, travelling at about 25 mile/h, collided with its rear end. After the collision the passenger train, with the trailing pair of wheels on the leading bogie of the leading vehicle derailed, continued forward a further 63 yards before stopping, whilst the freight train, with the two rearmost vehicles both derailed leading pair of wheels, continued forward until stopped at Bransty Signal Box by the signalman there. At this point the derailed brakevan was 145 yards from where the passenger train had stopped.

12. On the leading vehicle of the passenger train the driving compartment was completely destroyed by the collision, the solebars and main frames were sheared just behind the leading buffer beam, and extensive damage was caused to bodysides, flooring, and underfloor equipment through much of the length of the car. Damage to the second vehicle was much less severe, being limited to a displaced passenger seat and damaged toilet water tank. The two rearmost vehicles in the freight train were relatively little damaged, such damage as there was being confined to bent buffering and draw gear. There was no damage to lineside signalling equipment, and damage to the permanent way was not extensive.

Evidence

13. The freight train was in the charge of *Guard Alan Rigg*, who was based on Workington and who knew the line between Workington and Whitehaven well. The train was booked to leave Workington at 07.09 but had not left until 07.49 on the day of the accident. The run from Workington to Bransty was made without incident under clear signals: Rigg had observed the signals at Parton as the train passed through and they had been clear. Approaching Bransty he had applied the handbrake as the train passed the (fixed) Distant signal and had left it partially applied when the train stopped at the Home signal. About 10 minutes later he saw the signal clear and released the brake as the train started to move. He then sat down and was looking towards the front of the train when, without any warning and very soon after the train had started to move, he was thrown from his seat by the force of the collision. He told me that trains were not infrequently held at the Bransty Up Home signal and it was not unusual for a train to be kept there for as long as 10 minutes.

14. The driver of the freight train was *Driver William Curnow*, of Workington. After leaving Workington under clear signals he had been checked briefly at the Parton Up Outer Home signal but had then received clear signals until the Up Distant at Bransty. As the train passed Parton Signal Box the signalman had waved in acknowledgement, as was his usual custom. Approaching the Bransty Up Home signal Curnow could see a parcels train standing in the station ahead and realised that his train would probably be held some time at the signal. He stopped the train with the locomotive some 10 yards from the signal. After about 8 or 9 minutes he sent his secondman forward to the signal box to sign the train register book but, just after the secondman had set out, the signal cleared. He started the train after recalling the secondman, but as the locomotive passed the signal he saw the balance weights move and realised that the signal had been replaced to Danger. He was not sure at the time whether the signalman had been a little hasty in replacing the signal, or whether there was some other reason, so he allowed the train to move slowly forward. He then saw the signalman step outside his box and wave his arms, so he brought the train to a stand. It was only then that he learned that his train had been run into at the back.

15. The driver of the passenger train was *Driver Tom Broadhurst*, also of Workington. He had been a driver on the Carlisle to Whitehaven line for nearly 30 years. On the day of the accident he had worked the 05.45 DMU service from Workington to Carlisle and the same unit had then formed the 07.00 Carlisle to

Whitehaven train. The journey to Carlisle had been uneventful: on the return journey he had been delayed for two or three minutes by signals at Moss Bay but otherwise had run under clear signals. Approaching Parton the Up Distant signal was at Caution but the Up Outer Home signal was clear as it came into view and he took the train around the Sea Brows curves at the prescribed speed. The Parton Up Inner Home signal was clear as he approached, as was the Up Starting signal: these signals had both been at clear when they first came into his view. The stop at Parton Station was of short duration and as soon as the guard gave the 'ready to start' signal Broadhurst started the train. He took the train round the curves towards Bransty, travelling at or very close to the permitted speed of 30 mile/h and with the engine idling in fourth gear, and then suddenly became aware of a train, which seemed to be stationary, less than 100 yards ahead. At first he thought it was on the opposite line but quickly realised it was not and so made a full emergency brake application. He realised at once that his train would not stop in time so he left the cab and went back into the passenger compartment. The collision followed almost at once and he was flung to the floor and half buried in debris. When he got clear he went to protect the opposite line and then made his way to Bransty Signal Box from where he was taken to hospital.

16. In answer to questions Driver Broadhurst confirmed that throughout the journeys that morning his brakes had worked normally. On arriving at Parton Station he had stopped with the cab of his train some 3 or 4 coach lengths away from the starting signal, and had kept this signal in view as the train left the station: he was sure that the signal had not moved up to the moment that he had passed it.

17. The guard of the passenger train was *Guard Robert Taylor*, of Workington. On the day of the accident he had worked the 05.45 service from Workington to Carlisle and the return 07.00 service from Carlisle with Driver Broadhurst. He recalled that the train had been stopped by signals at Moss Bay but he had not otherwise observed any of the signals during the journey from Carlisle. By the time the train had reached Parton they were running slightly late and left there, after a brief stop, at 08.21 which was 4 minutes behind the booked time. He was issuing tickets to passengers in the leading coach as the train travelled towards Bransty when he heard a shout and saw Driver Broadhurst coming through the door from the front cab. At the same moment he saw the brakevan of the freight train immediately ahead and the collision occurred seconds afterwards. He was flung to the floor and after picking himself up and checking that none of the passengers was injured he protected the line in rear of his train and made his way to Parton Signal Box. On going into the box he said to the signalman "I presume you know what happened?" and the signalman replied "Yes, it was my fault". The signalman went on to explain that he had cleared the Starting signal in error and that when he had realised his mistake he had replaced the signal to Danger but the train had by then just passed it.

18. At the time of the accident *Relief Signalman William Wilson* was on duty in Bransty Signal Box. As a relief signalman his roster covered Parton, Bransty, and Corkickle No. 1 signal boxes. At 07.54 he accepted the 9T91 Workington to Corkickle freight train from Parton and received the 'Train Entering Section' signal for it at 08.06. Meanwhile, at 08.03, a Down parcels train had arrived at Whitehaven. Owing to the length of this train it was normal practice to shunt it at Whitehaven and since this movement involved occupying the single line through the tunnel and 'blocking back' to Corkickle it was necessary to hold 9T91 at the Up Main Home signal. When the shunting was completed he offered the parcels train forward to Parton at 08.18 and it was accepted under Regulation 4. Two minutes later, at 08.20, he received a telephone call from the signalman at Parton who said that he had mistakenly allowed the passenger train into the section. Immediately before the telephone had rung he had received a 'Train Entering Section' bell signal from Parton, which he had acknowledged, but this had not been preceded by any other bell signals relating to the passenger train. Wilson's first action on receiving the telephone message was to replace the Down Home and Starting signals to Danger in order to stop the parcels train from leaving and he then cleared the Up Main Home signal in an endeavour to get the freight train on the move and thus lessen the effect of any collision. As soon as the freight train started away he replaced the Starting signal to Danger so that the driver of the following passenger train should not see it in the clear position. There had been no delay in the freight train starting after he had cleared the signal for it. At 08.22 he learned that a collision had taken place and advised the Control Office at Carlisle accordingly: this had taken several minutes as there was some trouble with the telephones and the message had to be relayed via Workington.

19. In answer to my questions Wilson said that as a relief signalman he had frequently worked Parton box and that he had on occasions had difficulty with the Down Starting signal, which tended to stick in frosty weather. He had also experienced trouble with the track circuits at Parton where failures had occurred on the exposed sections of line. Regarding the transposition of the Up and Down directions in June 1973 he had personally found this a help because previously the designation of the lines had been different to the north and south of Whitehaven.

20. The signalman at Parton was *Signalman William Gibson*. He had been a railwayman since 1968, in which year he qualified as a signalman, and he had worked since then at Parton. He was aged 39 at the time of the accident. On the day concerned he booked on duty at Parton at 05.30 having finished his previous turn at 12.00 on the day before. He told me that he was properly rested when he started work on 27th November and was in good health and had no personal worries to distract him from his work.

21. During the first two hours or so after starting duty Gibson was alone in the signal box coping with the normal traffic. All was not however routine since on one or two occasions the signal arm of the

Down Starting signal did not return to its correct position after the lever was replaced in the frame and he had to go down to the signal, some 360 yards away from the box, and shake the balance weights before the arm would return properly. He had experienced similar trouble with this signal before and had reported it. At about 07.00 he tried to telephone Workington No. 3 Signal Box to tell the signal technicians that the signal was giving trouble again but could not get through so he passed a message via Derwent Iron Works box.

22. At 07.55 he offered the Workington to Corkickle freight train, 9T91, forward to Bransty. It was accepted and he at once cleared his Up line signals for it. At 08.06 he was offered, and accepted, two light locomotives travelling as a train from Bransty. One minute later, at 08.07, 9T91 passed the box and he sent the appropriate bell signals to Bransty and Moss Bay and replaced the Up line signals to Danger. Immediately afterwards he was offered, and accepted, the Up passenger train from Moss Bay. At 08.09 he received 'Train Entering Section' for the two locomotives from Bransty and they passed his box at 08.12 and proceeded onto the single line. He replaced the Down Starting signal lever but once again the arm did not return fully and although from the box the signal seemed to be at Danger the repeater was showing 'wrong'. In these circumstances he could neither set the points for the single line in the Up direction nor clear the Up Outer Home signal because both were held by the electric locking.

23. Gibson realised that unless he could remedy the fault the passenger train would be delayed so he set off once more for the signal, running most of the way. On arrival he rattled the balance weights and the signal arm dropped fully into the Danger position without difficulty. He then ran back to the signal box where he saw from the illuminated diagram that the passenger train was already at or approaching the Up Outer Home signal. He reversed the points for the single line and cleared the Up Outer Home signal. As far as he could remember the time was then about 08.17: he was out of breath from running and did not make an entry of the time in his train register book.

24. A minute or two later Gibson accepted the parcels train from Bransty and after putting the block instrument needle to 'Line Clear' he turned and made the appropriate entry in the train register book, recording the time as 08.20. Knowing that the passenger train would by that time be closely approaching he glanced up at the block instruments, saw an indicator showing 'Line Clear', and immediately cleared the Up Inner Home and Up Starting signals. He watched the passenger train go past his box and stop at the station and as it departed he sent the 'Train Entering Section' signal to Bransty. He then glanced again at the block instruments, saw that the Up indicator on the Parton–Bransty instrument was already showing 'Train on Line', and realised what he had done. His first action was to put the Starting signal back to Danger but by then the front of the train had already passed the signal and he watched the train proceed on towards Bransty. He then telephoned the Bransty signalman and told him what had happened. He did not send any of the emergency bell signals.

25. Signalman Gibson confirmed that when an Up train requires to go into the platform at Parton before it has been accepted forward by Bransty it is his invariable practice to wait for it to come to a stand at the Inner Home signal before clearing this signal. He had not done this in the case of the passenger DMU because, having misread the block instruments, he thought that the train had been accepted. He told me that, although the BR standard block instruments had been in the box for some 4 or 5 years, he still found them slightly confusing at times, and the transposition of the line designations in 1973 had not helped although he had got used to this. As far as he could remember it had been quite light in the signal box at the material time: the electric light above the desk had been on but the light that illuminates the block instruments had been off. Finally, Gibson said that when he called for assistance from the signal technicians they usually arrived without undue delay: on the morning of the accident they had arrived soon after 09.00 in response to his telephone call at 07.00. (They in fact found nothing wrong but thought that the wire between the signal box and the signal might have become overtight due to the cold in the early morning and they accordingly let out two links under the signal box.)

26. *Signals and Telecommunications Supervisor Alan Leech*, who was based at Carlisle, was advised of the collision and arrived at Bransty Signal Box at about 11.10. He noted that the Up Home main and subsidiary signal levers, Nos. 3, 6, 7, and 10, were normal in the frame and all the signal arms were in the correct 'ON' position. The Up Main block instrument to Parton was placed to 'Train On Line', and track circuit No. 3 was showing occupied. Mr Leech then went to Parton Signal Box where he noted that the levers for the Up Inner Home and Up Starting signals were normal and the block instrument from Bransty was indicating 'Train On Line' for the Up line. He next tested the block signalling apparatus at both Parton and Bransty and found all in order. In particular he checked that with berth track circuit No. 3 at Bransty occupied the block needles at Bransty and Parton were maintained at 'Train On Line', and that it was not possible for the signalman at Bransty to give 'Line Clear' with this track circuit occupied. The block instruments in both signal boxes were correctly and clearly labelled.

27. Mr. Leech described the arrangements for maintenance and inspection of signalling and telecommunications equipment in the Whitehaven area and confirmed that there had been difficulties with telephone communication due to cable failures. He thought that the difficulty experienced with the Parton Down Starting signal had possibly been due to salt incrustation, this being a constant problem along the exposed coastal sections of the line.

28. *Movements Supervisor Joseph Brown*, who was based at Workington, had arrived at Parton Signal Box somewhat earlier, at about 10.15. Signalman Gibson was at that stage still on duty and he told Mr. Brown that all the equipment was in order and that the accident had been due to his error in clearing the signals for the passenger train. Gibson was very upset but insisted on staying in the signal box, saying that he had caused the accident and wanted to help put things right. Mr. Brown told me that this was typical of Gibson, who was well known as a conscientious worker and a good, steady, signalman.

29. As part of his duties Mr. Brown made frequent visits to the signal boxes at Parton and Bransty. He normally checked the train register books and compared the entries with the state of the block instruments. He had found errors in the train register books following the transposition of the Up and Down lines in June 1973, but these had ceased after a month or two when the signalmen had become accustomed to the new directions. From his experience he was sure that signals were always returned properly to Danger after the passage of a train, even where the signals were free of control by the block. Regarding the provision of block controls on signals in one direction at Parton but not in the other, Mr. Brown felt that this situation could well lead to confusion. He had requested the provision of full controls at Parton following an accident caused by a signalman's error in 1966, and again when the line around the Sea Brows was singled.

30. Tests on the braking system of the passenger train were made after the accident under the supervision of *Assistant Maintenance Engineer William Hodgson* and showed that the brakes were in perfect order. Following an emergency brake application the brakes would be applied fully in approximately 3 seconds and on level track the train would thereafter be brought to a stand in about 100 yards from a speed of 30 mile/h. This shows that Driver Broadhurst would have had no chance of stopping his train from the point where the brakevan of the freight train first came into his view, even had he made the brake application at the earliest possible moment.

Conclusion

31. The collision was the direct result of irregular block working by the signalman on duty in Parton Station Signal Box, Signalman William Gibson, who wrongly allowed the 07.00 Carlisle to Whitehaven passenger train to enter the section of line between Parton and Whitehaven (Bransty) without first obtaining the permission of the signalman at Bransty and whilst the section was still occupied by the preceding freight train. Signalman Gibson frankly accepted responsibility for the accident and this stands to his credit.

Remarks and Recommendations

32. By all accounts Signalman Gibson was a conscientious and reliable signalman and yet he allowed a passenger train to enter a section of line whilst that section was still occupied by a preceding train, thus violating the fundamental principle of absolute block working. What caused him to make so basic a mistake? In view of the good reports as to his reliability I am prepared to accept that he properly replaced his Up line signals to Danger after the passage of the freight train, although there is no direct proof that he did so. In which case there is little doubt that he misread the block indicators and cleared the signals for the passenger train, thinking that he had already obtained 'Line Clear' for it. The block instruments were mounted side by side fairly high up on the block shelf, they would not have been very well lit at the time, and it was not many months since the Up and Down line directions, and with them the labelling of the block indicators, had been transposed. One must also consider his state of mind at the time. In the 17 minutes between 07.55 and 08.12 he had cleared the freight train to Bransty, accepted the passenger train from Moss Bay, and accepted and cleared the two light locomotives: he had then experienced trouble with the Down line Starting signal, run some 360 yards to the signal and back, and was aware that traffic, and in particular the Up passenger train, was being delayed. In these circumstances a momentary lapse, leading him to believe that he had already obtained 'Line Clear' for the passenger train, can be understood even if it cannot be condoned.

33. In the circumstances obtaining at Parton at the time of the accident the safe signalling of trains on the Up line between Parton and Bransty depended entirely on the signalmen's strict observance of the Absolute Block Regulations including the proper use of the Train Register to ensure an up-to-date record. The block indicator at Parton for the Up line to Bransty provided no more than a reminder of the state of this section of the line, merely repeating the indications shown by the instrument at Bransty, and the state of the block had no effect on the Up Starting signal, which the signalman could clear at any time. The signalling arrangements on the Up line between Parton and Bransty thus represented the block system in almost its most basic form, with few of the safeguards that have been developed over many years in order to reduce the risk of human error. In contrast, the Down line Starting signal was equipped with a Line Clear release so that the signalman could only clear this signal when the block instrument at the signal box ahead, Moss Bay, had been placed to 'Line Clear'.

34. As part of my Inquiry I asked for a survey to be made to establish the number of signal boxes on British Railways in which some, but not all, of the starting signals on passenger lines are Line Clear or Token released, and also the number of boxes in which none of the passenger line starting signals is so released. The survey showed that, as at March 1974, there were 165 signal boxes in the former category, including 69 in the London Midland Region, and 222 in the latter category, including 79 in the London Midland Region. Some of these boxes however are likely to be closed in the near future. The survey also suggested that the lack of

balance between the controls in some boxes is not restricted to those on the starting signals but extends to such other controls as Home Normal Contact (HNC), distant proving, sequential locking, and Welwyn.

35. I also examined the record of train accidents on passenger lines resulting from irregular block working by signalmen. These have averaged just over 3 per year during the past 10 years, and the accidents that have resulted have usually been collisions and some have been serious. In relatively few of the accidents however has the absence of locking between the block instruments and the signal, or a lack of balance between the controls provided, been a significant factor. By a coincidence one of the accidents in which the lack of controls was a factor was virtually a carbon copy of the accident under inquiry: it occurred in May 1966 when the then Parton signalman irregularly cleared his starting signal for a light engine to proceed to Bransty although he had not received the 'Train Out of Section' signal for the preceding freight train, and the engine caught up and collided with the rear of the freight train as the latter was starting away from the Bransty Home signal. By a further coincidence the driver of the light engine on this occasion was the same Driver Broadhurst, who has thus twice been signalled forward into danger by his colleagues in Parton Signal Box.

36. Immediately following the public hearing on 18th January 1974 I discussed the particular situation at Parton with the Railway Officers of London Midland Region, and they undertook to give high priority to the provision of block controls on the Up Starting signal at Parton. I am glad to report that the necessary controls were fitted on 10th March 1974.

37. I also discussed, in a series of meetings with the Board's Movements Manager and his Officers held subsequent to the completion of the survey mentioned in paragraph 34, the question of the remaining boxes at which the controls provided are not the same on all passenger lines, or where no controls at all exist. It was clear that the provision, in the foreseeable future, of full controls at all these boxes could not be justified and it was therefore agreed that any programme of improvements should be based on an examination of the particular situation at each box and a proper assessment of priorities. In particular, since the examination of accident records had not shown the unbalanced situation to be necessarily more hazardous than a complete lack of controls, I agreed that it would be illogical to concentrate on the 'unbalanced' boxes to the detriment of those without controls of any sort.

38. The Board's Officers agreed to undertake a further survey of mechanical signal boxes on passenger lines in order to determine the exact nature of the controls provided in each case. This survey would then provide the basis for a progressive programme of improvements aimed at producing consistent standards along any given section of line and, ultimately, a common minimum standard throughout BR. Reports on the progress of the programme will be given to the Inspectorate from time to time.

39. In welcoming the Board's proposals, I asked that any work done under the improvement programme should not create further unbalanced situations unless these were of a strictly temporary nature.

I have the honour to be,

Sir,

Your obedient Servant,

C. F. Rose

Major.

Printed in Scotland by Her Majesty's Stationery Office at HMSO Press, Edinburgh
Dd 289419 K7 2/75 (12195)

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