MINISTRY OF TRANSPORT

RAILWAY ACCIDENT

Report on the Collision that occurred on 17th July 1967 at Maidstone East Station

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1969

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

21*st October*, 1968.

Sir,

I have the honour to report for the information of the Minister of Transport, in accordance with the Order dated 18th July 1967, the result of my Inquiry into the collision between a goods train and an electric passenger train at 15.53 on Monday, 17th July 1967, at Maidstone East Station, in the Southern Region, British Railways.

On a dry and sunny afternoon, the 15.28 Class 5 goods train from Ashford to Willesden, consisting of 26 loaded continental ferry vans and a brake van, and hauled by an electric locomotive, ran past Maidstone East Up Main Outer Home signal at Danger and collided at about 15 m.p.h. with the rear of the 15.54 Maidstone East–Victoria electric multiple-unit passenger train, consisting of 4 coaches, which was standing in the Up Main line platform. The passenger train was pushed forward some 76 feet, but was not derailed, although the rear coach was extensively damaged. The locomotive and leading 3 ferry vans of the goods train were damaged and the second ferry van was derailed.

The emergency services were summoned within two minutes of the accident occurring and arrived promptly. Thirteen passengers, including 3 children, were slightly injured and were conveyed by ambulance to the West Kent Hospital, but were all discharged after treatment.

The Chart Leacon breakdown train was ordered immediately; the damaged vehicles were removed and normal working was resumed at 01.21 the next day. During the time that the Main lines were blocked, passenger trains were terminated at Maidstone East and a shuttle service was run between Bearsted and Ashford. A connecting bus service was run between Maidstone East and Bearsted Stations.

DESCRIPTION

The Site

1. Maidstone East Station lies on the London (Victoria)–Ashford line of the former London, Chatham and Dover Railway approximately 40 miles from London and 19 miles from Ashford. Figure I at the back of this Report shows the track and signal layout in the Maidstone East Station area, while a gradient diagram will be found at Figure II and a location diagram at Figure III. The line between Ashford, Maidstone East and Swanley Junction is double track, but at Maidstone East there is a central Reversible line between the Up and Down Main platform lines, with connections to the Up and Down Main lines at both ends of the station.

2. In the Up direction from Ashford to Maidstone East the line rises almost continuously for 10 miles to Lenham Station and then falls for about 5½ miles to a point about ¾ mile before Bearsted Station. From this point it rises at a gradient of 1 in 101 to a summit just before the station and thereafter it is on a falling gradient for 2¾ miles to Maidstone East Station. From a point some 700 yards beyond Bearsted Station the line falls at a gradient of 1 in 83 for approximately 1,000 yards, followed by a gradient of 1 in 79 for a further 1,780 yards to a point just under a mile from the country end of Maidstone East Station. There the line continues to fall at gradients between 1 in 81 and 1 in 289 through Wheeler Street and Week Street tunnels, after which there is a short stretch of level track to the station. Through the station it is on a falling gradient of 1 in 276.

The Signalling

3. The signalling at Maidstone East was renewed in 1962 and consists of a miniature lever power frame operating points electrically and modern colour light signals. All running lines within the station limits are fully track circuited. The section of the line between Hollingbourne and Maidstone East (Bearsted signalbox was switched out at the time of the accident) is worked on the Absolute Block system, using Sykes Lock and Block instruments. The signalbox is located at the London end of the station on the Down side, separated from the Main lines by the Down Platform and the lines leading to the Bay Platform and Goods Yard.

4. Maidstone East Up Main Distant signal is located 2,105 yards from the signalbox (1,946 yards from the point of collision) and is first sighted at a distance of 300 yards. The Up Main Outer Home signal is at the Ashford end of Wheeler Street tunnel, 784 yards from the box (625 yards from the point of collision), and owing to the curvature of the line at this point is provided with a repeater 944 yards from the box (785 yards from the point of collision). The Up Main Inner Home signal is at the London end of Maidstone East Up Platform.

The Trains

5. The passenger train consisted of two 2-car (2-HAP) electric multiple-units, built in 1958 and 1963 respectively, of all steel construction with central buffers between the two coaches of each unit and centre buffer plates and auto-couplers at the ends of the units. Side buffers are also provided at the ends of units. Both units are fitted with electro pneumatic and Westinghouse automatic air brakes.

6. The goods train was hauled by a British Railways Bo-Bo 750 volt d.c. electric locomotive No. E5010, of 2,552 h.p. and weighing 77 tons. The train consisted of 26 continental ferry vans equal to 67 Basic Wagon Units and a 20-ton unfitted brake van; the total weight of the train and the locomotive was 591 tons 10 cwt. The vans were all equipped with air brakes and also with vacuum brakes or through pipes. The vacuum brake pipes were connected between the locomotive and the first 20 wagons, but of these only 6 were fitted with vacuum brakes, the remainder being through piped. Four of the remaining 6 ferry vans, the brake pipes of which were not connected to the "fitted head" of the train, were fitted with vacuum brakes. The combined brake power of the locomotive, the "fitted head" and the hand brake of the brake van was 138·4 tons, or 23·2 per cent of the total weight.

The Damage

7. The damage to the rear 2-car unit of the passenger train included bent head stocks and sole bars, bent centre buffer plates and auto-couplers, and in the rearmost coach extensive damage to the interior, side and door windows. All the buffers of the locomotive were broken, the front of the cab at the leading end of the locomotive was distorted, while at the rear end of the locomotive, where it was overrun by the leading ferry van, with which it became buffer locked, the head stock was bent and the various brake and electric jumper fittings damaged. The underframe equipment of the first 3 ferry vans was also damaged, but the bodies were undamaged.

8. Damage to the permanent way and the signalling equipment was only slight.

EVIDENCE

9. *Signalman C. D. Green* was on duty at Maidstone East signalbox when the accident occurred. The 12.30 Willesden–Ashford goods train had arrived at 15.34 and he had placed it in the centre Reversible line where he had intended to hold it until after the passage of the 14.49 Victoria–Margate passenger train, which arrived at 15.50. The 15.28 Ashford–Willesden Class 5 goods train was offered to Green by the signalman at Hollinghourne at 15.43. He accepted it and received the "Train Entering Section" signal at 15.47. At that time the position at Maidstone East was that the Reversible line was occupied by the Willesden–Ashford goods train, the Up Main platform was occupied by the stock to form the 15.54 Maidstone East–Victoria passenger train, and the Up Main Outer Home signal at Danger and the Distant at Caution.

10. At about 15.52 Green saw the indicator light of track circuit "BE" in advance of the Up Main Outer Home signal light up on his panel and he realised immediately that the train had run past the signal. He was unable to divert the freight train from running into the Up Main platform line to the centre Reversible line, since the facing connection was locked electrically by the occupation of track circuit "BE", nor could he himself take any other action to prevent the train from colliding with the rear of the passenger train. Consequently he immediately rang up the foreman on the Up platform saying something to the effect "Stop the Up freight train". As he was telephoning he heard the train whistle as it came from Week Street tunnel and the collision occurred at 15.53, whereupon he immediately sent the "Obstruction Danger" signal to the neighbouring signalboxes and reported what had happened to Control, asking them to alert the emergency services.

11. Green confirmed that he was authorised to accept trains up to the Up Main Outer Home signal when both Up Main and Reversible lines were blocked in the station. He also said that the distance between the signalbox and the driver's cab of the passenger train on the Up Main platform line was too great to enable him to warn the driver of the impending collision.

12. *Passenger Guard C. W. Woodin*, who was rostered to work the 15.54 Maidstone East–Victoria passenger train, had joined the train while it was standing on the Up Main platform line at about 15.40. Both guard's compartments were in the centre of the train and, after placing his kit in the compartment in the leading unit, he went back to the rear driver's cab to check that the blinds in the indicator panel were red and the hand brake was "off". He also carried out a brake test from the rear cab, but did not notice what brake pressure was being used by the driver to hold the train.

13. Woodin heard a locomotive giving a series of whistles, but did not take much notice of it, and the collision occurred almost immediately after he had returned to his guard's compartment, the impact knocking him to the floor. He immediately went to the assistance of the injured passengers and carried on helping until the ambulance men arrived.

14. *Driver P. Simmons* shunted the empty stock that was to form the 15.54 Maidstone East–Victoria passenger train from the Down Bay to the Up Main platform line at about 15.35, after which he changed cabs and carried out a brake test. Simmons said he heard the whistle of the approaching freight train and he started to look around to see what was happening when the collision occurred. At the time he was holding the train with a brake pressure of approximately 25 lbs./sq. in. The impact of the collision moved the passenger train forward about a coach length, after which he made a full emergency application of the Westinghouse automatic air brake.

15. *Driver E. G. Hicks*, a Hither Green driver of some 8½ years experience, had worked electric locomotive No. E 5010 light to Ashford Up Yard and had backed it on to the ferry vans which were to form the front portion of the 15.28 Ashford–Willesden train. After making a vacuum brake test at the request of a shunter, he was instructed to pull up and set back on to the ferry vans in the adjoining siding, which were to form the rear part of the train. He did not carry out a further brake test when the rear part of the train was connected, nor did he notice if anyone else carried out a test.

16. Hicks said that before the train left the yard, the train guard came up to see him and told him that he had "26 on equals 58, with 14 fitted" (i.e. 26 wagons equalling 58 Basic Wagon Units, with 14 wagons fitted with vacuum brakes and coupled to the locomotive). The guard also told him that the maximum speed for the train was to be 45 m.p.h., and Hicks said he fully understood the instruction and said that he had no intention to disobey it.

17. Hicks thought that they had left Ashford Up Yard slightly early, and they then had clear signals all the way to Maidstone Up Main Distant signal. He looked at the speedometer on going through Harrietsham and found he was travelling at about 49 m.p.h., whereupon he made a partial application of the vacuum brake, which had checked the speed of the train and he considered that this was an adequate running brake test. Hicks thought that the reaction of the train to the brake application was quite normal for a Class 5 train.

18. On passing through Bearsted Station, Hicks estimated that the train was travelling at about 40 m.p.h. He then made a partial application of the locomotive's straight air brake, which he estimated held the train's speed on the falling gradient at between 30 and 35 m.p.h., until he sighted the Maidstone Up Distant signal at Caution whereupon he made a full application of the combined vacuum and air brake. This, according to Hicks, checked the train's speed initially, but then did not give him the reaction he would have expected from a full brake application with a fitted head of 14 wagons. He estimated that they passed the Maidstone Up Outer Home signal, which was at Danger, at about 20 m.p.h., and that the speed at the moment of impact with the rear of the passenger train in Maidstone East Up platform was 15 m.p.h.

19. In answer to questions, Hicks said that all the speeds, apart from that of 49 m.p.h. at Harrietsham and 15 m.p.h. on hitting the rear of the passenger train, were estimated, as he had been driving for the most part with his head out of the window, due to its being a very hot day, and he had not looked at the speedometer. When I pointed out that the evidence from the signalbox records showed that he had left Ashford station at 15.30 and had arrived at Maidstone East at 15.53, the time of the collision, having taken 23 minutes to travel 18 miles, 24 chains, which meant that his overall average speed between the two points was approximately 50 m.p.h., Hicks agreed that it was possible that he had exceeded 45 m.p.h. for a considerable part of the journey, but he did not believe that he was travelling at more than 40 m.p.h. when passing Bearsted.

20. *Fireman C. E. Wallace*, the second man to Driver Hicks on the Ashford—Willesden goods train, confirmed the latter's evidence in general terms, but was unable to be specific regarding the speed of the train at any time during the journey between Ashford and Maidstone. On being questioned concerning what details of the train load had been given to the driver by the guard, he appeared to be somewhat uncertain, but finally maintained that the guard had stated the train included a fitted head of 14 wagons.

21. In connection with the braking of the train after passing Bearsted, Wallace said that Hicks had let the train run free for a bit before checking it with the air brake. On sighting the Maidstone Up Distant signal at Caution, a full application of the combined vacuum and air brake had been made, but after initially checking the speed of the train it was clear that the train was not going to stop at the Outer Home signal. Hicks then put the "sanders" on and blew the whistle, while Wallace screwed on the handbrake of the locomotive.

22. *Goods Guard F. J. Wood*, the guard of the Ashford—Willesden goods train, said he had arrived at Ashford Up Goods Yard at just after 15.20. On passing Guard Keene, who was responsible for preparing the train (see paragraph 34 below), Keene had said "26 equals 58" but had not referred to the size of the fitted head of the train. Wood said he did not question Keene as to the size of the fitted head.

23. Wood said he walked down Siding No. 7 in which the locomotive and front portion of the train was standing, together with Learner Guard Aldridge (see paragraph 26 below), glancing at those ferry vans that had their vacuum pipes connected, but not checking whether they were fitted with vacuum brakes or were merely fitted with a through pipe. In answer to my questions Wood said he glanced at the vacuum hose pipes between each van, but did not look to see how many had the end of their metal pipes painted white, indicating that they were merely through piped, or how many had their pipe ends painted red, indicating that they were actually fitted with vacuum brakes. He considered that it was not his duty, but that of the guard who had prepared the train, to ensure that the train included an adequate fitted head. On reaching the rearmost wagon in Siding No. 7 he carried out a simple brake test by taking the vacuum hose pipe off its "dummy" and feeling the rush of air into the pipe.

24. Wood maintained initially that he had counted 16 fitted wagons behind the locomotive in Siding No. 7, but later agreed that the number of wagons in that siding was considerably less, and that he had also counted those that had their vacuum hoses connected in the rear part of the train which was standing in Siding No. 6. He accepted that he had not carried out a brake test of the whole fitted head after the front portion of the train had been coupled on to the rear portion, again maintaining that this was the duty of the guard who had prepared the train. Prior to leaving Ashford Up Yard, Wood said he had seen Driver Hicks and told him that the maximum speed for the train was 45 m.p.h., and that his load was "26 equals 58". He could not remember whether he had referred to the size of the fitted head or not. In answer to further questions Wood said he did not consider that it was his duty to see the driver of the train when it had been prepared by another guard, but that it was the latter's duty to do so and to give the driver all the necessary details of the load and fitted head.

25. According to Wood, the journey from Ashford to Maidstone East was uneventful. He considered that the speed of the train when passing through Bearsted Station was between 35 and 40 m.p.h. At this point he applied the handbrake of the guard's van as was his usual practice. The journey from Bearsted to

Maidstone appeared to be like a normal run with clear signals at Maidstone East. Speed had been reduced slightly between Bearsted and Maidstone East Up Distant signal, which Wood noted was showing Yellow, but he did not feel any additional braking after passing the Distant signal. Wood said the repeater was in the "On" position and the Outer Home signal was showing Red when he saw them, but both were normally back in that position by the time they could be seen by the guard of a train of this length. The train stopped suddenly with his guard's van in Wheeler Street Tunnel, and after several minutes Driver Hicks arrived and told him that they had collided with the rear of the passenger train: whereupon Wood protected the rear of his train, having first ascertained that the Down line was not obstructed.

26. *Learner Guard D. M. Aldridge*, who had been learning the duties of a goods guard for approximately six weeks prior to the accident, mostly with Guard Wood, said that on reaching Ashford Up Yard at about 15.20 he had walked down the offside of the train to the brakevan, looking at the wagons to make sure that the brake handles were in the "off" position. He did not notice the size of the fitted head, nor had Wood referred to it, although he had said that the train was "26 equals 58". In reply to questions, Aldridge said that, when he was preparing a train of ferry vans, he distinguished between vans fitted with vacuum brakes and those merely through piped by checking whether the vans had vacuum brake cylinders or not. He generally confirmed Wood's evidence concerning the journey from Ashford to Maidstone and was quite definite that he had not been present when Wood had talked to Keene or Hicks. Thus he was unable to confirm any of the details of either conversation.

27. *Yard Foreman W. N. Pullen* was acting as Assistant Yard Manager, Ashford, at the time of the accident. He said that the 26 ferry vans that were to form the 15.28 train to Willesden had arrived at Ashford on the rear of the 11.30 Dover—Ashford Class 7* goods train. Pullen confirmed that the brake van and ferry vans which were to form the rear part of the 15.28 train had been placed in No. 6 Siding, while the balance had been placed in No. 7 Siding.

28. He agreed that it was part of the job of the shunters in the yard to connect up the vacuum pipes of however many wagons were necessary to provide the fitted head laid down for any train, and in this instance the vacuum hoses of the leading 20 wagons were connected, although they were in two sidings, by shunter Keeler. He also agreed that it was the duty of the senior staff, in this case the head shunter, to make sure that the vacuum hoses of the right number of wagons had been coupled up to form the fitted head. Pullen pointed out, however, that the shunting staff were *only responsible for forming the train and that it* was the duty of the guard to make a final check that the composition of the train was correct. Pullen said that it was not the normal practice of his staff to inform the train guard of the number of wagons that had been connected to form a fitted head.

29. *Goods Shunter W. H. J. Keeler* said that he had been one of three shunters who had dealt with the 11.30 Dover—Ashford goods train. The brake van and approximately the rear 20 ferry vans had been placed in Siding No. 6 to form the rear of the 15.28 train to Willesden, while the balance of about 6 ferry vans had been placed in Siding No. 7. The vacuum hoses of the wagons in Siding No. 7 were already connected up, as they had formed part of the fitted head of the Dover—Ashford train, but Keeler had connected the hoses of about 14 wagons in Siding No. 6, so that a total of about 20 wagons would have had their vacuum hoses connected to the locomotive when the train was finally coupled up.

30. Although he knew how to differentiate between a "fitted" and a "piped" ferry van, Keeler said he did not notice how many fitted vans were included in the vans on which he connected the vacuum hoses, but mearly thought that by "piping" up about 20 vans it would be sufficient to provide a 50% fitted head. When the driver of the 15.28 Willesden train had set back with the front portion of the train onto the wagons in Siding No. 6, and the train had been finally coupled up, Keeler asked the driver to make a brake test. Keeler said that, when talking to the driver, he was certain that he made no reference to the fitted head or to its size.

31. *Goods Shunter L. S. Aldridge* said that he had coupled the locomotive to the front portion of the 15.28 Willesden train, which consisted of 8 or 9 ferry vans stabled in Siding No. 7. He subsequently coupled the two portions of the train together. In each case he connected the vacuum hoses but he did *not know the* number of the wagons included in the fitted head.

32. *Head Goods Shunter N. M. Groate*, on coming on duty at 14.00, had noted that the Ashford—Willesden train was marked on his board as "R.F.P." (Ready for Pull). He had called out the train locomotive from No. 2 reception siding and generally supervised its coupling up to the front portion of the train, the drawing forward and setting back onto the rear portion, and the final coupling up of the two portions in No. 6 Siding. He had then asked the driver if the guard had given him details of the load, to which the former had replied "Yes", and the train left the Yard at 15.28.

33. In answer to my questions Groate agreed that it was part of the duties of the shunters to connect up the vacuum hose pipes of however many wagons were necessary to form the fitted heads of the various trains despatched from the yard. He said that it was not his practice, however, *as a head shunter, to inspect* the fitted heads himself, but that he relied upon the information given to him by his shunters. In this instance Keeler had told him he had coupled up the vacuum pipes of about 20 wagons and he had assumed that this would provide an adequate fitted head for the train, although he was aware that, as the train was composed of ferry vans, a number might well be only through piped and not fitted with vacuum brakes. Groate said he did not ask Keeler whether he had checked if the vans he had connected were fitted with vacuum brakes or were merely through piped. In answer to further questions, Groate said that up to the time of the accident it had not been the practice in Ashford Up Yard for the head shunter to be informed how many vacuum braked ferry vans were included in the vans whose hoses had been connected up to form a fitted head. The only figure that had been quoted was the number of wagons that had had the vacuum hoses coupled up.

34. *Goods Guard A. G. Keene* said that after working a train from Ashford to Dover, he prepared the 11.30 Class 7* goods train from Dover to Ashford. While he could not recall its detailed composition, he agreed that it included the ferry vans which later formed the Ashford—Willesden train and that some of these vans had formed part of the fitted head of the train from Dover. He said he was aware that some of the vans in the fitted head of the Dover train were only through piped, while others were fitted with vacuum brakes. Keene assured me that he took this into account when forming the fitted head at Dover, not counting through piped vans as part of the fitted head.

35. Keene said that he had arrived in Ashford Up Yard at 14.30 to prepare the Ashford—Willesden train. He first walked down one side of the front portion of the train in Siding No. 7, checking the wagons and then up the other side noting details of the weights from the wagon labels. He then repeated this procedure with the wagons in Siding No. 6, after which he went to the Yard Foreman's office to give him details of the train. While he was there the train guard, Guard Wood, arrived and Keene said that he told him that the train consisted of "26 equals 58", and that thereafter he had taken no action to complete the preparation of the train.

36. Keene said that he was not present when the two portions of the train were connected up. He agreed that the train he was preparing was Class 5 and therefore required a fitted head of at least 50% of the total number of vehicles and that up to the time he met Guard Wood he had taken no action to check the fitted head. He said that he would normally calculate the fitted head and check its composition after working out the total load of the train, but that on this occasion he did not carry this out, nor did he tell Wood or the Yard Foreman that he had not checked it. Keene agreed that it was part of his job in preparing the train to check the fitted head and that there was no reason why he had not done so. There had been ample time for him to carry out this task before the departure of the train.

37. Keene told me that in calculating the train load he had used the ordinary table for normal wagons and that he had not referred to the special table on page E72 of the Southern Region, South Eastern Division, Working Timetable of Freight Trains that laid down the equivalent Basic Wagon Units (B.W.U.) for the various types of continental ferry vans, although he knew of its existence. He accepted that the train in fact had been 26 wagons, equivalent to 67 B.W.U. and not equivalent to 58 B.W.U., as he had calculated and he agreed that this was 9 B.W.U. in excess of the maximum permitted load for this train.

38. *Carriage and Wagon Examiner G.R.G. Bourne*, who had worked in Ashford Goods Yard for the whole of his railway career of nearly 29 years, said that he had examined the 11.30 Dover—Ashford train on its arrival and had observed that the brakes of the wagons in the fitted head were working correctly. Some of these wagons had later been included in the fitted head of the Ashford—Willesden train. When the locomotive had been connected to the front portion of the latter train, he had carried out a simple brake test by raising the pipe in the last van to check that the air rushed in and that the brake pistons were operating correctly. He did not carry out a test after the two parts of the train had been connected due to the imminent departure of the train, nor did he note how many of the wagons were fitted with vacuum brakes and how many were merely through piped.

39. *Mr. G. F. Huskisson*, the Divisional Manager, South Eastern Division, Southern Region, confirmed that, although the final responsibility for the preparation of goods trains at Ashford was that of a guard, who might or might not be the train guard, and, although there were no detailed written instructions on this, it was clear from custom and practice that Yard staff must ensure that trains were formed in accordance with the instructions contained in the working timetable. If this indicated that a certain train required a fitted head of a number of vehicles, he would have expected the shunters to have made sure that the correct fitted head was provided when forming the train.

40. Mr. Huskisson said that prior to the accident there were no specific instructions to goods guards concerning the preparation of trains when they were solely carrying out this duty and not acting as train guard as well. They relied upon a goods guard's knowledge of train preparation and assumed that he would prepare a train for another guard in the same manner that he would prepare his own train.

41. *Mr. J. H. Blundell, Assistant Divisional Traction Engineer, South Eastern Division*, said that when he examined the Ashford—Willesden goods train at Maidstone East after the accident had occurred the vacuum brake hose pipes of the leading twenty wagons were connected to the locomotive, and that of these only the first, second, third, twelfth, eighteenth and twentieth wagons were actually fitted with vacuum brakes, the remainder being merely through piped. Of the six wagons whose vacuum hoses were not connected to the locomotive, four were fitted with vacuum brakes. He also confirmed that he had tested the vacuum brakes of the leading three wagons on site and found them to be functioning satisfactorily. He had later tested the vacuum brakes of all the other fitted wagons in the train; all had functioned perfectly normally.

42. The brake system and brake gear of the electric locomotive, E.5010, were subjected to a detailed examination and test, and found to be in good condition. The speedometer and speedometer generator at the No. 2 end of the locomotive were also tested and found to be accurate at speeds between 30 and 50 m.p.h.

Train Speed

43. Theoretical calculations carried out by Mr. Blundell showed that if Hicks had braked his train from Bearsted in the manner he described, his speed on passing Bearsted station must have been at least 56 m.p.h.

44. *Mr. M. J. Southgate*, Operating Officer, South Eastern Division, confirmed that the signalbox records of the passage of the Ashford—Willesden goods train were as shown in the table below. The running speeds, based on these times are also included in the table.

Place	Actual Passing Time	Point to Point Times	Point to Point Distances	Approximate Average Point to Point Speeds
Ashford Station	15·30			
		6 mins.	3m. 34 chs.	34 m.p.h.
Hothfield Signalbox	15.36			
		8 mins.	6m. 54 chs.	50 m.p.h.
Lenham Signalbox	15.44			
		4 mins.	4m. 10 chs.	62 m.p.h.
Hollingbourne Signalbox ...	15.48			
		5 mins.	5m. 6 chs.	61 m.p.h.
Maidstone East Station ...	15.53			

The overall average speed from Ashford Station to Maidstone East Station, based on the signalbox records was 50.2 m.p.h.

Braking Tests

45. In view of Driver Hicks' insistence that he had not allowed the speed of his train to exceed 40 m.p.h. on passing Bearsted station, I asked for two special braking tests to be carried out with a train as like as possible to that involved in the collision. These tests were carried out on 20th September, 1967, with a train of 26 ferry vans and an unfitted brakevan of similar load to the train involved in the accident (67 B.W.U.), and hauled by a 2552 h.p. electric locomotive with Driver Hicks at the controls. With a fitted head of 6 vans, during the first test, Hicks was instructed to keep the speed of his train down to between 30 and 35 m.p.h. from when passing Bearsted station until sighting Maidstone Up Main Distant signal, using the locomotive's straight air brake, and then to make a full application of the combined vacuum and air brake (see paragraph 18) on sighting the Distant signal. The train came to rest in approximately 640 yards with the locomotive some 980 yards on the approach side of the Up Main Outer Home signal. The test was then repeated with the same fitted head of 6 vans, but passing Bearsted station at 44 m.p.h. and merely applying 20 lbs./sq. in. pressure on the locomotive's straight air brake until sighting the Distant signal, at which point the train's speed was still only 44 m.p.h. A full application of the combined brake was then again made and the train came to rest with the locomotive still some 500 yards short of the Outer Home signal. In each test the guard applied the handbrake of his brakevan on passing Bearsted station (see paragraph 25).

Conclusions

46. The inability of the train to stop which gave rise to this collision was the result of the faulty preparation of the Ashford—Willesden goods train at Ashford, combined with excessive speed when the train was approaching Maidstone East.

47. In connection with the preparation of the train, Goods Guard Keene, the guard rostered to carry out the preparation, must bear the prime responsibility in failing to ensure that a fitted head of at least 50% (14 vehicles) was provided for a Class 5 train, whereas only 6 vehicles fitted with vacuum brakes were included in the head. Keene was also at fault in incorrectly calculating the weight of the train, with the result that it was 9 B.W.U. in excess of the maximum laid down in the Working Timetable. I consider that the staff of the Up Yard at Ashford, who marshalled the train, were also partially responsible in that they paid little or no attention to whether the ferry vans they coupled up were actually fitted with vacuum brakes, or merely through piped.

48. Goods Guard Wood was also to some extent responsible when, on taking over the train he failed to check the size of the fitted head first and foremost by asking Keene. Had he done so, it is at least possible that this matter would have been rectified, or the train reclassified, prior to leaving Ashford.

49. The braking tests (see paragraph 45) clearly show that, despite the inadequate brake power on the train, it would have come to a stand before reaching Maidstone East Up Main Outer Home signal, if the speed had been as stated by Driver Hicks. The evidence as to speed (see paragraphs 43 and 44) indicates that it had been considerably in excess not only of the 45 m.p.h. claimed by Hicks, but also of the actual maximum permitted speed of 50 m.p.h. Had Hicks been regulating his speed properly, the accident should not have happened in spite of the other shortcomings.

Remarks and Recommendations

50. Before the accident there were no specific instructions on the Southern Region concerning the preparation of freight trains by a guard other than the guard who is to work the train. While this should not have precluded the correct preparation of trains, I feel that such instructions would have ensured that the correct procedure was carried out. Immediately following the accident the Divisional Manager, South Eastern Division issued an instruction within his Division, and I am glad to report that, following discussions with the Railway Officers, the Southern Region have now issued instructions covering the preparation of freight trains throughout the Region. A copy of the instruction will be found at Appendix A.

51. The importance of drivers strictly observing the speed limits laid down for the various classes of train has been stressed on a number of occasions in recent years and the Southern Region have taken various steps to ensure that trains are not driven at speeds in excess of the maximum permitted. I have been assured both by the officers of the British Railway Board and the Southern Region that action has been and will continue to be taken to ensure that speed limits are not exceeded and the extent and nature of the speed checks have been described to me. These appear comprehensive.

52. I have discussed with the Officers of the Southern Region the use of the air brake as opposed to the vacuum brake on trains conveying the ferry vans. The governing factor in adopting this method of working is the ability of the train locomotive to operate air braked trains. All electric, electro-diesel and diesel-electric locomotives on the Southern Region are fitted for this type of working, however, and the Railway Officers have agreed that wherever possible the air brake will be used on trains either composed completely of ferry vans, or with a fitted head of these vans. This will not only eliminate the risk of mistaking vacuum through piped vehicles for fitted vehicles, but it will also increase the general efficiency of the braking of these trains owing to the greater power of the air brake compared with the vacuum brake.

53. Finally, I am informed that it is the policy of the British Railways Board progressively to equip locomotives with the air brake, and to operate air braked trains whenever practicable when air braked stock, including ferry vans, is available.

I have the honour to be,

Sir,

Your obedient Servant,

P. M. OLVER

Major.

APPENDIX A

BRITISH RAILWAYS SOUTHERN REGION INSTRUCTION ON PREPARATION OF FREIGHT TRAINS DATED 20TH JANUARY, 1968

A Guard rostered to prepare a freight train must:—

1. Check that the wagons are correctly marshalled, properly coupled, labelled, and are safe to travel with all doors closed, sheets and chains, etc., secure in accordance with Rules 129 (IV), 131, 157 and 186.
2. Ensure that a tail lamp and side lights, when necessary, are provided in accordance with Rule 121.
3. Ensure that the required brake power is available in the case of fully fitted and partially fitted freight trains as required by the Freight Train Working Timetable.
4. Prepare a journal for the Train Guard and advise the Driver of the load and composition of the train and details of brake power available.
5. Test the brake on fully and partially fitted trains in accordance with the appropriate instructions in the General and Sectional Appendices.

If for any reason the preparation is not completed the supervisor in charge and the Guard must be advised of what has been done and what remains to be done. Should the Train Guard not be available the supervisor in charge must advise the Train Guard immediately he takes over the train.

A Train Guard taking charge of a train which has already been prepared must obtain an assurance that the train preparer has fully and correctly completed his duties. If he is unable to obtain his assurance he must himself check that the train has been properly prepared in all respects.

(866318) Dd. 152054 K 9 1/69 St.S.

COLLISION AT MAIDSTONE EAST STATION — SOUTHERN REGION.

17th JULY, 1967

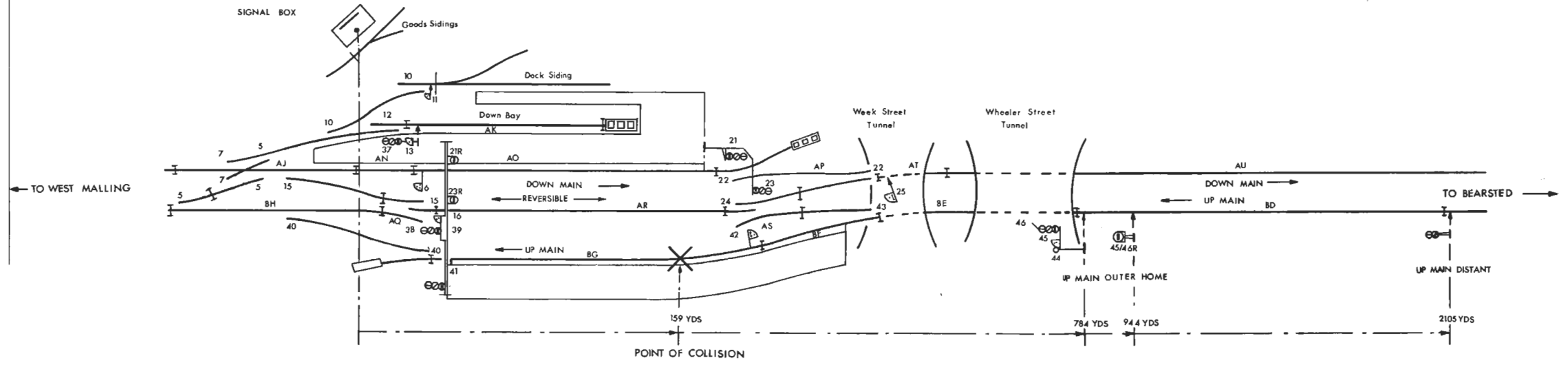


FIGURE I MAIDSTONE EAST SIGNALLING AND TRACK LAYOUT

NOT TO SCALE ALL DISTANCES QUOTED ARE FROM SIGNAL BOX

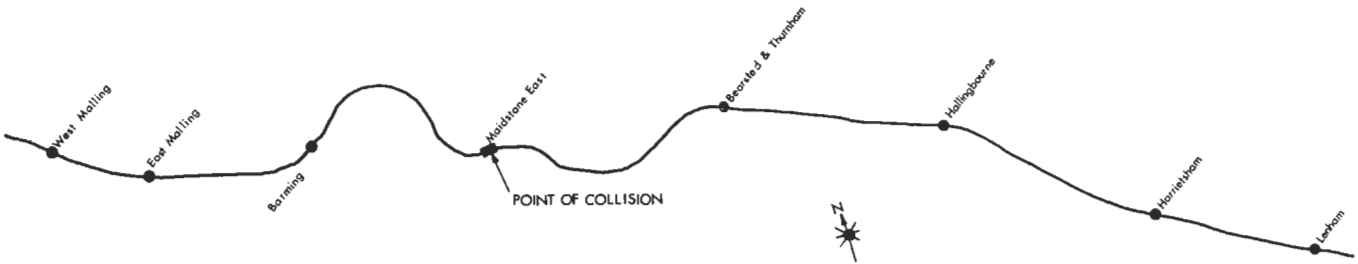
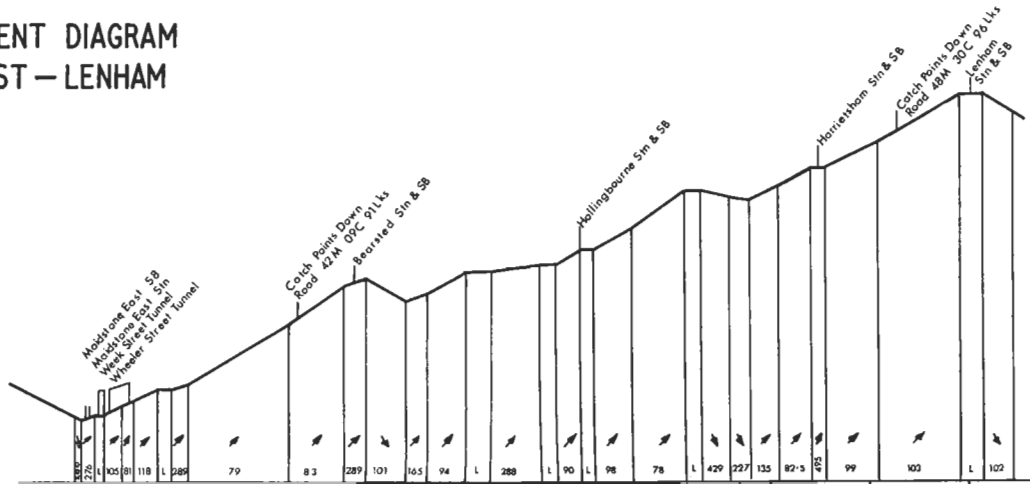


FIGURE III LOCATION DIAGRAM

FIGURE II GRADIENT DIAGRAM
MAIDSTONE EAST — LENHAM



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