RAILWAY · ACCIDENT

REPORT OF INQUIRY

INTO

THE COLLISION THAT OCCURRED

AT GORMANSTON RAILWAY STATION

ON 21ST OCTOBER, 1974.

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Department of Transport and Power,

Dublin.

JANUARY, 1976.

RAILWAY ACCIDENT AT GORMANSTON RAILWAY STATION ON 21st OCTOBER, 1974

1. The Minister for Transport and Power, by order dated the 29th day of October, 1974, directed that an Inquiry be made by Mr [redacted] B.E., M.I.E.I. into the causes of an accident which occurred at Gormanston Railway Station at about 07.40 hours on Monday, 21st October, 1974.

2. I inspected the site of the accident on 21st October, 1974, and I heard evidence from persons concerned and from officers of Coras Iompair Eireann on the 5th, 6th and 7th February, 1975, at the Land Commission Court Room, 24 Upper Merrion Street, Dublin. The evidence was not taken on oath. The evidence, with the exception of certain medical evidence, was heard in public. I have the honour to report as follows:-

3. Three Coras Iompair Eireann passenger trains were involved. The 06.50 hours Dundalk/Dublin/Bray Up train, which was scheduled to stop at Gormanston Station, was standing at the Up platform when the accident occurred. The 07.00 hours Connolly Station to Skerries empty Down train had just reached Gormanston Station when it was overtaken and struck by the 07.00 hours Pearse Station to Howth Junction empty Down train with no driver aboard. One vehicle of the 07.00 ex Connolly Station train was immediately derailed by the collision and struck the side of the 06.50 ex Dundalk Up train.

4. It is regretted that as a result of the accident two passengers were killed and about 26 passengers were injured. Three C.I.E. employees (the guards of the three trains) were also injured. Twelve of the more seriously injured passengers were removed to hospital for treatment.

5. It was almost daylight at the time of the accident, weather conditions were clear, dry and cold.

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6. Following the accident the Up and Down lines were blocked. Single line working was introduced over the Up line at 19.15 hours on the evening of 21 October. The Down line was opened for traffic at 17.55 hours on 24th October, 1974.

DESCRIPTION

Site

7. Gormanston Station is located on the main Dublin/Dundalk double line and is about 24 miles North of Connolly Station (Dublin). There are two platforms at Gormanston. At the time of the accident the adjoining Stations at which the Signal Cabins were switched-in were, in the Dublin direction - Skerries, and in the Dundalk direction - Drogheda. The Signal Cabins at Laytown and Mosney, (which are located between Drogheda and Gormanston) and at Balbriggan (which is located between Gormanston and Skerries), were not switched-in.

There is a slight down gradient from both directions into Gormanston Station. The Booking Office and Signal Cabin are on the Down platform. There is no public telephone at Gormanston Station.

The trains

8. The 06.50 hours Up train from Dundalk consisted of a locomotive (B.219), two heating vans, 6 standard passenger carriages and one guard's van. There were between 75 and 80 passengers on this train.

The 07.00 hours empty Down train from Connolly Station, Dublin, was a railcar set with a railcar at either end and two intermediate carriages.

The 07.00 hours empty Down train from Pearse Station, Dublin, was a push/pull set and consisted of a control car, two standard passenger carriages, a standard brake van and a locomotive (B.202). The locomotive was pushing the train.

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The course of the accident and damage caused

9. The 07.00 ex Connolly Station Down train departed from Fairview Depot for Skerries. During the course of its journey northwards signalmen along the line became aware that it was being followed by a runaway train and the driver was instructed to proceed at top speed beyond his scheduled stopping place.

The 07.00 ex Pearse Station Down train to Howth Junction had come to a stop just north of Connolly Station. While the driver was examining his train it restarted before he could climb aboard. It ran away at high speed and eventually overtook and crashed into the rear of the 07.00 ex Connolly Station train as both trains approached Gormanston Station.

As a result of this collision one vehicle of the 07.00 ex Connolly Station train became derailed and crashed into the side of the stationary 06.50 ex Dundalk train. After the collision both Down trains continued to move forward and eventually came to a halt some distance north of Gormanston Station. The 07.00 ex Pearse Station train was completely derailed. The three leading vehicles of the 07.00 ex Connolly Station train remained on the rails. Damage to rolling stock in the three trains was very extensive. Damage to the permanent way was substantial.

EVIDENCE

10. Mr. [redacted] Assistant Solicitor, C.I.E. outlined the course of the accident. He said that push/pull sets were only used by CIE on the Dublin Suburban Services and that the locomotive is always at the southern end of these trains.

Push/pull train sets are in use in many countries including Great Britain, Denmark, France and the United States.

Mr. [redacted] stated that the driver of the 07.00 ex Pearse Station push/pull train, Mr. Rogers, had reported late for duty on the morning of the accident. Driver [redacted] and Guard [redacted] had left the train after it came to a halt outside Connolly Station and the train restarted before the driver could climb aboard. Mr. [redacted] drew attention to the failure of Guard [redacted] to exchange hand signals with the driver, as required by the Rules, before the train moved off.

Mr. [redacted] outlined the measures taken to deal with the runaway train. The speeds of the 07.00 ex Connolly and the 07.00 ex Pearse Down trains as they approached Gormanston Station had been estimated at about 68 m.p.h. and 60 m.p.h. respectively.

11. Mr. [redacted] described the positions in which the controls of the 07.00 ex Pearse train were found after the accident - Forward/ reverse lever in forward position, power controller in maximum power position, brake handle in "off" position and vigilance control isolating handle in "isolate" position, which meant that the safety control equipment was inoperative.

Mr. [redacted] explained that bringing the vigilance control isolating handle to the "isolate" position involved breaking a wire seal. The unauthorised practice of breaking these wire seals to facilitate shunting movements had grown up at Pearse Station and on the Saturday prior to the accident the seal in the control cab on this particular push/pull set had been broken by a shunter at Pearse Station. Instructions against breaking these seals and setting out the proper procedures for releasing brakes when shunting push/pull train sets had been issued by C.I.E.

12. Mr. P. [redacted] Technical Assistant, C.I.E., stated that when he inspected the setting of the controls in the control cab of the 07.00 hours ex Pearse Station train at about 09.20 hours on the day of the accident he found the main power controller in notch 8 (maximum power position), the forward/reverse lever in the forward position, the brake application handle in the "off" position and the safety control isolating handle in the "isolate" position.

Mr. [redacted] saw that the wire for sealing the safety control isolating handle in the "run" position was broken. The broken sealing wire was still partly attached to the isolating handle housing.

Mr [redacted] had estimated the speeds of the Down trains as they approached Gormanston Station at 60 m.p.h. for the 07.00 ex Connolly Station and 90 m.p.h. for the 07.00 ex Pearse Station. These estimates were based on the times shown in the signal cabin train register books.

13. Mr. [redacted], Asst. Mechanical Engineer, C.I.E., had calculated that the maximum speeds which the Down trains would have been capable of achieving as they approached Gormanston Station were 68.5 m.p.h. for the 07.00 ex Connolly Station train and 80.6 m.p.h. for the 07.00 ex Pearse Station train.

14. Driver [redacted] stated that he had taken the 07.00 Connolly/ Skerries railcar train from Fairview Shed. The first indication he had that anything was amiss was when he saw the signalman at Rush waving his hands as the train passed through the Station. At Skerries, which was his scheduled stop, he had slowed down to about 5 m.p.h. when he was told by the local signalman that there was a runaway train following his train and to keep going. He was travelling at maximum speed as his train approached Gormanston. He saw the runaway train approaching and it ran into the back of his train as it was about halfway along the Gormanston platform.

15. Guard [redacted] was the guard on the 07.00 ex Connolly Station train. He did not know about the runaway train until his train reached Skerries. Approaching Gormanston he was in the driver's compartment for safety and was watching-out for the runaway train. His train was opposite the Station Platform when it was first hit by the runaway train. One vehicle of his train was derailed by the impact of the collision.

16. Guard [redacted] said that he was the guard on the 07.00 ex Pearse push/pull train. He was rested and fit for duty when he signed-on at 06.15 hours. He had been a guard for about 8 years. He had never previously worked a push/pull train with Driver Rogers. He had not observed the coupling-up of the locomotive of his train to the other vehicles before leaving Pearse Station. He was not aware that the shunter had experienced any difficulty in the coupling-up operation.

Guard [redacted] checked that before his train left Pearse Station there was no one other than himself and the driver aboard. He did not advise the driver of the load and make-up of his train as required by Rule. He could not say if he had read the train vacuum gauge before leaving Pearse Station. He advised the driver verbally that the train was ready to start. The train was stopped by signals at Connolly No. 7 platform. When the signals were cleared the train proceeded across the crossover to the Northern line at a reasonably fast speed.

17. Guar [redacted] described how the train then came to a halt. The driver approached him through the train and said that there had been an emergency application of the brake. They both alighted and went to the rear of the train. As he approached the rear of the train he heard a hissing noise which is usual when a bag (vacuum hose) is broken. He found the connection on the small air bag (high vacuum hose) disconnected and re-made the connection. He had shouted to the driver that he had located

Guar[redacted]ad not been instructed as to how vacuum hoses should be coupled-up, but he understood that a break in the air bags would cause an emergency brake application. He had not pulled the carriage brake strings. While the train was stopped he had not heard the vigilance system bell ringing. When the vacuum hose was re-coupled he reboarded the train. At this stage he assumed the driver was already aboard. The train had been stopped for 5 to 6 minutes. When he reached the brake van the vacuum gauge was reading 14" to 15" Hg. and rising. When it reached 17" Hg. he pressed the bell twice, which he thought was the proper signal, and the train moved off. The bell signals were not repeated. In his experience drivers of push/pull trains never repeated bell signals. He had not seen anyone other than Drive[redacted]in the vicinity of the train while it was stopped.

18. Guar[redacted]was aware that his train was scheduled to stop at Howth Junction. He had been standing in the Guard's van at the rear of the train and as it approached Howth Junction he walked up through the train and later returned to the guard's van. When the train continued on the main line past Howth Junction he assumed that there had been a change in the running schedule. He was convinced that the driver was aboard and at the controls.

Guard[redacted]as aware that the guard is in charge of a train. He felt that he must have lost concentration sometime after passing through Howth Junction. He knew how to operate the brake in the Guard's van. He did not hear any detonators explode. At no stage was he aware that his train was travelling at very high speed. He was in the rear guard's van at the time of the collision. On one previous occasion a vacuum hose became disconnected on a train on which he was the Guard just after the train had crossed-over onto the Northern line outside Connolly Station.

Guard [redacted] said that he did not receive copies of the Weekly Circular for periods of annual or sick leave. He had the C.I.E. Rule Book and Signalling Regulations which he assumed to apply over the line from Bray to Skerries. He had not got a copy of the Appendix to the Working Timetable nor had he copies of the GNR Rule Book and Signalling Regulations.

19. Driver [redacted] stated that he was the driver of the 07.00 ex Pearse Station Down push/pull train. He was rested and fit for duty when he arrived at Connolly Shed at about 06.10 hours and about 20 minutes late. He did not sign-on for duty that morning He had been driving push/pull trains for about two years. At Pearse Station he did not supervise the coupling-up of his locomotive to the other vehicles of the train set. He was unaware that the shunter who coupled-up his locomotive had not coupled-up a push/pull train before that morning. When he entered the control cab he saw that the safety control equipment isolating handle was in the "isolate" position. He placed the isolating handle in the "run" position. He did not see the sealing wire.

Drive [redacted] so stated that it was not unusual to find control cab safety control equipment isolating handles in the "isolate" position when taking over push/pull train sets at Westland Row (Pearse Station). It was his practice, in such instances, to reset the handles in the "run" position. If the sealing wire was available he would tie the handle in the "run" position. If the sealing wire was not available he would ask an Inspector to reseal the handle. There was no Inspector available on the morning of the collision.

Driver [redacted] was unaware of the instruction issued in the Weekly Circular dated 11-7-70 which required the presence of a second man in the control cab if the isolating handle was unsealed. He had never reported an instance where he found safety control equipment handles unsealed.

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Driver [redacted] thought that the vacuum pressure gauge was reading about 25" Hg. when his train moved off from Pearse Station. There was no unusual delay in the vacuum build-up. The guard had given him a verbal instruction that the train was ready to start. When guards were near drivers they did not normally use the bell signal.

20. Drive [redacted] estimated his speed at 10 m.p.h. as the train went across the crossover to the Northern line outside Connolly Station. After the brake application he alighted from the train together with the guard. He asked the guard about the vacuum brakes, while he himself went to examine the locomotive.

Driver [redacted] had no reason to alter the setting of the safety control isolating handle since he had placed it in the "run" position before leaving Pearse Station. He could not be 100% certain as to the settings in which the various controls were when he left the control cab. When the train stopped after the brake application the vigilance bell did not ring. He did not pull any of the carriage brake strings.

21. After seeing the guard coupling-up the disconnected vacuum hose Driver [redacted] examined the locomotive and found nothing wrong. At this time the locomotive engine was running at idling speed. He saw the guard re-board the train. He then alighted from the locomotive and as he was walking back to rejoin the train it moved-off. He was unsuccessful in his attempts to climb aboard. He then climbed aboard Drive [redacted] s engine which was nearby and gave a series of "crow" whistles. He had no recollection of having had any conversation with Driver [redacted] He then proceeded to the East Wall Signal Cabin where he told the signalman to treat his train as a runaway train. He also spoke on the telephone to the signalman at Howth Junction and told him to treat his train as a runaway and to let it down the main line.

22. Driver [redacted] was on sick leave for about 4 months prior to 9th September, 1974. He did not receive copies of the Weekly Circular issued during this period. He resumed duty as a driver on his return from sick leave. A second driver travelled with him on his first day back at work. While on sick leave he had been treated by a C.I.E. panel doctor who prescribed tablets to be taken three times daily. He did not know what type of tablets the doctor had prescribed. The C.I.E. panel doctor was aware that he was employed as a driver. Driver [redacted] stopped taking the tablets sometime before he resumed duty. He was not examined by any other doctor before resuming duty.

23. Driver [redacted] described an incident at Lansdowne Road Station on 9th October, 1973, when his locomotive engine overloaded as the train was making a scheduled stop. The fault bell in the control cab rang. He lapped the brake and while he was on the platform before reboarding the train the brake "lapped-off" and the train moved off under the track gradient. The guard applied his brake and stopped the train. He had been instructed in the safety control equipment on push/pull trains.

24. Driver [redacted] said that he was the driver of the 06.50 hours ex Dundalk Up train. His train left Drogheda at 07.22 hours, stopped as scheduled at Laytown, and arrived at Gormanston at 07.36 hours. He was stopped there for 3 to 4 minutes before the collision occurred. The Starting Signal was against him up to the time of the collision. He was unaware that there was a runaway train on the Down line until he saw the two trains approaching at speed. The push/pull train set ran into the rear

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of the railcar train set. The railcar train then folded out towards his train.

25. Guar[redacted] who was the guard on the 06.50 hours ex Dundalk Up train stated that he was unaware that anything was amiss until he heard the noise of an approaching train. He next saw the railcar train set with sparks flying from the wheels mount the station platform and move over towards his train.

26. Driver[redacted] said that he was on his locomotive near East Wall junction and about 150 to 200 yards from the stopped push/pull train set when he saw it move-off. After the train had moved-off Drive[redacted] came into his cab, started to sound the hooter and said that his train had run away. He told Driver Rogers that the train would not go far on account of the "deadman". In further conversation Driver Rogers intimated that the "deadman" was either isolated or disconnected and that the "deadman" equipment would not stop his train.

27. Signalma[redacted] who was on duty in the East Wall Signal Cabin told how the 07.00 hours ex Pearse Station train passed his cabin at about 07.20 hours. He thought the train locomotive engine was running at high speed. About 5 minutes later Driver Rogers entered the Signal Cabin, excited and agitated, and told him that his train was running away. Signalma[redacted] telephoned Howth Junction Signal Cabin and advised the signalman there to keep the runaway train on the main line. He heard Driver Rogers speaking to the Howth Junction Signalman and saying that the guard would notice something amiss when the train did not stop at Howth Junction. While Drive[redacted] was in the East Wall Signal Cabin no reference was made to the status of the "deadman" equipment on the runaway train. The Howth Junction Signalman later advised East Wall that the runaway train had passed his Signal Cabin and was travelling at 60 to 70 miles per hour.

Signalma[redacted] advised Connolly Central Signal Cabin

[redacted] running out of control. /...

28. Acting Supervisor [redacted] stated that he was on duty at Connolly Shed on the morning of 21st October. His responsibilities included seeing that drivers reported on time, signed-on and were fit for duty. Driver [redacted] who was scheduled to report for duty at 05.50 hours did not arrive until about 06.25 hours. In his opinion Driver [redacted] was fit for duty when he arrived. Supervisor [redacted] said that most drivers signed-on. At about 07.36 hours Driver [redacted] reported that his train had run away.

29. Controlle[redacted] was on duty in Central Control on the morning of 21st October. At 07.27 hours the signalman at Howth Junction telephoned Central Control to say that the 07.00 ex Pearse Station train was running away behind the 07.00 ex Connolly Station train and that there was a time interval of 7 minutes between the two trains as they passed Howth Junction. The signalman had estimated the speed of the runaway train at 70 m.p.h.

Controlle[redacted] said that it was his responsibility to decide how best to deal with the situation. Following a telephone conversation with the signalman at Drogheda he decided to run the railcar train set into the Drogheda Goods Yard. The first set of suitable facing points on the Down line that could be manned at that particular time was at Drogheda. He was not at that stage aware that the 06.50 ex Dundalk train was on the Up line. Had he been aware of the presence of the Up train he thought he would still have made the same decision.

30. Relief Signalma[redacted] was on duty in the Howth Junction Signal Cabin. The 07.00 ex Connolly Station Down Train passed Howth Junction at about 07.20 hours. He was advised by the signalman at East Wall that the 07.00 ex Pearse Station Down train was approaching with no driver aboard. At that time the points were made for the Howth branch line and there was a train on the Up line from Howth. He set the points for the Main Down Line.

The signals were at Danger. The runaway train went past his Signal Cabin like an express. He did not have sufficient time to put down detonators before the runaway train reached Howth Junction. He did not see anyone on the runaway train as it passed by.

31. Relief Signalman [redacted] was on duty at Rush/Lusk. He had sufficient time between the passage of the 07.00 hours ex Connolly Station and the 07.00 ex Pearse Station trains to place detonators on the line. The detonators were exploded by the runaway train. He thought this train passed his Signal Cabin faster than an express train.

32. Signalman [redacted] who was on duty at Skerries Signal Cabin stated that the 07.00 ex Connolly Station to Skerries Down train reached Skerries at about 07.33 hours. Knowing there was a runaway train following this train and that it would take up to 10 minutes to cross the 07.00 ex Connolly train onto the Up line, he told the driver, before the train had stopped, to keep going as fast as he could. He then restored the signals to Danger and placed detonators on the line. Two to three minutes later the runaway train passed his Signal Cabin travelling very fast. He heard the detonators explode.

33. Signalman [redacted] said that he was on duty at Gormanston Station at the time of the collision. The 06.50 hours ex Dundalk Up train arrived at Gormanston at 07.34 and was scheduled to depart at 07.37. At 07.31 hours he was advised by the Signalman at Skerries that the 07.00 hours ex Pearse Station train was a runaway and to keep the line clear to Drogheda. At 07.36 hours he received the "Train Entering Section" signal for the 07.00 ex Connolly Station train. Sixteen to twenty seconds later he got the same signal for the 07.00 ex Pearse Station train. He then described how he saw the two Down trains crossing the Delvin Viaduct.

The following train hit the leading train as it was still on the Dublin side of the Signal Cabin. One coach of the leading train was lifted up and it crashed against the 06.50 hours ex Dundalk Up train. The collision occurred at 07.40 hours. It was not quite daylight at that time.

Signalman [redacted] had held the 06.50 hours ex Dundalk Up train at Gormanston because he had already been advised that there was a runaway train on the Down line. He did not have time to make any contact with the crew of the Up train. He was the only C.I.E. employee then on duty at Gormanston Station.

34. Signalman [redacted] was on duty at Drogheda. The 06.50 hours ex Dundalk Up train departed from Drogheda at 07.22. As the Signal Cabins at Laytown and Mosney were not switched-in at that time the Up train could not be signalled to stop until it reached Gormanston. At 07.30 he was advised that the 07.00 hours ex Pearse Station Down train was running out of control.

35. Acting Foreman [redacted] stated that he was on duty at Pearse Station on the evening of Saturday,19th October. The shunters there are under his control. He had not previously been instructed in the shunting of push/pull trains but he had been shown how to hook up a locomotive to complete a train. He did not think that any of the Pearse Station shunters had been instructed in the shunting of push/pull trains. Prior to the collision on 21st October he was unaware that it was not possible to create a vacuum on a push/pull train set with the locomotive at the control cab end without having the safety control equipment isolated.

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Foreman [redacted] said that he had never seen an instruction dated 23rd August, 1974, from the Acting Station Master detailing how brakes on push/pull train sets should be released during shunting. He did not know which handle in the cab isolated the safety control equipment. The shunters at Pearse Station considered the procedure outlined in the instruction dated 23rd August, 1974, unsafe as it involved shunting under the engine brake only.

36. Shunter [redacted] stated that he was on duty at Pearse Station on the evening of 19th October. During his tour of duty he shunted two push/pull train sets with the pilot engine attached to the control cab end. In each instance he coupled up the vacuum hoses and isolated the safety control equipment by breaking the sealing wire on the isolating handle. He left the broken sealing wires on the isolating handles.

Shunter [redacted] said that he had been trained in this method of shunting by other shunters. He did not know who resealed the isolating handles subsequently. It was only necessary to shunt push/pull trains with pilot engines on Saturday nights when the train locomotives were taken elsewhere for servicing. He was aware that it was not possible to create a vacuum on a push/pull train with the engine at the control cab end without isolating the safety control equipment.

He was also aware, prior to the collision, that the brakes could be released by pulling the carriage vacuum strings. Shunters at Pearse Station considered the shunting of push/pull trains under the engine brake only to be unsafe. He had not seen an instruction dated 23rd August from the Acting Station Mast

37. Shunter [redacted] stated that he was on duty at Pearse Station on the morning of 21st October. He coupled-up the locomotive of the 07.00 hours ex Pearse Station train to the other vehicles of the train set. The driver did not supervise this operation.

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He had never completely coupled a locomotive to a push/pull train set prior to that day. When the coupling-up was completed he heard a leak from somewhere along the train which suggested that air was getting into the braking system. The sound stopped before he discovered its source so he took no further action. He thought it took 3 to 4 minutes to form the brake.

Shunter [redacted] said that he had not seen the instruction dated 23rd August issued by the Acting Station Master. He had not had instruction in the shunting of push/pull trains. He was not familiar with the safety equipment isolating handle in the control cabs of push/pull trains.

38. District Manager [redacted] stated that about 6 to 8 weeks prior to 21st August Mr [redacted] Area Running Superintendent, had told him that seals on safety control isolating equipment handles were being broken at Pearse Station. Mr [redacted] spoke to him again about this matter on 20/21st August and he then wrote to the Station Master at Pearse Station setting out the correct procedure for releasing brakes on push/pull trains during shunting and asking the Station Master to have his Inspector look into the problem and to report back in a week or two. He got no reply from the Station Master. Follow-up action was not taken until after the collision.

39. Acting Station Master [redacted] told the enquiry that he had been at Pearse Station since July, 1973. Push/pull trains had been shunted at Pearse Station since April, 1973. Nothing in connection with the shunting of push/pull trains came to his notice until August, 1974. Following receipt of the District Manager's letter dealing with broken seals he issued an instruction to the Inspector on 23rd August, with a copy for the shunters, detailing the proper procedure for releasing brakes when shunting push/pull trains with a pilot engine at the control cab end. This was that brakes were to be released by pulling carriage brake stringers and the train was to be shunted

The instruction told the Inspector to see that this arrangement was carried out and to advise him of any difficulties that might come to notice in implementing the procedure. Both copies of the instruction were handed to the Inspector's office, where the shunters book-in. As he had no reaction to the instruction he assumed it had been accepted and implemented. It was only subsequent to the collision that he discovered that some staff said they had not received the instruction. Following the collision a new instruction was issued for which each staff member signed. Mr [redacted] stated that he had no recollection of a 1953 instruction relating to the shunting of railcars which stated that vacuum hoses were not to be coupled to pilot engines. His contact with shunters was through the Inspector and he checked the Inspector's diary each morning and evening. The diary would record any difficulties or problems that arose. Mr. [redacted] said that following the collision the shunting staff, where possible, arranged shunting operations in such a way that it was unnecessary to have pilot engines attached to the control cab ends of push/pull trains. In Heuston Station it had always been the practice to shunt with the full train brake. When a further instruction was issued subsequent to the collision the shunters objected. They had previously always shunted under the full train brake and they interpreted this instruction to mean loose shunting. He himself accepted that the instruction was in accordance with the Rules.

40. Mr [redacted], Chief Mechanical Engineer's Department, stated that the 07.00 ex Pearse Station train set was brought to Inchicore Works after the collision where, after certain repairs had been carried out, various items of safety equipment on the train were subjected to functional tests. He summarised these tests as follows:-

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(a) when the electrical cables were re-connected to the vigilance control box the safety cont ol systems operated satisfactorily;

(b) the vacuum switch operated satisfactorily and would cut power in the event of the operation of the driver's safety control;

(c) the guard's brake valves operated normally;

(d) the pressure switch operated satisfactorily and would prevent power being applied from the locomotive if air pressure was not available on the control car;

(e) the vacuum gauges operated normally.

41. Mr. [redacted]hen described tests carried out on a push/pull train set to determine the combination of the settings of the controls in the control cab under which it would run away. He was satisfied that only when the safety control equipment was isolated, the brake was off, the forward/reverse lever was in the forward position and the power controller was in any one of notches 1 to 8 would the train run away under power.
Mr. [redacted]next detailed a test carried out to ascertain where a push/pull train would stop if the small vacuum hose was forced apart when traversing the crossover to the Northern line outside Connolly Station at 10 m.p.h. When the hose was disconnected 53 ft. south of the northern set of switches of the crossover the train stopped 750 feet short of where the 07.00 ex Pearse train was said to have stopped on 21st October. There is a speed limit of 10 m.p.h. over the crossover. In two further tests at 10 m.p.h. all hose connection remained intact when the train traversed the crossover.

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Mr. [redacted] said that further tests showed that if the small vacuum hose did come off and was reconnected it was not possible for a push/pull train to move away with the controls in the position in which they were found in the 07.00 ex Pearse train after the collision as the brakes were not fully released while the locomotive attempted to take maximum power. In these tests the vacuum was 21"Hg. With a vacuum of 21"Hg. there was sufficient differential pressure to trip the locomotive overloads. If the vacuum had been just something more than 16"Hg. which is the minimum at which power can be taken from the locomotive, it might be equivalent to the brake being fully released.

In a test of the audibility of detonators placed on the line at various points between Connolly Station and Gormanston the sound of the detonators exploding was heard in the front of the train; further back along the train the sound of the explosions might or might not be heard.

42. Mr [redacted] Chief Mechanical Engineer, stated that the safety control equipment handle was required for certain operational situations as well as for emergency situations. In normal operations on the Dublin suburban system there would be no need to isolate this handle. The handle is sealed with wire as a supervisory control. He would see disadvantages in using heavier wire. There could be disadvantages and advantages in using a lock on the handle or in having the handle outside the control cab.

Mr [redacted] agreed that if there was a pressure differential of only 1"Hg. in the vacuum system the brake might not hold. He considered the shunting method outlined in Mr. Brady's instruction dated 23rd August, 1974, quite safe for Pearse Station There would not be sufficient space at the servicing depot for the complete push/pull train sets when the locomotives were being serviced at the weekends.

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43. Inspector [redacted] stated that he was on duty at Connolly Shed on the morning of the collision. The weather was cold and dry. Later that morning he met Driver Rogers and asked him what had happened. Drive[redacted] told him that having gone over the crossover he lost his brake. After Guard[redacted] had recoupled the vacuum hose and before he, Driver Rogers, reboarded the train it passed him as if someone was driving it. Drive[redacted] told him he could not remember if he had applied the brake before leaving his cab.

Inspecto[redacted] confirmed that on a few occasions he had been asked by drivers to reseal safety control equipment isolating handles.

Inspecto[redacted] said that during 1972 he had instructed and trained drivers, including Driver[redacted] in the operation of push/pull trains. The instruction included the braking and vigilance system. Since then he had on occasions travelled on locomotives with Driver[redacted].

44. Inspecto[redacted] could not recollect the names of the 4 or 5 Pearse Station shunters who had attended demonstrations in the coupling-up and shunting of push/pull train sets. About one hour was allowed for training each shunter. Guard[redacted] had not attended a course in the operation of push/pull trains.

45. Mr. [redacted] Area Rail Manager, said that Weekly Circulars were placed beside the signing-on book at Connolly Shed. Since the collision drivers were required to sign for them. Spare copies of current and back issues were available if requested. The Trade Union representing the guards had requested refresher courses in the Rules and Regulations for their members but it had not yet been possible to arrange these courses owing to expanded demands on the available staff.

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46. Mr. [redacted] Area Running Superintendent, stated that on the day of the collision seals on the 9 other push/pull train sets operating on the Dublin suburban system were checked. The safety control equipment isolating handle in the control cab of one train set was unsealed; this train set had been stabled overnight at Pearse Station. On a second train set the isolating handle was incorrectly sealed. Over the previous 12 months Inspectors had reported many broken seals. His information was that the unauthorised breaking of seals, for which he was satisfied drivers were not responsible, was prevalent only at Pearse Station. He discussed the problem with the District Manager who was responsible for Pearse Station. It had not been possible to release drivers to attend refresher courses in the Rules and Regulations due to staff shortages and wastage over the past two years. He hoped to release drivers from April, 1975 to attend refresher courses.

Driver [redacted] was scheduled to report for duty at 05.50 hours on 21st October. He reported for duty at about 05.25 hours. He did not sign-on that day. He did not sign-on any day between 9th September, when he resumed duty after sick leave, and the day of the collision.

47. Mr. [redacted] Mechanical Engineer, said that the coaches in the 07.00 ex Pearse push/pull train had been worked in the same formation since 11th October and had been serviced on 18th October. The locomotive had been serviced on 19th October.

Couplings on the small vacuum hose could fall apart but this would not happen under normal train operations.

Prior to the collision, about 150 seals were used each month in the Fairview Depot to reseal unsealed safety control equipment isolating handles on locomotives, push/pull trains and rail cars. Since the collision the usage is about 50 seals per month.

48. Mr [redacted] Personnel and Methods Officer, C.I.E. explained that the current Drivers' Manual was issued in 1964. It does not include subsequent instructions which were issued by way of Notices. A new Manual is now in course of preparation and will be issued during 1975.

Mr. [redacted] then said that the present C.I.E. Rule Book was issued in 1967. This Rule Book is used by C.I.E. drivers (other than ex G.N.R. drivers) throughout the Dublin suburban system. The C.I.E. ex G.N.R. drivers use the 1949 G.N.R. Rule Book on the former G.N.R. parts of the Dublin suburban system and the C.I.E. Rule Book elsewhere. C.I.E. Signalling Regulations applied south of Connolly Station and G.N.R. Signalling Regulations applied north of Connolly Station. His objective was to have one uniform set of Signalling Regulations and one uniform Appendix to the Working Timetable which might be in the form of an Operations Manual. As in the case of Rule Books the C.I.E. ex G.N.R. drivers used both the G.N.R. and C.I.E. Signalling Regulations and Appendices to the Working Timetable.

Mr [redacted] mentioned that the common nature of the C.I.E. and G.N.R. Rules and Regulations should not be overlooked. He agreed that C.I.E. Rule 141(e) which states "Where bell communication is provided the Guard must give two bell signals to the Driver to start after obtaining an intimation from the person in charge of the platform that all is right for the train to proceed. Bell signals must be repeated by Driver" was not included in the equivalent G.N.R. Rule.

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He also agreed that while Rule 129(4)(b) required the Guard to satisfy himself before starting his train at the commencement of the journey that all couplings between the vehicles are properly connected, the Instructions to Drivers of Push/Pull Trains state that drivers should check that connections between the locomotive and connecting car are properly made.
Rule 50 does not specify the hand signals that the Driver of a passenger train must exchange with the Guard before restarting his train in the event of it being stopped from an exceptional cause (Rule 141 (f)).

49. Mr. [redacted] Chief Solicitor, C.I.E., in a concluding submission said that the accident occurred not through any lack of adequate Rules and Regulations but through human error. There were five separate factors any one of which, if observed, would have prevented the occurrence after the push/pull train had come to a halt near the East Wall Signal Cabin. These factors were:-

(i) the non-observance of Rule 141(f);

(ii) the hand brake in the control cab was left in the "off" position;

(iii) the power controller was not in the "off" position;

(iv) the safety control equipment isolating handle was in the "isolate" position;

(v) the brake in the guard's van was not used to stop the train after it had restarted.

50. Dr. [redacted] Chief Medical Officer, C.I.E. said that Driver [redacted] had been on sick leave from 13th May, 1974 to 9th September, 1974. During this period of sick leave he had been treated by a C.I.E. panel doctor who prescribed a treatment that included the use of tranquilliser tablets. He stated that prior to the collision he had been unaware of the treatment that had been prescribed for Drive[redacted].

Dr. [redacted] confirmed that both Driver [redacted] and Guar[redacted] had been examined after the collision and nothing had come to light, either medically or psychologically, that had any significance to the circumstances of the accident.

C O N C L U S I O N S

51. The accident was caused by the 07.00 hours ex Pearse Station empty push/pull train running away without a driver aboard and overtaking and colliding in running with the 07.00 hours ex Connolly Station empty railcar train. This caused a vehicle of the railcar train to become derailed. The derailed vehicle mounted the Down Platform at Gormanston Station and then struck the side of the 06.50 ex Dundalk passenger train which was stopped in the Station.

I am satisfied that the 07.00 ex Pearse Station train ran away to Gormanston because Drive[redacted]ailed to secure it properly before leaving the control cab after the train had been halted by a brake application after departing from Connolly Station and because Guard [redacted], who was aboard this train when it restarted, failed to apply his brake as the train approached its scheduled stopping place, Howth Junction, at high speed.

52. Despite the failures of both Driver [redacted] and Guard [redacted] the train would not have run away to Gormanston if the safety control equipment isolating handle in the control cab had been properly sealed, or if unsealed had been in the "run" position.

53. The couplings on the high vacuum hose between the locomotive and the connecting coach of the 07.00 hours ex Pearse Station train came apart after the train had departed from Connolly Station, and was crossing over on to the Northern line. This caused an automatic application of the brakes. The couplings could have come apart due to excessive speed when traversing the crossover, incorrect joining of the couplings at Pearse Station,

/ [illegible] of all three

There was a history of hose couplings coming apart at this location.

54. The wire seal on the safety control equipment isolating handle in the control cab of the 07.00 ex Pearse Station train was already broken when the train was taken over by Driver Rogers on the morning of the accident. The seal had been broken deliberately on the previous Saturday night at Pearse Station to facilitate a shunting movement.

55. For at least 3 months prior to the accident some C.I.E. officials were aware that seals on safety control equipment isolating handles in the control cabs of push/pull trains were being broken at Pearse Station, without authorisation, to facilitate certain shunting movements. Despite the issue of an instruction setting-out the approved procedure to be followed for these shunting movements the unauthorised breaking of the seals continued up to the date of the accident.

56. The training and supervision of the shunting staff at Pearse Station were inadequate. Arrangements at Connolly Shed for the distribution of the Weekly Circular and for supervising the signing-on of drivers were unsatisfactory.

57. There was no evidence to suggest that anything in the previous mechanical condition of any of the three trains involved in the accident contributed to the collision. The medical examinations of the crew of the 07.00 ex Pearse Station train revealed nothing of significance to the circumstances of the accident.

58. The situation that required some drivers and guards to use both C.I.E. and G.N.R. Rule Books when working trains over the Dublin suburban railway system, when these Rule Books were not identical, was unsatisfactory, and may be a possible explanation for slackness in the strict observance of the Rules.

REMARKS AND RECOMMENDATIONS

59. Improved methods and procedures should be instituted for:-

(i) the training and supervision of the shunting staff at Pearse Station;

(ii) supervising the signing-on of drivers at Connolly Shed and

(iii) circulating the Weekly Circular to the staff at Connolly Shed.

60. It is desirable that the C.I.E. Signalling Regulations and Appendix to the Working Timetable apply over the entire C.I.E. railway system. It is also desirable that an up-dated Drivers' Instruction Manual, which would include the instructions for push/pull trains and the current instructions relating to safety control equipment, be issued as soon as possible.

61. The apparent conflict between the C.I.E. Rule Book (Rule 129(4)(b)) and the Instructions to Drivers of Push/Pull Trains regarding responsibility for checking couplings between vehicles should be resolved.

62. It is noted in the C.I.E. Weekly Circular No. 1564 that from 1st March, 1975, C.I.E. have arranged that the C.I.E. Rule Book will apply throughout the entire C.I.E. rail system and that Rule 50 has been amended to include the signal that the Driver of a passenger train must exchange with the Guard where a train is stopped in exceptional circumstances.

63. The layout of the Weekly Circular should be improved to draw particular attention to Notices relating to amendments to Rules, Regulations and Operating Instructions. Such Notices should be repeated at regular intervals until the amendments have been incorporated into the Rule Book, Signalling Regulations, Drivers' Instruction Manual, etc., as appropriate.

64. Consideration should be given to fixing securing clips on the coupling joining the sections of high vacuum hose between the locomotives and connecting cars of push/pull trains. [redacted]