REPORT OF THE INVESTIGATION

into

THE ACCIDENT ON THE CIE RAILWAY

near

CHERRYVILLE JUNCTION, CO. KILDARE

on

21st AUGUST, 1983

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REPORT OF THE INVESTIGATION INTO THE RAILWAY ACCIDENT NEAR CHERRYVILLE JUNCTION, CO. KILDARE, ON 21st AUGUST, 1983.

INTRODUCTION

1. The Minister for Transport directed, by Order, that [redacted], MIEI, assisted by [redacted], MA LLB, Senior Counsel, hold a formal investigation under Section 7 of the Regulation of Railways Act, 1871 into the causes and circumstances of the railway accident which occurred on the CIE Railway near Cherryville Junction, Co. Kildare on 21st August, 1983 and as a result of which seven persons died and about fifty-five persons received injuries of varying severity. The Order is reproduced at Appendix I. We have the honour to report as follows: -

HEARINGS

2. The Investigation was opened in the City Hall, Dublin on 19 September, 1983. The legal and trade union representation on the opening day is listed at Appendix II, page 1. The Investigation continued until 23 September when it was adjourned pending the outcome of court proceedings against the driver of one of the trains involved in the accident. The Investigation was resumed in the City Hall on 8 June, 1984. The legal and trade union representation on that day is listed at Appendix II, page 2. All persons present on 8 June were invited to join in an inspection of the Centralised Traffic Control (CTC) Centre at Connolly Station, Dublin, and of the accident site near Cherryville Junction. The hearings were held in public. The Investigation which lasted for fourteen days in all concluded on 20 June.

The forty-eight witnesses listed at Appendix III gave evidence under oath administered pursuant to powers in the Regulation of Railways Act, 1871. Witnesses who had been summonsed were first examined by the Court. Subsequently, their own representatives and representatives of other parties were given an opportunity of cross-examination.

DESCRIPTION OF SCENE AND CIRCUMSTANCES

3.1 The accident site is on the double line mainline railway between Dublin and Cork and is about 33¼ miles from Dublin (Heuston Station). Cherryville Junction, where the single line branch railway from Waterford and Athy joins the mainline from Dublin to Cork, is about 32½ miles from Dublin. The duty signalman in the CTC Centre at Connolly Station, Dublin, controls rail traffic on the mainline railway between Inchicore, 2½ miles from Dublin, and Ballybrophy, 66¾ miles from Dublin. A diagram of the accident site showing relevant signals is at Appendix IV. The accident site is between signals CYR 163 and CY 163. The published maximum permitted line speed at that location was 75 m.p.h. and there is a rising gradient of 1 in 180 for traffic travelling towards Dublin.

3.2 The trains involved were the 17.15 hours Tralee/Dublin (Heuston Station) passenger train which was stationary on the Up line and the 18.50 hours Galway/Dublin (Heuston Station) passenger train which ran into the rear of the stationary train. The accident occurred at about 21.40 hours.

SUMMARY OF EVIDENCE

4. Fire Station Officer [redacted] was on duty at Newbridge Fire Station on the evening of the accident. At 21.50 hours he received a telephone message regarding a railway incident at Moyvalley, Co. Kildare. Shortly after 22.00 hours he was told by the Ambulance Service at Naas Hospital that there had been a railway accident near Cherryville. He then telephoned Dublin Fire Brigade Station, Tara Street, and was told there had been an accident at Cherryville and that the Dublin Fire Brigade was under the impression that the train involved was carrying dangerous chemicals. Dublin Fire Brigade offered to provide assistance. Together with two Fire Service colleagues who were outfitted and equipped to deal with chemicals he departed to the accident scene. He arrived at the accident site at about 22.32 hours. His Fire Service colleagues confirmed that there were no chemicals on either train but said they noticed gas leaking from cylinders. Visibility was 500 to 600 yards. Some lights were working dimly in about half the carriages on the ex-Tralee train. He saw no lights in any carriage of the ex-Galway train. A man wearing a high-visibility jacket and carrying a hand lamp identified himself as a CIE employee. This man did not appear to be taking any part in the rescue operations.

5. Ambulance Driver [redacted] was on duty at Naas County Hospital. He received notification of the accident from Dublin Fire Brigade just after 22.07 hours. No mention was made of a chemical train being involved. There was a follow-up notification from the Gardai at Kildare shortly afterwards. Together with a colleague he arrived at the accident site at about 22.20 hours. He formed the view that they were the first uniformed personnel to arrive. Three or four minutes later the Fire Brigade and the Gardai arrived. It had been raining and there was a slight mist. His recollection was that the carriage lights in the ex-Galway train were switched on. There was a smell of escaping gas.

6. Ambulance Attendant [redacted] travelled to the accident site with Driver [redacted] Weather at the site was hazy. He reached the point of impact of the two trains at about 22.35 hours. He noticed no lights in the ex-Tralee train but was conscious of the smell of escaping gas. At that stage he did not see any CIE personnel or anyone wearing a high-visibility jacket. When approaching the point of impact he heard a sound which could have been the generator of the ex-Tralee train.

7. Garda [redacted] is attached to Kildare Garda Station. On the evening of the accident he was on duty. At about 21.50 hours he received a telephone call from a woman saying there had been a train accident at Cherryville. He telephoned CIE at Kildare and then departed alone for Cherryville. From the road over-bridge he could see almost to the far end of the second train and the wreckage on the south-bound line. The colour light signal on the Kildare side of the over-bridge was displaying a Green aspect. He drove along the road where he met a party of Garda recruits returning to Templemore; some of them helped to control road traffic. He reached the accident site just before 22.00 hours with the remaining recruits where he organised the removal of casualties. He was aware of escaping gas and was told by a CIE employee that there was a small fire in the corner of a carriage of the ex-Galway train. A fire extinguisher which he found on the carriage floor did not work. The fire was subsequently extinguished by Fire Brigade personnel. The CIE employee was in uniform, was not wearing a high-visibility jacket and was carrying a type of lantern. Garda [redacted] said no one seemed in overall charge at the accident site. There was no sign of fog when he arrived at Cherryville. He noticed fog at about 01.00 hours the following morning. When he arrived there were lights in most carriages of the ex-Galway train. He had to use his torch when going through the ex-Tralee train. Any broken carriage windows which he noticed were shattered completely.

He walked to the signal about 200 yards on the Portarlington side of the end of the ex-Galway train and found it displaying a Yellow aspect.

8. Garda Sergeant [redacted] was at home when he got a telephone call at about 22.20 hours to report to Kildare Garda Station from where he subsequently telephoned some of the emergency services. He went to the accident site at about 23.10 hours. It was a clear night with no fog. Seeing no one in overall charge he decided to direct the search and rescue operation and the evacuation of casualties. At about 00.15 hours he met a CIE employee wearing a high-visibility jacket who identified himself as Ticket Checker [redacted] of the ex-Tralee train. This was the only CIE employee he met at the site. Checker [redacted] told him that the ex-Tralee train, with 340 passengers on board, had run out of fuel and there was a bit of fog at the time of the accident which was 21.40 hours. Mr. [redacted] also said that he was in the third carriage from the front of his train and was pitched forward in the accident. It was at about 01.00 hours the following morning as he was driving to Naas that Sergeant [redacted] first noticed fog.

9.1 Signal and Electrical Engineer [redacted] is responsible for the CIE signalling system. He explained that the Centralised Traffic Control (CTC) at Connolly Station, Dublin, which was commissioned in 1976, controls all railway traffic over 150 track miles of railway, including the portion of the Dublin to Cork railway between Inchicore and Ballybrophy. He said that throughout the CTC area track circuits detect the sections of railway occupied by trains. This detection is displayed on a graphic display panel in the CTC Centre at Connolly Station and enables signalmen continuously to monitor the position of all trains.

Indicator lights on the panel show the colour aspect being displayed by controlled Stop signals and their associated Distant signals. The colour aspects of automatic signals are not shown on the panel. The CTC system is based on allowing only one train into a block section at a time. When a train passes a Stop signal on entering a block section the colour aspect of that signal immediately changes to Red and the signal continues to display a Red aspect until the train leaves the section. Controlled Stop signals, which can be set by the signalman to operate in either manual or automatic modes, are fitted with signal post telephones (SPT s) in weather-proof boxes. SPT s are also fitted at two level crossings and at ground frames. Only one telephone on the SPT system can be in use at a time. Distant signals, which are always automatic and which are sometimes referred to as Repeater signals and are identified by the letter R, have Green and Yellow aspects. CTC Distant signals are Distant signals for Rules and Signalling Regulations purposes. CTC signals are caused to display their most restrictive aspects by the passage of trains. Mr. [redacted] said that train drivers had reacted favourably to the introduction of the CTC system. He was aware, however, of some reports of railway signals being confused with non-CIE lights.

9.2 A train running from Galway to Dublin passes controlled Stop signal CY 153 (Appendix IV) at Portarlington which has an SPT telephone. The next block section extends from CY 153 to automatic Stop signal CY 161. The following block section is from CY 161 to controlled Stop signal CY 163 both of which have SPT telephones. Mr. [redacted] was satisfied that a train driver approaching from Portarlington would not sight signal CY 163 before he sighted signal CYR 163.

9.3 In his view the colour aspects being displayed by signals at the time of the accident were, respectively,

CY 161 Red, CYR 163 Yellow and CY 163 Green. Mr. [redacted] explained that, with both signals CYR 163 and CY 163 displaying Green aspects to an approaching Up train, signal CYR 163 would not change to Yellow until the train reached a track circuit just beyond it and that signal CY 163 would not change to Red until the train had actually passed it. When the train had cleared the section ahead both CY 163 and CYR 163 would return to Green simultaneously. A Distant signal at Yellow indicates to drivers that the Stop signal ahead is at Danger. When a train is anywhere on the Up line between signals CY 161 and CY 163 signal CY 161 displays a Red aspect. Mr. [redacted] said that the distance of 1,880 yards between signals CYR 163 and CY 163 was based on the braking distance for 90 m.p.h. running and allowing for the gradient on that section of the railway.

9.4 Mr. [redacted] understood that at the time of the accident the telephone at signal CY 161 was defective due to an intermittent fault and that the telephones at signals CY 163 and CY 190 were working. The signalman at Connolly CTC cannot himself check that the SPT telephones at signals are in working order. Mr. [redacted] agreed that Rule 55 permits a driver to pass an automatic signal displaying a Red aspect with extreme caution when the SPT telephone is out of order.

When a driver passes a Stop signal at Danger as provided for in Rule 55 the Distant Signal ahead has no relevance for him. While the duty signalman would be aware from the CTC graphic display panel at Connolly Station that the ex-Galway train had entered the same section as the ex-Tralee train he could assume that the ex-Galway train had done so in compliance with Rule 55.

9.5 The installation of a new radio communications system on CIE locomotives is in progress. A pilot radio system was installed in about ten per cent of CIE's locomotive fleet in March 1979 and was taken out of service

shortly before the accident. The withdrawal of the pilot radio scheme from service was not formally notified to train drivers. The decision to install the new system was taken in July 1979 and a contract was placed in March 1981. Mr. [redacted] was of the opinion that if train radios had been in operational use on 21 August this accident might have been avoided. CIE is also presently installing a Continuous Automatic Warning System (CAWS) on their locomotives which, in certain circumstances, will automatically activate a trains brakes unless a driver takes positive action to acknowledge a warning. Mr. [redacted] thought it unlikely that the driver of the ex-Galway train could have mistaken the red oil tail lamp on the rear end of the ex-Tralee train for an electric colour light signal. The old semaphore Distant signal that was replaced by signal CY 163 was positioned about forty feet above ground level. Mr. [redacted] did not think that this was to keep the signal above local ground-fog conditions. Insofar as he was aware the design of the CTC signals did not take account of local weather patterns.

9.6 Mr. [redacted] did not know of any CIE Rule requiring train crews to carry track circuit clips nor had he knowledge of a track circuit clip that would work in all circumstances. He was aware that on the British Rail network track circuit clips were carried on trains and that one of their uses could be to short-circuit the opposite running line in the event of an accident. These clips short-circuit running rails in the same way as a train and they automatically ensure that the protecting signal displays a Danger aspect.

9.7 Maintenance of the CTC signalling system was extremely good and the budgetary provision was adequate for this purpose. There are more than eighty-six line-side signal post and emergency telephones in the CTC area.

In addition to seven signal maintenance personnel, the Permanent Way personnel who patrol the railway three times weekly also check line-side telephones.

10.1 Train Driver [redacted] had been driving diesel locomotives for the past 19 years. On the day of the accident he reported for duty at Tralee Station at 16.15 hours. He was in possession of a high-visibility jacket which, under a CIE instruction, should be worn when drivers leave their locomotives away from stations. His train was made-up of a General Motors Class 071 locomotive, No. 079, nine passenger carriages and a van. He departed from Tralee at 17.15 hours.

10.2 Driver [redacted] did not recollect if locomotive No. 079 was fitted with a radio. He had previously driven Class 071 locomotives that were fitted with radios. There was a CIE instruction that radios should be tested when Up trains reached Portarlington. Mr. [redacted] remembered a 1979 Weekly Circular instruction regarding the use of train radios but did not recollect seeing any notice terminating use of those radios.

10.3 When carrying out the pre-departure checks at Tralee Driver [redacted] found everything in order. Class 071 locomotives have one fuel tank which is fitted with two external fuel gauges. Before departing from Tralee, Mr. [redacted] did not receive the make-up and weight of his train from Train Guard [redacted]. Class 071 locomotives use about one gallon of fuel per mile in running. After departing from Millstreet the locomotive cut out. Mr. [redacted] re-set the overspeed safety device, isolated the "deadman" control and proceeded towards Mallow with Checker [redacted] in the locomotive cab as a "second man". When stopped at Banteer he had explained the position to Guard [redacted] who was then in the first carriage behind the locomotive. The train arrived in Mallow about 20 minutes late. Mr. [redacted] told Acting Traffic Inspector [redacted] that he needed a replacement locomotive.

Inspector [redacted] told him to take Class 001 ("A" Class) locomotive No. 009. This locomotive had no radio. He examined the locomotive's log card for reported defects. He noticed that locomotive No. 009 had come from Waterford. Driver [redacted] said he carried out the partial preparation of the replacement locomotive in accordance with the instructions in the Drivers' Manual. This partial preparation does not require drivers to check fuel contents gauges. If the fuel tank were full leaving Waterford there would be adequate fuel to reach Dublin. Class 001 locomotives have external fuel gauges which cannot be read from the cab. Two weeks after the accident when Mr. [redacted] was again driving locomotive No. 009 he found its fuel gauge to be unreliable. Driver [redacted] said that before leaving Mallow he did not discuss the quantity of fuel in the tank with Inspector [redacted]. The contents of fuel tanks are not recorded on locomotive log cards.

10.4 When the replacement locomotive was coupled up the ex-Tralee train departed from Mallow at about 19.30 hours, which was 31 minutes late. The train was still 31 minutes late departing from Thurles, the last scheduled stop before Dublin. All signals after Mallow displayed Green aspects when Driver [redacted] first sighted them. After Monasterevan he noticed that the tone of the locomotive's engine changed. Between signals CYR 161 and CY 161 the engine cut out and the train "coasted" for about three quarters of a mile. He estimated that his train stopped at about 21.35 hours. He had hoped to "coast" to signal CY 163. He had no difficulty in sighting signals. There were wisps of fog a couple of feet high over the adjoining fields. He is familiar with the Tralee to Dublin route. Regarding the Up signals near where his train stopped he sights signal CYR 163 before sighting signal CY 163. Having carried out some preliminary checks on his locomotive Mr. [redacted] walked back alongside his train and met Checker [redacted] and told him he thought the locomotive had run out of

fuel. Mr. [redacted] continued alongside the train until he met Guard [redacted] who was in the sixth or seventh carriage back from the locomotive. He told him that the locomotive had run out of fuel. It was agreed that Mr. [redacted] would go ahead to Signal CY 163 to telephone for assistance while Guard [redacted] protected the train in rear in accordance with Rule 188 (Appendix V). First, he returned to the locomotive, made a further check and decided it was suffering from fuel starvation, even though the engine was still running idle. He then collected his detonators, carriage key and high-visibility jacket and proceeded towards signal CY 163 at about 21.45 hours. Since leaving Mallow Driver [redacted] had known that an ex-Cork train was following and he had remarked to Guard [redacted] that the ex-Cork train might be instructed to push their train to Kildare. He was about 100 yards or more ahead of his locomotive when he heard a locomotive approaching in rear. He turned around and from the Down line directed his red hand lamp in the direction of the approaching train. Within seconds he saw its searchlight and heard a bang. He could not be certain that he heard the sound of detonators exploding. As Mr. [redacted] was aware that the 21.10 ex-Dublin train was due shortly on the Down line he rushed to protect that line in accordance with Rule 180. He placed detonators as far as signal CY 190 which is about a mile further along the railway and is past Cherryville Junction.

10.5 Mr. [redacted] said he went to use the SPT telephone at signal CY 190 but got no reply. All he heard was a sound similar to radio static. He then remembered the emergency line-side telephone at Cherryville Junction, ran back to it and made contact with Connolly Station CTC. This telephone was also defective in that conversations were interrupted. He tried the telephone at signal CY 190 twice more and on the second attempt got through to CTC. He returned to the emergency telephone where his conversation was again interrupted.

He subsequently used the SPT telephone at signal CY 163.

10.6 He was last examined in the Rules and Regulations in March 1983 and about 12 months ago he had attended a refresher course in Rules and Regulations for guards and drivers. In the past, with a Signalman's permission, he had passed a signal displaying a Red Danger aspect. He had never passed a signal at Danger without a signalman's permission.

11.1 Ticket Collector [redacted] was on the 17.15 hours ex -Tralee train. When departing from Tralee the passenger carriage furthest from the locomotive was locked. The boiler and generator van was in rear of, and the buffet car was ahead of, this locked carriage. After leaving Killarney Mr. Looby opened the locked carriage so that passengers could walk along the train into it but the carriage's outer doors were still locked. When the train stopped as it approached Millstreet he went into the locomotive cab as a "second man" and remained there until the train reached Mallow. After Mallow he resumed ticket collector duties. There were 337 pasengers on his train which had seating accommodation for 500. Inspector [redacted] assisted him to collect passengers' tickets. He was sitting in the carriage between the buffet car and the boiler and generator van with Inspector [redacted] and Guard [redacted] when the train stopped near Cherryville.

11.2 Mr. [redacted] said that when he looked out on the right-hand side of the train he noticed a light fog or mist and also the glare from a Green signal in the distance. It was then about 21.40 hours. He decided to walk through the train to the front carriage where he got out and met Driver [redacted] who told him the locomotive had run out of fuel. He got back on the train and started to advise passengers, carriage by carriage,

of the reason for the delay. He was in the third carriage from the locomotive when his train was struck. This was about three minutes after he had spoken to Driver [redacted] When he saw what had happened he appealed for medical assistance and tried to control passengers who had stepped down on to the track. He then ran to signal CY 163 to telephone CTC, Connolly Station. As he approached the signal he met Driver [redacted] of the ex-Galway train who said he had already informed CTC of the accident. Mr. [redacted] telephoned CTC at about 21.50 hours and then returned to his train.

11.3 Prior to the accident the internal lights were not working in the third carriage from the front of his train. After the accident the train was in total darkness apart from battery-powered emergency lighting in one carriage and this was very dim. Mr. [redacted] assisted in organising the removal of casualties. At about 23.45 hours he met Mr. [redacted], CIE District Manager. This was the first CIE person he had seen at the accident site apart from the train crews. He overheard a tourist saying he had seen a stout man in uniform throwing flares along the track.

11.4 Mr. [redacted] holds certificates for both guard and signalman duties. He was last examined in Rules and Regulations earlier in 1983. He had no training in the use of first-aid equipment.

12.1 Train Guard [redacted] was the guard on the 17.15 hours ex Tralee train on 21 August. He was first appointed guard in 1951 and is familiar with the Tralee to Dublin route. He was on a 12-hour roster on the day of the accident having already acted as guard on the morning train from Dublin. He reported back to Tralee Railway Station at 17.00 hours. Before the train departed he checked the make-up of his train but did not advise the driver of the load and make-up,

as required by Rule 129. He intended to do so at a station-stop during the journey. Before departing he had also checked the vacuum gauge and the tail lamp and found both satisfactory. Mr. [redacted] was unaware when his train departed Tralee that the carriage between the dining car and the boiler and generator van was locked. The train's internal lights were switched on at Tralee and Mr. [redacted] was satisfied that the lights were working in all carriages. There were compartments for the train guard in both the boiler and generator van which was at the rear of the train and in the third carriage from the front of the train. All vehicles in his train were approved for running at the maximum permitted line speed of 75 m.p.h. He had never been told that any vehicles on any of his trains were speed restricted. When the train stopped after Millstreet he spoke to Driver [redacted] who told him there was trouble with the engine and that Checker [redacted] would be in the cab as a "second man".

12.2 While Guard [redacted] saw the replacement locomotive being coupled up at Mallow he did not discuss this with anyone. He was aware that Rule 138 states that a train is under the control of the guard but he was unclear as to the extent of the control which guards exercise over the running of trains.

12.3 After departing Mallow Mr. [redacted] went into the carriage between the buffet car and the boiler and generator van and stayed there until his train stopped at Cherryville. He remained there because there were not many passengers in that carriage. While he agreed that a guard has duties in relation to the train brakes he felt he was close enough to the van for him to make a brake application if the need arose.

12.4 When the train stopped at Cherryville he looked out on the left-hand side of the train but could not see any signal ahead. There was a slight haze or fog

towards Cherryville Junction. It was clear at his end of the train. A minute or two after Checker [redacted] left the carriage Guard [redacted] looked out the right-hand side and saw Driver [redacted] approaching between the two tracks. Mr. [redacted] walked through the train to the carriage beyond the buffet car and spoke to Driver [redacted] who said he would either have to get a replacement engine or get a push from a train in rear. Mr. [redacted] was to protect the train in accordance with Rule 188 (relevant extract Appendix V). He went back to the carriage where he had been sitting and collected detonators and a hand lamp. Inspector [redacted] who was also there said that if the tail lamp was not lighting he would light it. They both went into the boiler and generator van, got down on to the permanent way and checked the tail lamp which they found lighting. Guard [redacted] then saw the headlight of an approaching locomotive. He walked as best he could alongside the track and away from his train. He thought the approaching locomotive might be coming to render assistance. He had put down two detonators, the second one about 100 yards from his stationary train, when the approaching locomotive passed him. He thought both detonators exploded. He was certain he saw one flash. He had not used his hand lamp to signal to the approaching locomotive because if it was an assisting train the detonators would attract the driver's attention sooner. At no stage did he wave his red hand lamp. He thought that only the locomotive and two carriages passed the spot where he was standing. He remained there for 15 to 20 minutes after the crash and then crawled under one of the carriages on to the Down line. He was in uniform but was not wearing a high-visibility jacket. Mr. [redacted] knew that a CIE Rule required him to have a high-visibility jacket but that Rule did not say when he should wear it. He assisted the guard of the ex-Galway train to extinguish a small fire in the trains buffet car.

After the accident the only lights working on the ex-Galway train were those in the boiler and generator van.

12.5 Mr. [redacted] had been on trains that had stopped away from stations and where drivers had used signal post telephones (SPTs). He could recollect one occasion about eight to ten years ago when, in daylight, he protected a train that had failed in the section between Portarlington and Portlaoise. This protection included setting detonators at a quarter, half and one mile in rear of his train. He had no trouble on that occasion walking on the track and since then he had not again walked on the track until the night of the accident. He preferred to walk beside, rather than on, ballast but at Cherryville he had to walk partly on the ballast because of the embankment and consequently he had to walk slowly. Guard [redacted] had only once previously fixed a detonator, of the type currently in use, to a rail. He had never previously needed to use a lamp when walking on the track.

12.6 He had attended refresher courses for guards in the Rules and Signalling Regulations. He was last examined in the Rules four to five weeks prior to the accident. He had no instruction in the use of SPT telephones nor had he ever used them. He was unaware that there were emergency line-side telephones in addition to the SPTs. About five or six years ago he attended a lecture on the use of the first-aid equipment which train guards are required to have with them under Rule 129. He had never been told which CIE employee was to be in charge on the ground in the event of a train accident.

12.7 Mr. [redacted] told the Investigation that during 1982 and 1983 he had received medical treatment for hip disorders. He resumed duty in March 1983 and subsequently had no difficulty in performing his duties.

13.1 Chief Ticket Inspector [redacted] who retired since the accident told the Investigation that he had held the post of Chief Ticket Inspector for about ten years. Earlier in his career he had acted as guard on goods trains and as a signalman. On the morning of the accident he worked the 10.10 hours ex- Dublin passenger train to Mallow and a connecting train to Tralee. After a lunch-break he reported for duty on the 17.15 hours ex-Tralee passenger train. Mr. [redacted] remembered that his train stopped outside Millstreet and that the train's locomotive was changed at Mallow. There were 337 passengers on board after Thurles. Lights were not working in one carriage. When the train was somewhere between Ballybrophy and Portlaoise he joined Guard [redacted] in the carriage between the buffet car and the boiler and generator van. He could not recollect if Checker [redacted] was already there.

13.2 When the train stopped near Cherryville Mr. [redacted] looked out a left-hand window and saw a Green signal ahead. His initial assumption, based on past experience, was that the train had stopped at a Red signal, that the driver had telephoned the CTC signalman at Connolly Station and that the signal had cleared to Green either while the driver was telephoning or while he was returning to his locomotive. On reflection Mr. [redacted] realised that the Green signal was further away than he had first envisaged. When he looked a second time from the same window he could not see the Green signal and he assumed it was hidden by a patch of fog. Mr. [redacted] stated that when he and Guard [redacted] looked out from one of the right-hand windows, they saw a person whom he assumed to be the train driver coming towards them. Guard [redacted] walked up through the train and on returning told Mr. [redacted] he was going to protect the train in rear and that he anticipated he would meet the ex-Galway train which he would pilot to his train. Guard [redacted] then went to the van to collect his kit. This was eight to ten minutes after the train had stopped.

He did not recollect seeing Guard [redacted] carrying a lamp.

13.3 Mr. [redacted] followed Guard [redacted] from the train and by way of a double-check he examined the tail lamp which he found to be lighting normally. The tail lamp was mounted about five feet above ground level. He next saw the two marker lights of an approaching locomotive. At that stage Guard [redacted] who had moved off quickly, was about 100 feet away. He thought this was two or three minutes after they had got down onto the track. The approaching locomotive's head-light was then switched on for a short time. Mr. [redacted] interpreted this as the action of a driver who had an instruction from the CTC signalman at Connolly Station to help a train needing assistance. There was no sign of fog between the stationary train and the approaching locomotive. He re-boarded his train.

13.4 A short time later while he was still in the boiler and generator van he heard at least two detonators explode. He thought there was a very short time interval between the explosions. He did not recollect hearing the sound of a locomotive hooter. He next saw a locomotive breaking through the van's structure. The interior lights failed and the van was pushed forward in the Dublin direction. Mr. [redacted] sustained severe injuries and was trapped in wreckage where he lay undiscovered for about one and a half hours.

13.5 Mr. [redacted] stated that to his knowledge there is no specific CIE regulation saying what actions should be taken when the lights in a carriage are unserviceable. Mr. [redacted] was not supplied with a high-visibility jacket. While in his view the main purpose of a train's tail lamp is to show that a train is complete it can also act as a warning light on a disabled train. As he had seen no notification that the train radios had been withdrawn from service he had assumed there was

a serviceable radio on his train. He had recently attended a lecture on first-aid.

14. Head Catering Attendant [redacted] reported for duty at Heuston Station at 08.30 hours on the morning of the accident and worked on the morning train to Tralee. After a short lunch-break he reported back for duty on the 17.15 hours train from Tralee to Dublin. He was aware that his train's locomotive had failed between Tralee and Mallow and that it was replaced by a relief locomotive at Mallow. When the train stopped near Cherryville Mr. [redacted] was checking the bar stock. Guard [redacted] who walked through the buffet car at a normal pace, told him the train had broken down and that he was going back along the track. Mr. [redacted] continued checking stock. He next heard what he thought was one detonator exploding. This was followed by a bang and Mr. [redacted] felt an impact following which the interior lights were extinguished. After the impact he found himself under another carriage and, although injured, he was able to free himself. At that stage he became aware that gas was leaking from the cylinders that supplied the buffet car cooking units. In general, gas is used for cooking purposes in older buffet cars while electricity is used in modern cars. He had never been shown how individual gas cylinders could be isolated.

15. Train Driver [redacted] said he had driven the 18.45 hours Cork to Dublin train on the day before the accident. The train was hauled by a Class 071 locomotive and while Mr. Cotter did not recollect if a radio was fitted he would be surprised if one were not fitted because of the notification in the Weekly Circular in March, 1979. He passed Cherryville Junction at about 21.36 hours. Mr. Cotter is familiar with the route and he sights signal CYR 163 before seeing signal CY 163. There is no extraneous lighting in the area to confuse a train driver's sighting of signals. The road overbridge between signal CYR 163 and CY 163 does

not obstruct the view of signals ahead. He had often used signal post telephones and apart from one instance, had found them in working order. On that occasion he had proceeded, with caution, past a signal displaying a Red aspect. If he were proceeding with caution at night he would normally use the locomotive's head-light and if, because of fog, he had to proceed without the head-light he would use extreme caution.

16. Depotman [redacted] was relief signalman at Ballybrophy on the evening of the collision. When the 17.15 hours ex Tralee train passed through Ballybrophy at 20.56 hours he notified CTC, Connolly Station. Mr. Heaney always checks that passing trains are complete. While he did not recollect if the ex-Tralee train's tail lamp was lighting he assumes, because he had not noted otherwise, that everything was in order.

17. Train Driver [redacted] took over the 17.00 hours Westport to Dublin train at Tullamore on 21 August. He departed Tullamore at 19.56 hours. After stopping at Portarlington he had a clear run to Dublin. He was scheduled to pass signal CY 161 at 20.26 hours and Cherryville Junction at 20.30½ hours. He sights signal CYR 163 ahead of signal CY 163. When passing the accident site area he had noticed wisps of fog over the fields adjoining the railway. Driver [redacted] could recollect three instances when he was stopped by signals in the CTC area and had to use SPTs. On one occasion the telephone was working and the two occasions when the telephone was not working related to the SPT at signal CY 190. He heard subsequently that the most recent of these two failures was the result of lightning damage. He did not recollect if the Class 071 locomotive which he was driving on the day of the accident was fitted with a radio. He had used the train radio system previously.

18. Train Driver [redacted] said that on 21 August after carrying out the pre-departure checks he had driven the 18.50 hours ex-Galway train as far as Athlone. There were no defects for entry on the locomotive log card. Mr. [redacted] could not recollect if the locomotive, a Class 071, was fitted with a radio. He subsequently drove the 18.15 hours ex-Dublin train from Athlone to Galway.

19. Depotman [redacted] who holds a guard's certificate acted as guard on the 18.50 hours ex-Galway train as far as Athlone where he joined the 18.15 hours ex-Dublin train and returned to Galway. Before leaving Galway Mr. [redacted] had given his driver details of the make-up of his train which consisted of a locomotive, six carriages, a kitchen car and a boiler and generator van. Before leaving Galway he had lit the tail lamp. The journey to Athlone was uneventful. Mr. [redacted] obtained his guard's certificate five years ago and has since been examined once yearly in Rules and Signalling Regulations. He has never attended a refresher course in the Rules and Regulations.

20. Ticket Collector [redacted] who holds a guard's certificate said that the 18.15 hours ex-Galway train was carrying 272 passengers when it departed from Galway. One of the six passenger carriages was locked. The locked carriage was opened before the train reached Athenry. The number of passengers aboard departing from Ballinasloe was 344. He alighted at Athlone and returned to Galway on the 18.15 hours ex-Dublin train.

21. Porter [redacted] was acting as assistant ticket collector on the 18.50 hours ex-Galway train as far as Athlone. He holds a guard's certificate. He returned to Galway on the 18.15 hours ex-Dublin train.

22. Depotman [redacted] was acting as relief signalman at Tullamore on the evening of 21 August. His duty hours that day were from 07.00 to 21.15 hours. The 18.50 ex-Galway train arrived in Tullamore at 20.52 hours. When it left he signalled its departure to CTC Connolly Station. As the train passed the signal cabin Mr. [redacted] checked that it was fitted with a lighted tail lamp.

23. Catering Attendant [redacted] reported for duty to Heuston Station at 09.00 hours on the morning of the accident and worked the morning train from Dublin to Galway. He was back at Galway Station at 18.00 hours for the return journey. The only train crew member he spoke to during the journey was the assistant ticket-collector. After leaving Portarlington there was only one customer in the kitchen car and as the kitchen car lights were failing he decided to close down. He was in the process of closing when he was thrown forward. Certain items of cooking equipment were dislodged by an impact. He smelled escaping gas and told Guard [redacted] of the ex-Tralee train. Ten or fifteen minutes later he noticed a fire in the kitchen car. He thought the kitchen car was the fourth vehicle behind the locomotive. He heard nothing unusual before the impact. After the impact the ex-Galway train was in darkness apart from very dim lights in the kitchen car. Mr. [redacted] remembered that his train had stopped outside Portarlington but he could not estimate the length of that stoppage.

24.1 Train Guard [redacted] told the Investigation that he had worked as guard on passenger trains for the past seven years. He is familiar with the Dublin to Galway route. On the day of the accident he reported for duty at 16.30 hours and had worked the 18.15 hours Dublin to Galway train as far as Athlone. Before departing Dublin he had given his driver the make-up of the train.

Apart from a carriage key, he had all the equipment and documents listed in Rule 129. On arriving in Athlone he changed to the 18.50 hours ex-Galway train. Before entering the guard's compartment in the boiler and generator van at the rear of the train he checked that the tail lamp was lighting and when he entered the van that the brake vacuum gauge reading was satisfactory. His train crossed the 18.40 Dublin to Westport train at Clonydonnin and after a scheduled stop at Clara his train arrived at Tullamore. At none of these stops did Guard [redacted] notice anything unusual about the train's braking action.

Between Tullamore and Portarlington he assisted the ticket checker to count the passengers aboard - there were 374. When the train made its scheduled stop at Portarlington Station he did not see any other train there. It was dusk when the train departed from Portarlington at 21.19 hours.

24.2 The train proceeded very slowly to Starting signal CY 153. Insofar as Mr. [redacted] could remember it may even have stopped there. The train then moved-off and ran normally until it stopped at Signal CY 161 which was at Danger. When the train was stopped for about five minutes Mr. [redacted] who was in the rear van, decided to walk through the train to discuss the position with the driver. When he had reached the second carriage from the locomotive he looked out and saw the signal still displaying a Red aspect. He then heard the locomotive's hooter. He leaned out of a window and displayed a white light to the driver. He heard the locomotive's hooter again and the train moved off. Mr. [redacted] knew that in certain circumstances under Rule 55 (Appendix VII), a train driver is permitted to pass an automatic Stop signal at Danger. He noted that the train was stopped at signal CY 161 from 21.28 to 21.37 hours.

24.3 Mr [redacted] continued to look out through a window on the left-hand side of the second carriage behind the locomotive. He thought the train was travelling at

about 25 m.p.h. When he saw Signal CYR 163 it was displaying a Yellow aspect. He thought the train's speed did not change as it passed signal CYR 163. He next saw a person beside the track. Because it was dark he could not say if that person was wearing a uniform nor did he notice if he was carrying a lamp.. He then heard two detonator explosions followed very shortly by the impact. He thought the train's speed had not altered up to the time he heard the detonators. He had not seen the next signal ahead. While he noticed a fog about two feet over the bogland beside the track he was not aware of any fog on the track.

24.4 Immediately after the impact Mr. [redacted] left the carriage and ran forward to check if the driver was all right. The driver who was still in the locomotive cab came out onto the locomotive's cat walk. Mr. [redacted] told him to protect the Down line while he, Mr. [redacted] would protect the Up line. Mr. [redacted] who had his lamp with him then ran to the boiler and generator van to collect detonators which he placed on the line at a quarter, a half and one mile in rear of his train. While going back to protect his train he noticed fog over the adjoining bogland but not on the track. He then returned to the accident site to assist in the rescue work. He thought it took him about twenty minutes to go out and place the detonators and to return to his train.

24.5 Guard [redacted] smelled leaking gas and asked Ticket Checker [redacted] to clear passengers away from the kitchen car of the ex-Galway train. Guard [redacted] told him that there was a fire in the kitchen car. He entered the car and, of three fire extinguishers lying on the floor, the first two he went to use were empty. At that stage, being overcome by escaping gas, he left the car and tried to read the gas cylinder contents gauge but was unable to do so because it was covered with dirt and grit.

Having recovered somewhat he returned to the kitchen car and with the third extinguisher put out the fire. Some civil defence rescue workers then shut off the gas supply. The first two fire extinguishers could have been discharged as a result of the impact.

24.6 About two hours after the accident he met the CIE District Manager and the District Inspector. Prior to meeting them he was not aware of any CIE employee being in overall charge at the accident site. The carriage lights had not been lighting in the carriage nearest to the locomotive. He became aware of this when he was counting the passengers aboard. As a result of the impact the lights failed in all the remaining carriages apart from the boiler and generator van. Some fluorescent lamps were knocked from their fixings.

24.7 In the days before the accident Guard [redacted] said that from Monday through to Friday he worked the Dublin to Cork night mail as far as Limerick Junction returning to Dublin on the following morning at 03.15 hours. On the Saturday before the accident he was on duty between 16.30 and 23.10 hours and on the day of the accident he reported for duty at 16.30 hours. Mr. [redacted] said that it was normal for him to work seven days every week.

24.8 He last attended a one-week refresher course in Rules and Signalling Regulations in October. He attended a similar course about five years earlier. Although he had not been given training in the use of line-side signal post (SPT) or emergency telephones he had frequently used the SPTs but he had never used an emergency telephone. He had not been given training in the use of fire extinguishers or of a guard's first-aid kit. While he was aware that Rule 138 states each train is under the control of a guard he felt that, in general, the guard's role is becoming less important and that more responsibility is being given to drivers.

He thought there was no CIE Rule listing checks which a train guard should carry out when he takes over a train in mid-journey.

25.1 Train Driver [redacted] said that he had been a fulltime driver of diesel locomotives since 1967 and that he was familiar with the Dublin to Galway route. He had worked every day in the previous week as he did most weeks of the year. On the day before the accident he had finished work between 18.00 and 19.00 hours. He thought there were adequate rest periods between the end of one duty and the commencement of the next duty. On the afternoon of Sunday, 21 August he reported to Connolly Station at 16.15 hours and having collected a locomotive in Inchicore he drove the 18.15 hours Dublin, Heuston Station, to Galway passenger train. Before departing from Dublin the guard had given him the make-up of his train. The locomotive's log card did not record any defects. Mr. [redacted] checked the fuel and water, the brakes and the safety control and vigilance equipments. The locomotive was fitted with an unserviceable radio. On previous occasions he had found radios unserviceable. When he had a serviceable radio on his locomotive he had always checked it. He arrived in Athlone one to two minutes behind schedule.

25.2 He then took over the 18.50 hours Galway to Dublin passenger train which was due to depart from Athlone at 20.08 hours. The locomotive on this train was No. 086 and it was fitted with a radio. Mr. [redacted] boarded the locomotive and checked the brakes and the safety control and vigilance equipments. He did not meet the driver who had brought the train from Galway. The journey from Athlone to Portarlington was uneventful. The locomotive's speedometer was working. Mr. [redacted] was aware of the Operating Instructions for the Radio Telephones in the CTC Centre, Connolly Station, and on the mainline locomotives issued in the Weekly Circular for the week

ended 24 March, 1979. On this occasion he did not check that his radio was working when he arrived at the boundary of the area covered by the radio system.

25.3 As the Portarlington Home Signal, CY 147, was at Danger Driver [redacted] stopped his train and having unlocked the telephone housing used the signal post telephone (SPT) to telephone the signalman in the CTC Centre at Connolly Station. He identified himself and was told the ex-Tralee train was running late. After about a minute the signal turned to Yellow and he proceeded into the Station. When a train is standing at the Portarlington Station platform, drivers cannot see the Up Starting Signal, CY 153. Mr. [redacted] moved his train slowly from the platform and when he first sighted signal CY 153 it was showing a Red aspect but as he brought his train to a stop the signal changed to Green. He assumed that the aspect of signal CY 153 did not change to Green until the ex-Tralee train passed signal CY 161. He then set out at normal speed. When he sighted signal CYR 161 it was showing a Yellow aspect. He reduced speed and stopped at automatic signal CY 161 which was showing a Red aspect.

25.4 Mr. [redacted] said that he found the SPT telephone housing at signal CY 161 closed but unlocked. He made four or five unsuccessful attempts to telephone the CTC signalman. As there was no sound of any kind from the telephone he assumed it was "dead". He had never previously experienced an SPT that did not work. Mr. [redacted] knew that the nearest convenient telephone was at signal CY 162 which was about one and one quarter miles in rear. He also knew that Rule 55 defines a convenient telephone as a telephone within half a mile. He then decided he would have to proceed past signal CY 161, while it was still displaying a Red aspect, in accordance with the provisions of Rule 55, clause (g)

(Appendix VII). He had never previously had occasion to proceed under this Rule in the CTC area. Before moving off he was unsuccessful in four or five further attempts to telephone CTC. Drivers had been told some years previously that in the event of a telephone failure they should wait only three to five minutes at a signal displaying a Red aspect. Mr. [redacted] also made an unsuccessful attempt to contact CTC by radio. By that time he had been stopped for eight or nine minutes at signal CY 161. His intention in proceeding past singal CY161 displaying a Red aspect was to stop at the next Stop Signal which was CY 163. The normal running time between Portarlington and signal CY 161 is six and a half to seven minutes. On that occasion Mr. [redacted]s train had taken eight minutes for that distance.

25.5 He sounded the locomotive's hooter, got a signal from the guard and moved forward at a cautious speed. He had not spoken to the guard while the train was stopped at signal CY 161. Mr. [redacted] estimated the train's speed at 15 to 20 m.p.h. The headlight was switched on. Approaching Cherryville the track takes a wide curve to the right which enables a driver to look across open country at signal CYR 163 and CY 163 which are then, respectively, about three quarters of a mile and two miles away. Mr. [redacted] normally sights CYR 163 first but on this occasion he sighted CY 163 for a split second ahead of sighting CYR 163. The signals were displaying Green and Yellow aspects respectively. He did not see the lighted stationary train on the track between these signals. As his train approached signal CYR 163 Mr. Brady noticed fog over the ground beside the track and wisps of fog along the track, especially near the signal. After passing signal CYR163 he switched off the headlight to get a better view of the track ahead. In his experience, headlights magnify a slight or a very heavy fog and reflect light back to the locomotive. On a clear night headlights will light up the track for a distance of 100 to 120 yards. At this point he estimated his speed at about 20 m.p.h.

At some stage after passing signal CYR 163 he thought he saw a faint red light some 170 to 180 yards ahead. He again switched on the headlight to see if he could identify what was ahead and the light shone on the rear of a carriage. He immediately shut off power and made an emergency brake application. When he first saw the faint red light he thought it might have been the reflection of signal CY 163 which he would have expected to find at Red when CYR 163 was displaying a Yellow aspect. Prior to seeing the faint red light Mr. [redacted] had not heard any detonators explode. When he made the emergency brake application there was apparently no reaction from the brakes. He thought he was about twenty yards from the stationary carriage when he heard one or possibly two detonators explode. He threw himself on to the cab floor just before his locomotive hit the stationary carriage. The locomotive's engine stopped after the impact. When Mr. [redacted] got up from the floor he switched off the batteries to prevent an electrical fire. Driver [redacted] could not accept that his train's speed had increased from 14 m.p.h. just before reaching signal CYR 163 to 32 m.p.h. over the next quarter of a mile. This was the first time he had made an emergency brake application when driving a Class 007 locomotive.

25.6 Guard [redacted] approached Driver [redacted]'s locomotive. When they both saw the extent of the damage they agreed that Guard [redacted] would protect the line in rear while Mr. [redacted] would protect the opposite running line. Mr. [redacted] placed detonators on the line towards Dublin and then went to signal CY 163 from where he telephoned the CTC Centre at Connolly Station. In Mr. [redacted]'s view this was the first notification of the accident to CTC.

25.7 Mr. [redacted] knew that the passage of a train turns a Distant signal to Yellow and a Stop signal to Red and that a Yellow Distant signal indicates to a driver he must be prepared to bring his train to a halt at the

next Stop signal ahead. The circumstance in which a Distant signal could be at Yellow while its associated Stop signal was at Green had not been explained to him. Driver Brady agreed that Rule 179 (Appendix VIII) requires the driver of a disabled train to travel on an assisting train and that the speed of the assisting train must not exceed 15 m.p.h. His understanding was that this part of Rule 179 was amended following publication of the report into a railway accident near Mullingar. Mr. Brady thought that in conditions of poor visibility the only certain way to proceed cautiously is to walk ahead of the locomotive and this is not provided for in the Rules. Mr. [redacted] had never been told that brakes on a Class 007 locomotive do not take effect until between six and eight seconds after an emergency braking application has been initiated nor had he been told when headlights should be dipped.

25.8 While Rule 138 states that each train is under the control of a guard Driver Brady's understanding is that the guard's responsibility is limited to such matters as filling-out the journal and signalling that a train is ready to start. In general, guards do not instruct drivers as to what they should do. A driver does not require the guard's permission to proceed under Rule 55. There is no on-board system of voice communications between drivers and guards. In the CTC area it is the driver who had to telephone the CTC signalman under Rule 55. Guards are being phased-out on the new electric trains.

25.9 Mr. [redacted] had undergone an annual Rules examination. This examination which lasted for six to seven hours was usually conducted in one day. In addition, he underwent two driving competency tests each year. Prior to the accident he had not attended a refresher course in Rules and Signalling Regulations since qualifying as a driver.

26. Depotman [redacted] said he works in the Heuston Station Parcels Office Mondays through to Saturdays and on occasional Sundays as a travelling ticket-collector. On 21 August he reported for duty at 16.30 hours, worked on the 18.15 hours Dublin to Galway train as far as Athlone where he joined 18.50 hours Galway to Dublin train. He was not told that the lights in one of the carriages was unserviceable. Having completed his ticket checking duties he was in the second last carriage when the collision occurred. It was then dusk but not dark and there was fog about four feet high over the adjoining bogland. Despite being injured he had gone to assist passengers and had met Guard [redacted] who was going to protect his train. Mr. [redacted] had previously acted as guard on trains. He had never attended a refresher course in Rules and Signalling Regulations.

27.1 Operative [redacted] is attached to Waterford Station where he assisted in repairing signals and on Saturday mornings fuelled locomotives. The usual practice was that on Friday evenings the Locomotive Foreman gave him a list of the locomotives requiring fuel. All locomotive fuel tanks were to be filled to overflowing. The quantities of fuel supplied to each locomotive were recorded and this information was forwarded to Dublin by Mr. [redacted] Assistant Rail Manager. He could not say when information supplied to Mr. Geraghty's Office on Saturdays and Sundays was forwarded to Dublin.

27.2 When Mr. [redacted] reported for duty at about 05.45 hours on Saturday 20 August he was told that locomotive No. 009 had been fuelled at about 22.00 hours on the previous night by another CIE employee, Mr. [redacted] The locomotive was running idle overnight until it departed for Shelton at about 07.00 hours on Saturday morning. When he came on duty Mr. Sadlier checked that this locomotive's fuel tank was full by opening an overflow valve. One of the two fuel gauges was broken. He handed a

written report on the quantity of fuel supplied to locomotive No. 009 to the Assistant Rail Manager's Office. Later that day the locomotive returned from Shelton and, without taking additional fuel aboard, was despatched to Limerick Junction. The fuel gauges cannot be read from the locomotive cab. He considered the fuel gauges unreliable.

28. Assistant Rail Manager [redacted] explained how written records of fuel supplied to locomotives in Waterford were prepared by the fueller and brought to the Running Foreman's Office. The same day or the following day Mr. [redacted] collected these records and transferred the information on to a daily sheet which indicated the quantity of fuel issued to each locomotive. Every Monday a record of all the fuel issued during the previous week was sent to the engineer's accountant. Additionally, the Locomotive Foreman at Waterford had been reporting daily to Locomotive Control, Inchicore the quantity of fuel issued to each individual locomotive but this practice had lapsed before the day of the accident. The only knowledge Mr. [redacted] had of the fuelling of locomotive No. 009 on the night of 19 August was the record submitted to his office by the fueller. Since the accident Locomotive Control, Inchicore is told daily, by telephone, which particular locomotives have been fuelled. Mr. [redacted] thought that on the weekend of the accident Locomotive Control was not given any information regarding the fuelling of locomotive No. 009.

29. Senior Depotman [redacted] is responsible for the movement of trains within Waterford Station. On the evening of Friday 19 August he was Acting Inspector on the 16.00 hours to midnight shift. While it was not part of his duty to fuel locomotives he decided it would be prudent to fuel locomotive No. 009 on that night because there might not be convenient access to the fuelling point early on the following morning. While Mr. [redacted] had not been trained in the fuelling of locomotives he

had been fuelling them for a number of years. Locomotive No. 009 had hauled an empty fertilizer train into the Station and the complete train was driven to the fuelling point. It took 154 gallons to fill the fuel tank. Mr. [redacted] knew that the locomotive would be running idle through the night. It was his normal practice to fuel fertilizer train locomotives on Friday nights.

30.1 Maintenance Engineer [redacted] explained that CIE's locomotives are assigned to specific links or schedules in which there are designated locations for the locomotives to be fuelled and serviced. Current status information on locomotives is kept in Locomotive Control, Inchicore which is manned on a 24-hour basis. It is standard practice to fill all locomotive fuel tanks each time they are refuelled. Class 001 locomotives use about 4 gallons per hour idling and about one gallon per mile in running. South of Dublin there are fuelling facilities at Limerick, Cork, Waterford and Tralee and at Thurles during the beet season only.

30.2 Mr. [redacted] said that on the Friday 19 August, 1983 Waterford would have had from Locomotive Control details of locomotives to be fuelled and serviced over that week-end. Overtime arrangements were made to fuel locomotive No. 009 at 06.00 hours on Saturday morning. The locomotive then went to Shelton, returned to Waterford and arrived in Mallow at 22.00 hours on Saturday. Including travelling to Cherryville on Sunday locomotive No. 009 travelled 397 miles and had been idling for about 24 hours since it was last refuelled. The usable capacity of its fuel tank is between 450 and 500 gallons. Mr. [redacted] agreed that the locomotive's log card entries indicated it had been in Waterford twice and later in Cork on Saturday 20 August and did not indicate at which of the two stops in Waterford it was last refuelled. While the proposed journey to Cork had terminated at Mallow Locomotive Control was not informed of this until the following morning.

30.3 Mr. [redacted] had never seen fuel gauges fitted in locomotive cabs. There are sight-glass fuel gauges on Class 001 locomotives but only one of the gauges on locomotive No. 009 was serviceable on the day of the accident. He was not aware that fuel gauges and locomotives running out of fuel has been the subject of correspondence between CIE and trade unions since 1973. In the past twelve months there were seven occasions when mainline trains ran out of fuel. On the evening of the accident, it was only after the ex-Tralee train had departed from Mallow that Locomotive Control was told that locomotive No. 009 had replaced locomotive No. 079. As the supervisor at Locomotive Control was very busy, the checking of the quantity of fuel aboard locomotive No. 009 was overlooked.

30.4 Mr. [redacted] said that about twenty-four locomotives were equipped with Storno radios borrowed from the Dublin City Services Section of CIE. About two months before the accident it was decided to withdraw these radios from service. The fitting of new radios on locomotives is currently in progress. While the Weekly Circular for the week ended 24 March 1979 had issued information and instructions on the use of the Storno radio system he was not aware that this information and these instructions were cancelled when the decision was taken to withdraw the Storno radios from service.

30.5 At Cherryville on the night of the accident Mr. [redacted] Chief Mechanical Engineer, Rail, handed him the two speed recording discs which had been removed from the Hasler Recording Speedometers on the Tralee to Dublin and Galway to Dublin trains. He subsequently brought the discs to Inchicore where he gave them to Mr. [redacted] for analysis.

31.1 Senior Depotman [redacted] was a signalman in the Connolly Station CTC Centre until January last. He was on duty for the evening shift on 21 August.

Mr. [redacted] had worked the same shift every day that week. He said it was normal for CTC signalmen to work seven days every week. The one other person on duty in the CTC Centre that evening was the traffic regulator. Shifts where there is only one signalman on duty are evening shifts on Sundays and night shifts everyday.

31.2 The signalman at Ballybrophy had sent a signal to CTC when the ex-Tralee train passed through. Mr. [redacted] saw from the CTC graphic display panel that this train passed through Portlaoise at 21.07 hours and Portarlington at 21.15 hours. He also saw that the ex-Galway train had arrived in Portarlington at 21.17 hours and departed at 21.21 hours. When he noticed the ex-Tralee train overdue in the block section he asked the traffic regulator to have a relief locomotive sent from Inchicore. Mr. [redacted] would know from the CTC graphic display panel if there were two trains simultaneously in the same block section of the railway line. In his experience in Connolly CTC this had happened only a couple of times. When Mr. [redacted] saw the ex-Galway train passing automatic signal CY 161 he assumed that the SPT telephone there was out of order and that the driver was acting in compliance with Rule 55, a rule which saves time as it keeps trains moving.

31.3 Mr. [redacted] first became aware of the accident when Driver [redacted] of the ex-Tralee train called him on the Cherryville Junction emergency telephone. The instrument for the emergency telephone system is on a desk behind the duty signalman's normal working position at the display panel. The emergency telephone cut out before the conversation was finished. He recollected previous occasions when telephone calls had been cut off. The call from Driver [redacted] was timed by an automatic recorder as commencing at 21.58.28 hours but was noted in the CTC Occurrence Book at 21.55 hours. Signalman [redacted] immediately put all relevant control signals at Danger and asked the traffic regulator to alert the emergency services.

31.4 Because signal CY 153 was now at Danger the 18.40 hours Cork to Dublin passenger train stopped at it. The driver called CTC on the SPT telephone and was told to remain there as the ex-Tralee and ex-Galway trains were somewhere near Cherryville Junction. This call was recorded as commencing at 21.52 hours and noted in the Occurrence Book as having been made at 21.53 hours.

31.5 Driver [redacted] of the ex-Galway train called Connolly CTC from the SPT telephone at signal CY 163. This call was timed by the recorder as commencing at 22.03.12 hours and noted in the Occurrence Book as having been made at 22.10 hours. The instrument for the SPT telephone system is on the display panel desk.

31.6 Mr. [redacted] said that the Connolly CTC signalmen make entries in three different books, the Signal Fault Book, the Train Register and the Occurrence Book. References in the Occurrence Book for the period 30 December 1982 to 22 August 1983 to telephones or SPTs ringing continuously were occasions when an SPT rings in and the indicator button lights up but when the signalman picks up the telephone instrument there is no caller on the line. When the instrument is replaced the cycle recommences after fifteen to twenty seconds. In this fault condition while the telephone is ringing in it is impossible to make a call on the SPT system. Mr. [redacted] did not know for certain if the system under which Permanent Way personnel now make check calls from the SPTs was introduced before or after 21 August, 1983. This system gives rise to a substantial number of check calls every second day during the morning shift. These check calls are not entered into the Occurrence Book except when faults are reported.

31.7 Mr. [redacted] explained that Occurrence Book entries regarding the train radio system relate to messages from drivers about such matters as animals on the railway

or requests to drivers to make special stops. Entries are not made in the Occurrence Book when drivers check that their locomotive radios are serviceable; these check calls are logged elsewhere. The most recent entries specifically mentioning the use of train radios were dated 12 June (door open, line clear of animals) and 19 June 1983 (locomotive failed in the section). A loose page inset in the Occurrence Book stated that as from 9 August, 1983 the daily logging of check calls from radios was to be discontinued. While Mr. [redacted] could not recall having seen the operating instructions for train radios in the Weekly Circular for the week ended 24 March, 1979 he was certain that he had not seen any recent notification that use of the train radios had been discontinued. He had found the train radio system satisfactory and he thought he had tried to make radio contact with both the ex-Tralee and ex-Galway trains on the night of the accident.

31.8 Apart from the SPT and emergency telephone systems the CTC Centre also has internal and external telephones. Mr. [redacted] regarded reliable communication between signalmen and train drivers as very important for safety and operating reasons. Mr Rusk had specific training for CTC signalman duties, including use of the train radio system. He had never attended a refresher course in Rules and Regulations.

32.1 Signalman [redacted] said he has been a signalman since 1954 and has been attached to the Connolly Station CTC Control Centre since 1977. He finished work at 10.00 hours on 21 August and resumed again before 23.00 hours on the same day. He normally works seven days every week. Mr. [redacted] told him of the accident, that the ex-Cork train was at Signal CY 153 and that an ex-Dublin train was held in Kildare.

32.2 Mr. [redacted] explained that CTC Occurrence Book entries about telephones ringing in continuously related to instances

where a telephone rings and is answered but there is no caller on the line and that when the telephone instrument is replaced the telephone rings again after intervals of from a couple to fifteen seconds. He could recollect only one occasion when he was on duty at Connolly CTC that a signal at Danger was passed as is provided for in Rule 55 and that was by a locomotive only. Every instance of signals being passed while at Danger should be noted in the Occurrence Book. This Book is checked daily by the Signal and Area Inspectors. Mr. [redacted] said that prior to the accident near Cherryville the checking of SPT and emergency telephones by Permanent Way personnel was of a random nature but since the accident it has been formalised and telephones are now checked three times weekly. He had found the train radio satisfactory when it was working but the system was frequently out of order.

32.3 Mr. [redacted] was given training in the CTC system and in the use of the train radio and telephones. Between his appointment to Connolly CTC and the date of the accident he had not attended any refresher course in Rules and Regulations. He had attended one-day courses dealing with the operation of ammonia trains and the Continuous Automatic Warning System (CAWS). He has an annual examination in Rules and Signalling Regulations. Mr. [redacted] said that for safety reasons the block sections for ammonia trains extend from one controlled stop signal to the next controlled signal.

33.1 Technical Assistant [redacted] said he was on the staff of the Area Rail Manager. Random excerpts from tape recordings of SPT and emergency telephone calls are played back each week to monitor the performance of personnel using the telephones and observed irregularities, if any, are brought to the notice of the individuals concerned. Transcripts of the taped conversations are made in cases of accidents or incidents. Used tapes

are stored for three weeks and are then re-cycled. On the day after the accident he had listened to the tape record-ings made the previous day. One aspect of the recordings that surprised him was the number of times telephone calls were cut off. In Mr. [redacted]'s view this type of fault should be reported to the Signal and Electrical Department and should be noted in the CTC Occurrence Book. He had not noticed this type of fault previously.

33.2 Regarding the loose-page inset in the CTC Occurrence Book Mr. [redacted] explained that from correspondence he had seen in the Area Rail Manager's Office he became aware that from a date around 22 July, 1983 the radio communications system on locomotives would no longer be effective and accordingly he instructed the signalmen in the CTC Centre at Connolly Station to discontinue logging radio check-calls from locomotives. He was not aware that there were entries referring to the use of train radios in the Occurrence Book for the period 30 December, 1982 to 9 August, 1983. While he did not know of written instructions to signalmen stating which items should be entered into the Occurrence Book this would have been covered during their training for CTC Work. Mr. [redacted] told the Investigation that the train radio system in use since 1979 was not to be used for Rules and Signalling Regulations purposes. In his view as CIE staff generally were not told that the train radio system was being withdrawn from service the instructions regarding use of train radios issued in the Weekly Circular for the week end-24 March, 1979 were still operative apart from the require-ment that signalmen should log check-calls from locomotives.

33.3 Regarding the SPT telephone system the only telephones on which the CTC signalman can either initiate a call, or check, are those at two level crossings and at ground frames. He agreed that the Occurrence Book did not always record when telephone faults were repaired. Regarding the many reported instances of telephones ringing-in continuously Mr. [redacted] said this fault condition had never adversely affected CTC signalling operations.

34.1 Signal Engineer [redacted] told the Investigation that he was responsible for maintenance of the CIE signalling systems, including CTC. This maintenance includes both immediate repair work and planned preventative maintenance. Under planned preventative maintenance there is an overall inspection and checking of equipment every eight to ten weeks. There are no written records of this work. Faults discovered during preventative maintenance are reported to the repair gang. Of the three to four hundred signalling system faults reported annually between one hundred and fifty and two hundred are telephone faults. The majority of telephone faults are printed circuit card failures and about twenty per cent of these failures are due to defects in circuit card isolating transformers. Telephone faults are repaired by Telecommunications Inspector [redacted] and his staff. There are about one hundred signal-post telephone (SPTs) and eight emergency telephones within the area of the Centralised Traffic Control (CTC) system. The last check on the telephone at signal CY 161 before the accident was on about 26 July. Mr. [redacted] could not say when the telephone at signal CY 190 was last checked. The telephone at signal CY 162 was checked on the Friday before the accident. On the night of the accident Mr. [redacted] checked the telephone at signal CY 161 and found it unserviceable.

34.2 Mr. [redacted] frequently travels in locomotives to check that colour light signals are in focus. He considered the CTC signalling system very reliable. Conversations from signal post telephones (SPTs) are recorded in the Connolly Station CTC signal cabin. Mr. [redacted] stated that adequate finance is available to operate and maintain a safe signalling system. Under informal arrangements Permanent Way personnel check signal post telephones even though this is not provided for in their agreed schedule of duties. When the CTC signalmen become aware of a system fault they immediately notify the personnel responsible for signal maintenance. A serious fault or an identifiable pattern of minor faults would be brought to Mr. [redacted]'s personal attention.

34.3 Mr. [redacted] agreed that the Connolly Station CTC Occurrence Book for the period 30 December, 1982 to 22 August, 1983 listed at least one hundred SPT faults and over twenty emergency telephone faults. He also agreed that this was typical of the fault pattern in previous years. Mr. [redacted] had analysed the telephone faults reported in the Occurrence Book and had concluded that the average mean time between failure (MTBF) for individual telephones was about seven months and that the complete system was technically available 99.5 per cent of the time. These availability figures do not take account of times when the system is unavailable because it is being used by others. Mr. [redacted] did not have comparable statistics for other railway systems. He agreed that the availability times took no account of whether facilities were unserviceable during periods of maximum or minimum rail traffic.

34.4 Mr. [redacted] said that in his view about twenty per cent of faults reported in the Occurrence Book were not genuine faults. As the SPT system is designed to allow only one conversation at a time potential callers getting an engaged tone may report a fault when there is none. He had not taken this into account when making his analysis of reported faults. Regarding the faults described in the Occurrence Book as "ringing in continuously", Mr. [redacted] said that this was where a telephone rings in and the signalman answers but there is no caller on the line. He replaces the receiver and the telephone rings in again after an interval of one and a half to ten minutes or even rings continuously. In this fault condition, which may be due to a drift in some of the control equipment, a defective circuit card or a sticking telephone call-button, it is impossible to contact Connolly CTC while the telephone there is actually ringing, but calls can be made when the ringing stops. Mr. [redacted] considers a "ringing in continuously" fault to be more serious than a fault at an individual telephone because it reduces the availability of the entire SPT telephone system and because of its annoyance factor for the duty signalman.

Rectification of this type of fault is given a top priority and such faults are normally cleared in less than an hour. Occurrence Book entries indicating that the entire SPT system was out of service for three to four hours were untypical. The only SPT telephones which the signalman at Connolly Station CTC can call are those at level crossings. There is no system for holding or queueing SPT calls.

35.1 Acting Telecommunications Inspector [redacted] said he is responsible for the maintenance of signal-post telephones (SPT s) and the associated telephone cables within the CTC area. Every Stop signal is fitted with a telephone which is connected to the CTC Control Centre at Connolly Station, Dublin by underground cable. In Connolly CTC an encoder arranges that calls are taken in sequence depending on the telephone code, not on the length of time the caller is waiting. When the encoder identifies and connects an incoming call that call cannot be interrupted nor can a second caller be connected. When a call is completed all lines are re-opened. Apart from reported faults, telephones are tested in the course of routine maintenance work. On occasions, callers report faults where another caller is using the system.

35.2 The emergency telephone at Cherryville Junction has a dialling facility which enables callers to contact Connolly CTC over Bord Telecom lines even when the SPT system is in use. A few weeks before the accident this emergency telephone was damaged by lightning and, inadvertently, a unit incorporating a timer which automatically cut off calls after 1½ to 2 minutes, including ringing time, had been fitted to the instrument. On the morning after the accident he tested the SPT telephone at signal CY 161 and found it defective. After replacing a circuit board card the telephone operated satisfactorily. Defective circuit boards are replaced fairly frequently. Four days after the accident he tested the SPT at signal CY 190 and found it in working order.

36 Senior Assistant Engineer [redacted] is attached to the Signal and Electrical Department and deals with communications systems. He explained that all calls made on both SPT and emergency telephones are recorded in Connolly CTC. Separate channels are provided for each telephone system while a third channel records time. With each telephone system one conversation is possible at any one time. The recorder, which is fitted with duty and standby tape decks, is activated by every telephone call made. Each tape has a recording capacity in excess of twelve hours. When tapes are played-back the corresponding times are shown on a display. When replacement tapes are fitted into the recorder the CTC signalman makes a telephone call to one of the two level crossings fitted with SPT telephones and inputs the date and time. The duty tape on 21 August was fitted on 19 August by Signalman Rusk. The tapes are under the control of the Area Rail Manager.

37. Plate-layer [redacted] said he was headquartered in Kildare and that sometimes when the regular ganger is on leave he patrols the track between 30 and 37 miles from Dublin which includes Cherryville. The track is patrolled three times weekly and Mr [redacted] patrolled his section on Monday, Wednesday and Friday before the accident. His duties included checking rails, sleepers, fences and bridges but did not include checking signals or telephones. While he was unaware of an instruction that gangers should check SPT telephones he had checked one telephone at the Cherryville points on the Friday and found it serviceable. He also tried to check the SPT telephone at signal CY 161 but found the housing locked. He was never supplied with a key for SPT telephone housings.

38. Patrol Ganger [redacted] said he was the regular patrol ganger for the section of track through Cherryville which he patrolled three times weekly. On 11 August, 1983 he got a written instruction from his inspector to check SPT telephones. The instruction made no mention of the

emergency telephones. He checked the SPT telephone on 12 August, his last day at work before going on leave. All the SPTs including the telephone at Signal CY 161, were working satisfactorily. Because of vandalism that telephone was kept locked. He had been instructed in the use of SPT but not of emergency telephones. He agreed it was awkward and uncomfortable to walk on the track. He had never walked the section of track at the accident site at night. Prior to 11 August he had checked telephones on a random basis.

39.1 Technical Manager [redacted] who is attached to the Chief Mechanical Engineer's Department, said that all locomotives are fitted with Hasler speed recording equipment. A disc records approximately the last eighteen hundred and fifty yards of run. The disc is driven from the locomotive axle and has graduations to show both distances and speeds. A stylus on the speedometer head, which moves radially outwards in relation to speed, marks a speed/distance trace on the disc. A second stylus marks brake applications above a certain value. Speedometers are normally checked against mile posts. Recorders are set to the mid-point of wheel wear, 38½ inches, and at this point are accurate to within one and a half per cent. There can be a one per cent difference between recorded and indicated speeds and the inaccuracy of the recorder as between the mid-point of wheel wear and a full wheel or a small wheel is about 3% in each case. After the accident the wheels of the locomotive on the ex-Galway train were checked and found to be close to the mid-point of wear. He did not know when the speedometer on that locomotive had last been checked before the accident but when it was checked after the accident there was no error in the 30/40 m.p.h. speed range.

39.2 Mr. [redacted] told the Investigation that an examination of the Hasler disc from the ex-Galway train indicated

that, at a point 1,857 yards from where it stopped recording, the train's speed was 23/24 m.p.h., the speed fell to about 20 m.p.h. at 1,550 yards and to slightly below 15 m.p.h. at 610 yards which was just past signal CYR 163. Based on calculations and taking account of a rising gradient of 1 in 180 he was satisfied that some braking action was necessary to achieve this reduction in speed. The train's speed then began to rise to 32 m.p.h. at 110 yards. It continued at that speed until 18 yards from the end of the recording, which Mr. Heneghan considered to be the point of collision. It then decelerated rapidly to zero. Mr. [redacted] explained that the times taken to build up sufficient air pressure to cause the locomotive and train braking systems to react are one and a half and eight seconds respectively after the brake control levers are moved. These times disregard driver reaction times which are usually two to three seconds. His opinion, based on an analysis of the disc, was that the brakes reacted about 56 yards from the end of run. When account is taken of a brake reaction time of eight seconds and a driver reaction time of two seconds Mr. [redacted] calculated that braking action was probably initiated between 220 and 110 yards from the end of run.

39.3 Mr. [redacted] knew that the discs from the Hasler units on the ex-Tralee and ex-Galway trains were removed by Mr. [redacted] after the accident and were eventually given to Mr. [redacted] He was satisfied that the discs were handled correctly and that the speeds which he had just quoted were from an analysis of the disc taken from the ex-Galway train. He agreed that if the locomotive's wheels slipped on acceleration the speedometer would show a higher than true speed but there was no sign of wheel slip on the disc from the locomotive of the ex-Galway train. The speedometer in this class of locomotive is located above and to one side of a seated driver. In older locomotives the speedometer is located at a lower level on a panel in the centre of the cab.

39.4 Mr. [redacted] detailed the make-up of the two trains involved in the accident and gave information relating to the age, weight and type of each vehicle (Appendix VI). The overall weight of the ex-Galway train excluding passengers, was 337.17 tons. The brake power of the train was equal to 64.77% of the weight of the train, including the locomotive, and the stopping distance at 30 m.p.h. at the accident site is just over 200 yards. The locomotive head light beam has a range of about 240 yards on a clear night and in conditions of good visibility. Mr [redacted] was unaware that a maximum speed of between 20 and 35 m.p.h. is specified in the Northern Ireland Railways Rule Book for a train which passes a signal at Danger. To specify a precise maximum speed in the CIE Rule could give rise to operational difficulties. He said the 15 m.p.h. speed limit specified in Rule 179 (Appendix VIII) related only to trains assisting disabled-trains whereas Rule 55 could relate to any type of obstruction on the line. The equivalent British Rail Rule does not specify a maximum speed.

39.5 Mr. [redacted] detailed the damage sustained in the accident by both trains. Four vehicles of the ex-Tralee train sustained substantial damage. The timber body of the buffet car, which was the third last vehicle in the train and which was marshalled between two metal bodied carriages, was completely destroyed. Mr. [redacted] thought it likely that in an impact situation the extent of damage would lessen as distance from the point of impact increased. Mr. [redacted] said that to his knowledge timber-bodied carriages had not been used on the British Rail inter-city services since the late 1950s.

39.6 Mr. [redacted] explained that, in general, current for the 220 volt carriage lights was taken from an AC generator in the boiler and generator van. In addition there are a number of battery-supplied DC

lights in all carriages. Because of the high rate of deceleration many fluorescent fittings on the ex-Galway train were dislodged or broken. Two carriages on the ex-Tralee train and one carriage on the ex-Galway train had individual belt-driven generators.

39.7 Toughened glass, that shatters on impact, is fitted to carriage doors and windows. Fire extinguishers are normally carried in the locomotive, in the guards' van and in the kitchen/buffet car. The standard complement of fire fighting equipment in a kitchen/buffet car is one 10-pounds dry powder extinguisher and one fire-blanket. One carriage on the ex-Tralee train, carriage Number 1359, is built on special bogies and is limited in running to a maximum speed of 70 m.p.h. The serial numbers of all speed restricted vehicles are circularised to the appropriate staff through the Weekly Circular and the maximum permitted running speeds are stencilled on the vehicles.

39.8 Mr. [redacted] said that prior to the accident the locomotive and seven of the eight vehicles in the ex-Galway train were serviced on 20 and 21 August respectively and on the same days the braking systems were tested and found to be in accordance with requirements. When the train was examined after the accident the brakes on the locomotive and on seven vehicles were in order. The brake on the eighth vehicle, one of those serviced and tested on the morning of 21 August, was defective. Mr. [redacted] ould not say if the brake on this vehicle was defective before the accident. Train vehicles are serviced daily. The non-availability of brakes on one carriage only would reduce the train's overall braking capacity by about five per cent. This reduced braking capacity had not been allowed for in the calculated stopping distance of just over 200 yards for the train when travelling at 30 m.p.h.

39.9 While paraffin oil tail lamps are still used on most CIE trains Mr. Heneghan knew that some railway systems used electric tail lamps which are either constant or flashing. He had also seen brake vans on other systems, usually at ends of trains, marked with chevrons. Mr. Heneghan told the Investigation that CIE's chemical trains have flashing battery-operated tail lamps because of the potential hazard of allowing naked flames near chemicals. He saw no reason why flashing lamps could not be fitted on all trains.

40. Engineering Projects Manager [redacted] confirmed that the capacity of the fuel tank on locomotive No. 009 was 500 gallons. The tank is part of the locomotive underframe and is shallow at the edges and deeper in the centre. Because the original cab-mounted fuel gauges were inadequate, CIE arranged that the manufacturer would fit a small-bore cock which is opened during the filling process. Fuel flowing freely from this overflow cock indicates that the tank is full. Later when these locomotives were re-engined external sight-glasses were fitted to show the depth of fuel in the tanks. The sight-glasses are calibrated in 50-gallon increments. In his view, if locomotive No. 009 had been fuelled at 22.00 hours on the Friday before the accident and left running idle through the night the fuel tank could not be full at 06.00 hours on the following morning. The only fuel that could be released by opening the overflow cock would be any residue lying in the overflow system. This class of locomotive uses about four gallons per hour in idle running and one gallon per mile in service running.

41. Assistant Rail Manager [redacted] said that on the day of the accident he arrived at the accident site at about 23.45 hours. At about 00.35 hours in the presence of a witness, Mr. [redacted], he removed the Hasler disc and the log card from locomotive No. 086 (ex- Galway train). He subsequently removed the

Hasler disc and the log card from locomotive No. 009 (ex-Tralee train). He handed the two discs and the two log cards to Mr. [redacted]. He had removed Hasler discs from locomotives previously. He is not an expert in the interpretation of disc markings. Shortly after arriving at the accident site he had walked to signal CYR 163 with Driver [redacted] The signal's aspect was Yellow. Mr. [redacted] recollection was that during their walk Driver [redacted] mentioned his train's speed just before the accident as 20 to 25 m.p.h. Mr. Walley said that a driver's training course does not include making emergency brake applications on trains travelling at high speeds. The Driver's Manual does not mention the eight seconds necessary to build up full pressure in a train's braking system after braking action is initiated.

42. Chief Mechanical Engineer (Rail) [redacted] confirmed that after he arrived at the accident scene he received the two Hasler discs and locomotive log cards from Mr. [redacted] that he had held them for about one hour and had then given them to Mr. Nugent. He asked Mr. [redacted] to take the discs to Inchicore for analysis. He had last handled Hasler discs about two years previously.

43. Train Driver [redacted] has been a driver since about 1964. He drives both suburban and mainline trains. He explained that when driving in fog conditions at night, if it were to his advantage to switch off the head light completely he would do so. In fog conditions, he could see no advantage in switching from the full head light to the dim headlight. He did agree that Rule 119 required drivers to keep headlights alight after sunset and when there is fog or falling snow. He had never suggested that Rule 119 should be amended. While he agreed there was a procedure whereby he could suggest a Rule amendment through his locomotive

foreman he did not regard this as a suitable channel for discussing Rules and Regulations. He did not recollect ever being told of the eight to eight and a half seconds between the initiation of an emergency braking application and the commencement of braking action. His practical training in train braking was confined to normal stopping. Within recent weeks when driving a Dublin to Westport passenger train all signals from Dublin were displaying Green aspects until Stop signal CY 190 at Cherryville Junction which was at Red when he first saw it. He presumed it was switched to Red by the hot-box detector which is located between signals CYR 190 and CY 190. He immediately made an emergency brake application. His locomotive was about two carriage lengths past the signal before the train stopped. In twenty years of driving he could only recollect one occasion when he had gone past a signal at Danger in accordance with the provisions of Rule 55 Clause (g) and on that occasion it was with a signalman's permission and it was in daylight.

44.1 Rules and Regulations Officer [redacted] was appointed to his present post in 1979. He said that the documents and books which train guards and drivers must have with them when on duty on mainline trains are a Rule Book (1967) together with the Additions and Amendments (1980), the Appendix to the Working Timetable (1947) with Amendments and Supplements, a Working Timetable, the current Weekly Circular, Periodic Operating Notices which include some amendments to Rules and Regulations and the Regulations for Train Signalling (1979). Additionally, drivers must have a Locomotive Drivers' Manual. Under the Rules guards must have a carriage key but no such requirement is mentioned in the case of drivers. He agreed that as drivers need keys to open certain locked SPT telephone housings the Rules should state a requirement for them to have carriage keys. Periodic Operating Notices are not specifically mentioned in the

Rule Book but the Weekly Circular does give advance notification when a periodic Operating Notice is about to issue. By the end of 1984 a new Rule Book and a new Appendix to the Working Timetable will be published and they will incorporate material at present in the Periodic Operating Notices and in the various amendments and supplements. Until that is done, he thought it would be useful to add Periodic Operating Notices to the required documents listed in Rules 127 and 129.

44.2 Mr. [redacted] told the Investigation that Rule 55 is basically restrictive. The only Clause in the Rule which is permissive is Clause (g) (Appendix VII). There is no internal CIE procedure for bringing the Rules and Regulations Officer's attention to each instance of train drivers following the procedure in Clause (g) of Rule 55 and passing automatic Stop signals at Danger when telephones are not available. Mr. [redacted] pointed out that when a train proceeds past an automatic Stop signal at Danger in compliance with Rule 55 the driver must proceed cautiously as far as the line is clear and at such reduced speed that, allowing for visibility, condition of the rails and the gradients of the line, the train can be stopped with care and collision with any obstruction avoided. This corresponds with the text of the equivalent Northern Ireland Railways (NIR) and British Rail (BR) Rules and in neither case do the Rules specify a maximum speed. An NIR Shed Notice issued in August, 1983 by way of explanation or interpretation of the Rule did specify a maximum speed of 35 m.p.h. in good visibility on straight stretches, with 20 m.p.h. on curves, and much lower speeds in bad visibility and at night. Mr [redacted] agreed that there were several locations on the CIE system where trains are driven at very low speed without difficulty. In his view if a maximum speed were specified in Rule 55 it would become a minimum in operation and the Rule would be less safe than at present. Mr. [redacted] was not surprised at evidence from a signalman.

that he had only known of one occasion in the last seven years when a train had gone past an automatic Stop signal at Danger because the driver could not contact the signalman by telephone. He thought this reflected the improved reliability of the CTC signalling and communications systems. When the telephone at an automatic signal fails a driver should not pass that signal without permission while it is at Danger if there is another convenient telephone within half a mile of that signal. While Mr. [redacted] saw no risk to safety in always requiring trains to remain at Stop signals displaying Danger aspects until drivers have a signalman's permission to proceed, he did think that such a requirement could cause undue delay to trains. He agreed that where a driver is stopped at an automatic signal at Danger and cannot contact a signalman and where the conditions are such that he can proceed safely, that driver could feel under pressure to proceed in accordance with Rule 55. He did not know of correspondence from any source seeking clarification of "proceed cautiously" in Rule 55 Clause (g). The point had been raised twice at Rules seminars and the majority opinion was that the Rule was adequate. A Weekly Circular Notice issued in April, 1974 had clarified possible ambiguities in the Rule by stating that a driver may proceed if the line ahead is clear as far as can be seen. There is a procedure under which drivers or others can, through their inspectors, make suggestions, raise questions or ask for interpretations of Rules and Signalling Regulations. He was not aware of Rule 55 being the subject of any suggestions or questions. If there was any general unease it would certainly have come to his attention. A Rules Committee is at present compiling a new Rule Book which should be available by the end of 1984.

44.3 Mr. [redacted] said that a maximum speed of 15 m.p.h. is specified in Rule 179 (c) (4) (Appendix VIII) because the Rule relates to a train coming to the assistance of a disabled train where there is a definite obstruction on the track at a known location. In this instance

the driver of the disabled train is riding in the locomotive of the assisting train.

44.4 Regarding the protection of a disabled train, Mr. [redacted] was aware of a check made by CIE in which detonators were placed at one quarter, a half, three quarters and one mile, at night, in fifteen minutes. This would be additional to the five or six minutes taken by a driver and guard to consult together as they are required to do under Rule 188 (Appendix V) before the guard starts back to place detonators. It is intended to carry a French-designed track circuit device on all trains travelling over track circuited lines. In the event of an accident this device would be used on the opposite running line. The new train radio system will ensure improved communications with signalmen. The new radio will replace the SPTs but not the emergency telephones. The Rules will be amended by substituting radio in place of telephones.

44.5 Mr. [redacted] agreed that under CIE's Rules the guard is in control of and in charge of a train. There is no Rule prohibiting passengers being carried in unlighted carriages but the Appendix to the Working Timetable has an instruction telling train crews to advise passengers in unlighted carriages to move to other parts of the train. Passengers may not be carried in carriages with locked doors. He did not think that while there were serviceable old radios still in use on any locomotives there would have been any advantage in advising staff that use of the train radio system as described in the Weekly Circular in March 1969 was terminated. He reminded the Investigation that the train radio system's receiver/speaker unit at Connolly CTC was still connected to a power source.

44.6 The Rules and Regulations Officer explained that the primary purpose of a train tail lamp is to prove

that a train is complete. He had never seen a complaint suggesting that the standard CIE paraffin oil tail lamps were inadequate. Electric tail lamps are used on some continental trains and, while British Rail was experimenting with an improved tail lamp, a majority of their trains are still fitted with one oil tail lamp. CIE has been experimenting with battery operated tail lamps since 1966 and battery lamps are now in service on chemical trains. Flashing tail lamps are sometimes fitted to conserve batteries. He agreed with previous evidence that a flashing light is easier to see from a distance than a steady light. A red lamp also provides a marker at night on a disabled train (Rule 188). While Mr. [redacted] is unaware of a standard for distinctive markings on the front or rear ends of mainline trains he had seen multiple train units with both ends marked in alternate black and yellow stripes.

44.7 After an accident the primary duty of drivers and guards, as stated in the Rules, is the protection of their trains. They are also obliged to obtain assistance which means telephoning the nearest signal cabin. One of the persons to be alerted in the case of an accident is the Area Rail Manager and he goes to the accident scene where he takes overall responsibility insofar as CIE is concerned.

44.8 Mr. [redacted] explained that when a driver passes a signal at Danger in accordance with Rule 55, Clauses (g) and (h), the only signal ahead to which he should pay attention is a signal at Danger. In the circumstances at Cherryville on the night of the accident where a driver went past signal CY 161 at Danger the Yellow aspect of Signal CYR 163 did not change the Rule 55 requirement for that driver to continue to proceed cautiously.

44.9 If an on-board driver to guard telephone were to be provided on a train it would be necessary to have a telephone in every carriage because while a guard should

normally travel in the brake van his duties may require him to be elsewhere on his train. On-board telephones are not provided on CIE's new mainline trains.

44.10 Mr. [redacted] told the Investigation that when organising refresher courses in Rules and Regulations it is usual to have separate courses for signalmen and separate or combined courses for drivers and guards. Up to a maximum of twelve students can be accommodated on a course. It is for line management to nominate students. He agreed that an employee who only occasionally has need to apply the Rules and Regulations should attend refresher courses more frequently than those who apply Rules and Regulations continually. After a course lasting nine weeks in the case of new signalmen and four weeks in the case of new guards, students sit an examination. These courses are partly in the training school and partly on-the-job. The examination results are sent to the Area Rail Managers who decide whether or not to issue the appropriate certificates. No new assessment is made when trained personnel attend refresher courses. At their basic training course guards are told the purpose of the various items of first-aid equipment carried on trains. At refresher courses drivers get some instruction in the treatment of electric shock. Catering staff are the only train crew given instruction in the isolation of gas equipment. While Mr. [redacted] did not have knowledge of the type of equipment used in other railway company's' training schools he did know that some schools had better teaching aids than those available to him. A standard set in late 1981 envisages that all personnel concerned will attend a refresher course once every two years. Refresher courses for drivers are solely related to Rules and Regulations and do not include such matters as time to react to emergencies. In driving training emergency conditions are not created. Guards are not required to fix detonators or to walk on the permanent way during refresher courses. Guards are not required to walk for one mile along the permanent way before being awarded

certificates. All certificate holders are required to undergo an annual examination in the Rules and Regulations. Staff from Mr. [redacted]s Office frequently, and on an ad hoc basis, check Train Register Books in signal cabins.

44.11 Mr. [redacted] undertook to take note of and to attend to a petition signed by fifty drivers and handed in to the Investigation. In the petition the drivers said they were concerned as to the vagueness regarding "cautious speed" under Rule 55 and would appreciate it if lights similar to those at present on chemical trains were fitted to all trains.

45. Area Rail Manager [redacted] gave evidence, based on official records from 1975, of the dates of annual examinations and of attendance at refresher courses in Rules and Signalling Regulations prior to the date of the accident of certain witnesses based in Dublin. There was no record that Signalman [redacted] Signalman [redacted], Driver [redacted] or Guard [redacted] attended refresher courses since 1975. Guard [redacted] last attended a refresher course in 1976. Some of these witnesses had received special training in CTC working and/or the procedures for operating chemical trains and most of them had either an annual examination, on-the-job supervision or competency tests in the twelve months prior to the day of the accident. About ninety per cent of the guards, signalmen and drivers based in Dublin have attended refresher courses since 1982. In Mr. [redacted]s view, rigorous annual examinations and the competency tests determine whether signalmen, guards or drivers can continue to perform their duties. He regarded the refresher courses to be of lesser importance. Mr. [redacted] agreed that train guards should be able to walk at least one mile at a reasonable rate.

46. Area Rail Manager [redacted] said that Drivers [redacted] and [redacted] had attended refresher courses in 1982. They had both undergone examinations in Rules

and Signalling Regulations during the twelve months prior to the day of the accident.

47. Technical Assistant [redacted] is attached to the Civil Engineer's Department. He supervised the preparation of certain site maps, of a plan showing the position of the vehicles in both trains after the accident and of gradient charts.

48. Mr. [redacted] was a passenger on the ex-Galway train. He noticed that the train had stopped once or twice away from stations. After the last stop it seemed to pick up speed until it was in collision with the stationary train. When he got out of the train after the collision he noticed a ground fog. He did not recollect hearing either a train hooter or exploding detonators before the collision.

49. Miss [redacted] was a passenger on the ex-Tralee train. She was travelling in the second carriage ahead of the buffet car. She was standing near a carriage window with another passenger who said he had seen the light of an approaching train. He then said the light had gone out. This was about two seconds before the collision. Her recollection was that her train had been stationary for twenty to twenty-five minutes at that stage. She did not recollect hearing either a train hooter or exploding detonators. She noticed a fog over the adjoining bogland and about four feet high over the railway.

50. Mr. [redacted] was a passenger on the ex-Tralee train and was in the carriage two ahead of the buffet car. At about 21.45 hours, after the train was stopped for about fifteen minutes, he looked out of a window and saw the headlight of an approaching train. He looked a second time and saw nothing and two or three seconds later the collision occurred.

At an earlier stage he had seen a CIE employee speaking down from a carriage to a second employee standing on the track. He thought the fog was light. He could see motor cars on the nearby main road. He did not hear a locomotive hooter or exploding detonators before the collision.

51. Mrs. [redacted] was a passenger on the ex-Galway train. She was travelling in the last carriage. She did not notice anything unusual prior to the collision. She had no recollection of hearing a locomotive hooter or exploding detonators before the crash. She was injured in the collision. All the carriage lights failed. Mrs. [redacted] was taken from the train about half an hour after the accident. Some time before the collision she had seen a man wearing a uniform carrying a red lamp and walking through the train towards the front. She recollected the train had stopped twice or three times before the collision. She thought it was moving slowly between its last stop and the point of impact.

CONCLUSIONS

52.1 The accident on 21 August, 1983 occurred because the 18.50 hours Galway to Dublin passenger train having proceeded past automatic Stop signal CY 161 at Danger, (when the driver could not contact the signalman), was running at such speed that allowing for visibility, condition of the rails and gradients of the line, the driver, when he became aware of an obstruction on the line ahead, could not stop his train before it was in collision with the 17.15 hours Tralee to Dublin passenger train which was stationary.

52.2 The signal post telephone (SPT) at Stop signal CY 161 and the radio in the locomotive of the Galway to Dublin train were both unserviceable.

52.3 Near Millstreet the locomotive of the Tralee to Dublin train developed a mechanical fault and was replaced when the train reached Mallow. The replacement locomotive ran out of fuel near Cherryville Junction. The replacement locomotive was not fitted with a radio and its log card had an incorrect entry regarding its movements on the day before the accident.

52.4 The emergency lineside telephone at Cherryville Junction had, inadvertently, been fitted with a timer which automatically limited the duration of telephone calls.

52.5 There were four timber-bodied carriages in the Tralee to Dublin train and two in the Galway to Dublin train. One timber-bodied carriage on the Tralee to Dublin train was completely destroyed in the collision. One timber-bodied carriage on the same train was restricted to a maximum running speed of 70 m.p.h. This speed restriction was not advised to the driver before the train departed from Tralee. The lighting system in one carriage of each train was unserviceable.

OBSERVATIONS AND RECOMMENDATIONS

53.1 CIE Rule 55, Clauses (g) and (h) (Appendix VII) permitted the driver of the Galway to Dublin train to proceed cautiously past automatic Stop signal CY 161, which was at Danger, without prior authorisation from the controlling signalman when the signal post telephone (SPT) was unserviceable and there was no other convenient telephone within half a mile. It was stated in evidence that usage of Rule 55 in these circumstances is very limited. Implementation of Clause (g) of Rule 55 was seen by some witnesses as reducing delays to railway traffic. It was suggested that train drivers held for some time at an automatic Stop signal and unable to contact the controlling signalman could feel under pressure to proceed past the signal.

53.2 The case made in evidence for not specifying in Rule 55 a maximum speed at which a train might proceed cautiously where the reason for a Stop signal being at Danger was unknown to the driver was unconvincing. Rule 179 specifies a maximum speed of 15 m.p.h. where the precise location and nature of an obstruction on the line is known. In at least one railway system train speed can be automatically controlled at about 10 m.p.h. in certain circumstances.

53.3 The improved operational reliability of CIE's current and future signalling and communications systems should reduce the incidence of train drivers needing to proceed past Stop signals at Danger in a situation where they are unable to contact the controlling signalman.

53.4 That the possible need for specifying in Rule 55, Clause (g), the maximum speed at which trains could proceed cautiously was discussed at CIE Rules and Regulations seminars, that this was one of two points listed on a petition signed by fifty drivers and handed in during the Investigation and that it was considered

necessary in 1974 to promulgate a Weekly Circular interpretation of how trains should proceed cautiously suggests unease, at least among some railway staff, with the present text of Rule 55.

RECOMMENDATION NO. 1

That relevant CIE Rules and Signalling Regulations be amended to ensure that: -

(i) In no circumstances should a train proceed past any Stop signal at Danger without prior permission from the controlling signalman, and

(ii) When such permission is given the train should proceed cautiously only as far as the line is seen to be clear, at a speed of not more than 10 m.p.h. in conditions of good visibility in daylight and at a considerably lower speed during periods of reduced visibility and during the hours of darkness, towards the next Stop signal and if the next Stop signal is not at Danger the train must continue to proceed cautiously to the Stop signal beyond.

54.1 If either the radio on the locomotive of the Galway to Dublin train or the SPT at Stop signal CY 161 had been serviceable the accident might have been avoided. Both the driver of that train and the Connolly CTC signalman tried to contact each other by radio. The introduction of a train radio system was promulgated in the CIE Weekly Circular in 1979. The radio units still in locomotives were not maintained in a serviceable condition. Staff were not notified through the Weekly Circular that this radio system was being withdrawn from operational use. This may indicate a lack of appreciation of the significance of withdrawing one of the two principal systems for driver/signalman communication within the CTC area.

54.2 The number of SPT faults reported annually, the levels of availability of the system and the mean time between failure of individual telephones fell short of the standards to be expected in a modern railway communications system. If, as was stated in evidence, the new discrete radio communications system now in course of installation is to replace the SPT system, and with the "1979 radio system" already withdrawn from service, drivers and signalmen would be dependent on one communications system. Experience with both the "1979 radio system" and the SPT telephones suggests there is a good case, on safety grounds, for two mutually independent communication systems to be maintained at least until the new discrete radio system has been installed on all locomotives, machines and other vehicles that travel on the railway and until its levels of availability and reliability over an adequate evaluation period are acceptable to management and users.

RECOMMENDATION NO. 2

That within the present CTC area and any extension thereof the SPT telephone system be retained in operational service for at least two years after the new discrete train radio system comes into full operational

use and that the need for its further retention be then reviewed taking account of the system reliability and user experience of the discrete radio system.

55.1 Uniform interpretation and strict implementation of Rules, Signalling Regulations and instructions are essential requirements for the safe and orderly running of trains. Some witnesses failed to meet these requirements. There was misunderstanding of the role of a guard when "in charge" (Rule 130) or "in control of" (Rule 138) a train. In Rule 55 it might be helpful if the text explained why in Clauses (g) and (h)(3) the driver must telephone the signalman while in sub-Clause (h) (1) the guard is charged with this duty. Some witnesses appeared not to appreciate the different circumstances in which Rules 179 and 188 were to be applied.

55.2 While the CIE Rules and Regulations Officer had expressed a view that it was desirable for all relevant personnel to attend refresher courses in Rules and Signalling Regulations once every two years many of the CIE drivers and certificated guards and signalmen who gave evidence had not attended refresher courses for several years prior to the accident.

55.3 There is no Rule specifically requiring guards and drivers to have the Periodic Operating Notices or requiring drivers to have carriage keys which are needed to open locked SPT telephone housings.

RECOMMENDATION NO. 3

(i) The relevant CIE Rules should be examined and amended where considered necessary to remove any potential or actual ambiguity or contradiction

as between the duties and responsibilities of train guards and train drivers and to require guards and drivers to have with them current Periodic Operating Notices and drivers to have carriage keys,

(ii) The title of Rule 188 should indicate the circumstances in which it applies, and

(iii) All certificated personnel should attend refresher courses in Rules and Signalling Regulations at least once every two years.

56.1 The two trains involved in the accident included between them a total of six timber-bodied carriages, one of which, the buffet car on the ex-Tralee train, was completely destroyed in the accident.

56.2 The Report of the Investigation into the railway accident at Buttevant on 1 August, 1980 recommended (Recommendation No. 6 (ii)) that pending the delivery of new coaches, efforts should be made to ensure that timber-bodied carriages were used only on railway lines with light traffic and where the maximum permitted speed did not exceed 60 m.p.h. Some new all-metal coaches have since gone into service. At the time of the Buttevant and Cherryville accidents the maximum permitted speed on any part of the Dublin to Cork line was 75 m.p.h. The maximum permitted speed has since been increased to 90 m.p.h. over some sections of the line.

RECOMMENDATION NO. 4

That efforts be made to ensure that timber-bodied carriages are used only on railway lines with a low volume of traffic and where the maximum permitted speed does not exceed 60 m.p.h.

57. There was evidence that the ex-Tralee train was stationary for eight to ten minutes before the guard went to protect his train in rear. Most of this eight to ten minutes was the time taken for the guard and driver to come together to consult and to agree on appropriate steps to obtain assistance. The Report of the Investigation into the Accident at Buttevant mentioned, at paragraph 57, some potential advantages of a guard-to-driver voice communication system.

RECOMMENDATION NO. 5

A guard-to-driver voice communication system should be provided on all trains with guards aboard.

58. Since 1966 CIE has experimented with battery-powered tail lamps as replacements for oil lamps. Flashing tail lamps are at present fitted to chemical trains. The second point listed on the petition handed in during the Investigation was a request that tail lamps similar to those on chemical trains be fitted on all trains. The driver of the ex-Galway train did not correctly identify the paraffin oil tail lamp on the ex-Tralee train in sufficient time to enable him to bring his train to a stop before it struck the ex-Tralee train. When the CTC signalling system came into service in 1976 manned lineside signal cabins within the CTC area

were de-commissioned. Before the advent of CTC, signalmen in those cabins checked that each train which passed was complete with a tail lamp and that the lamp was lighting when it should be. The introduction of higher running speeds necessitates positive identification of train tail lamps and of train rear ends being made from a greater distance than heretofore if safety standards are to be maintained. This is of particular significance when trains are stopped on the line away from stations.

RECOMMENDATION NO. 6

Two large electric tail lamps each having a brillance and conspicuity compatible with CTC colour light signals should be provided on the rear of all trains. Both lamps should be lighting at all times when trains are in service. Positive indication that both lamps are lighting should be provided to either the guard or driver as considered appropriate.

59. After detailed evaluation of different equipments CIE has now found a satisfactory track circuit device for putting signals to Danger on a line used by trains travelling in the opposite direction in the event of the line being blocked following an accident.

RECOMMENDATION NO. 7

Track circuit devices should be included in the equipment carried on all trains operating within the CTC area.

60. The replacement locomotive of the ex-Tralee train should have been fuelled at about 06.00 hours on Saturday 20 August, 1983 in Waterford. The locomotive was in fact fuelled the previous night at about 22.00 hours and ran idle through the night. Evidence was given that this class of locomotive uses about four gallons of fuel per hour running idle and one gallon per mile in service running. At these consumption rates about 32 gallons of fuel would have been used by 06.00 hours on Saturday 20 August, 1983. The locomotive then ran to Shelton, returned to Waterford, went to Limerick Junction and reached Mallow on Saturday night. Its log card stated, incorrectly, that it had also gone to Cork. When the locomotive ran out of fuel on the night of Sunday 21 August it was about 33 miles from Dublin.

RECOMMENDATION NO.8

That improved procedures be developed for fuelling locomotives. These improved procedures should ensure that, whether a locomotive is used for scheduled or unscheduled duties a designated person has responsibility for certifying that there is adequate fuel aboard for the duty to be undertaken.

61. Passengers were allowed into one carriage of the ex-Tralee train when its outer doors were still locked. In the event of a collision or fire, locked carriage doors could prevent or delay the safe and orderly evacuation of passengers.

RECOMMENDATION NO. 9

The outer doors of all carriages to which passengers have access, including buffet cars and dining cars, should be unlocked when trains are stationary.

APPLICATION FOR COSTS

62.1 On the opening day of the Investigation Mr. [redacted] SC, representing a number of injured passengers and the next-of-kin of three passengers killed in the accident made application for costs. This application was based on Section 7 (3) of the Regulation of Railways Act, 1871 and was supported by Mr. [redacted], SC, representing Mr. [redacted], driver of the Galway to Dublin train, by Mr. [redacted], SC, representing Mr. [redacted] the driver of the Tralee to Dublin train, and Mr. [redacted] the signalman on duty at Connolly Station CTC at the time of the accident. When told we did not consider it appropriate for us to make any Order in respect of costs under the provisions of Section 7 (3), Mr. [redacted] asked if CIE would pay his costs. When CIE counsel made no affirmative response, Mr. [redacted] and his instructing solicitor withdrew and did not re-attend the Investigation.

62.2 On the closing day Mr. [redacted], SC, representing Driver [redacted], Mr. [redacted], BL, representing Driver [redacted], Signalman [redacted] and the National Association of Transport Employees (NATE), and Mr. [redacted], BL, representing Guard [redacted], made separate applications for costs.

62.3 Under Section 7 (4) of the Regulation of Railways Act, 1871 the Court holding an Investigation of any accident shall make a report stating the causes of the accident and all the circumstances attending the same, and any observations thereon or on the evidence or any matters arising out of the Investigation which they think right to make. We believe that [redacted] and [redacted] were justifed in seeking separate representation and in appearing before the Court of Investigation properly represented. [redacted] and [redacted], members of the NATE, were also responsibly represented by their Association which instructed solicitors and counsel on their behalf.

62.3 We recommend that favourable consideration be given by the Minister to the making of some contribution towards the cost of legal representation incurred firstly by [redacted], secondly by [redacted]n and thirdly by the NATE.

MISCELLANEOUS

63.1 When the Investigation resumed on 8 June, 1984 it was submitted that as the verdict of the court proceedings mentioned in paragraph 2 could be quashed by way of a certiorari that the accident Investigation should be adjourned for six months. After due consideration it was decided to proceed with the Investigation.

63.2 Certain evidence from some witnesses is not specifically mentioned in the SUMMARY OF EVIDENCE where witnesses duplicated evidence already established, or where the evidence was not relevant to the purposes of the Investigation.

63.3 All the oral testimony and submissions were taken down in shorthand and subsequently transcribed.

Signed [redacted]

[redacted].

Date 20 December, 1984

LIST OF APPENDICES

O R D E R

entitled

Regulation of Railways Act, 1871

(Section 7) Order, 1983

WHEREAS I [redacted], T.D., Minister for Transport, have in pursuance of section 7 of the Regulation of Railways Act, 1871, directed an inquiry to be made by [redacted] B.E., M.I.E.I., an inspector under the said Act, into the cause of the accident which occurred on the railway of Coras Iompair Eireann near Cherryville Junction, in the county of Kildare, on the 21st day of August, 1983, being an accident of which notice was for the time being required by the said Act to be sent to the Minister for Transport:

AND WHEREAS it appears to me that a more formal investigation of the accident, and of the causes thereof, and of the circumstances attending the same, is expedient:

NOW, I [redacted] T.D., Minister for Transport, in exercise of the power conferred on me by section 7 of the Regulation of Railways Act, 1871, as adapted, and the Transport, Fuel and Power (Transfer of Departmental Administration and Ministerial Functions) Order, 1959 (S.I. No. 125 of 1959), and the Tourism and Transport (Alteration of Name of Department and Title of Minister) Order, 1980 (S.I. No. 11 of 1980), hereby order as follows:

1. This Order may be cited as the Regulation of Railways Act, 1871 (Section 7) Order, 1983.

2. It is hereby directed that such investigation be held, and the said [redacted]n, an inspector under the said Regulation of Railways Act, 1971, is hereby directed to hold the same.

3. [redacted] Senior Counsel, is hereby appointed to assist the said J.V. Feehan in holding such investigation.

[redacted]

GIVEN under my Official Seal, this 26th day of August, 1983.

REPRESENTATION ON 19 SEPTEMBER, 1983

	REPRESENTING
[redacted], with [redacted] SC, and [redacted] BL, instructed by [redacted] Solicitors	CIE
[redacted] SC, instructed by [redacted] Solicitors.	Train Driver [redacted] and Signalman [redacted]
[redacted], with [redacted], instructed by [redacted]	Next-of-kin of [redacted] deceased and [redacted], deceased; [redacted]
[redacted], SC, with [redacted], BL, instructed by [redacted] Co., Solicitors	Representatives of late [redacted]
[redacted], SC, with [redacted]e, BL, instructed by [redacted]and Co., Solicitors	Train Driver [redacted]
[redacted]on (ITGWU)	Train Guard [redacted]
[redacted]	[redacted] brother of [redacted] deceased

APPENDIX II

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REPRESENTATION ON 8 JUNE, 1984

	REPRESENTING
[redacted], SC, with [redacted], SC, and [redacted], instructed by [redacted] Solicitors	CIE
[redacted], instructed by [redacted]	Train Driver [redacted] and Signalman [redacted]
[redacted], SC, with [redacted], BL, instructed by [redacted] and Co., Solicitors	Train Driver [redacted]
[redacted], instructed by Messrs [redacted] Solicitors	Train Guard John Coughlan
[redacted]	Brother and family of [redacted], deceased

APPENDIX III

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WITNESSES

CIE Personnel

[redacted]	Signal and Electrical Engineer
[redacted]	Train Driver
[redacted]	Ticket Guard
[redacted]	Ticket Collector
[redacted]	Maintenance Engineer
[redacted]	Train Driver
[redacted]	Train Guard
[redacted]	Ticket Collector
[redacted]	Ticket Collector
[redacted]	Catering Attendant
[redacted]	Train Driver
[redacted]	Train Driver
[redacted]	Signalman
[redacted]	Depotman
[redacted]	Acting Signals Inspector
[redacted]	Maintenance Engineer
[redacted]	Engineering Technician
[redacted]	Assistant Engineer
[redacted]	Technical Assistant to Area Rail Manager
[redacted]	Chief Ticket Inspector (since retired).
[redacted]	Head Catering Attendant
[redacted]	Depotman
[redacted]	Engineering Projects Manager
[redacted]	Assistant Rail Manager
[redacted]	Senior Depotman
[redacted]	Train Guard
[redacted]	Train Driver
[redacted]	Depotman
[redacted]	Signalman
[redacted]	Technical Manager
[redacted]	Assistant Area Rail Manager
[redacted]	Chief Mechanical Engineer (Rail)

APPENDIX III

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CIE Personnel

[redacted]	Signalman
[redacted]	Platelayer
[redacted]	Patrol Ganger
[redacted]	Rules and Regulations Officer
[redacted]	Train Driver
[redacted]	Area Rail Manager
[redacted]	Area Rail Manager

OTHER PERSONS

[redacted]	Ambulance Service, Naas
[redacted]	Ambulance Service, Naas
[redacted]	Fire Station, Newbridge
Garda [redacted]	Kildare Garda Station
Garda Sgt. [redacted]	Kildare Garda Station
[redacted]	Train passenger
[redacted]	Train passenger
[redacted]	Train passenger
[redacted]	Train passenger

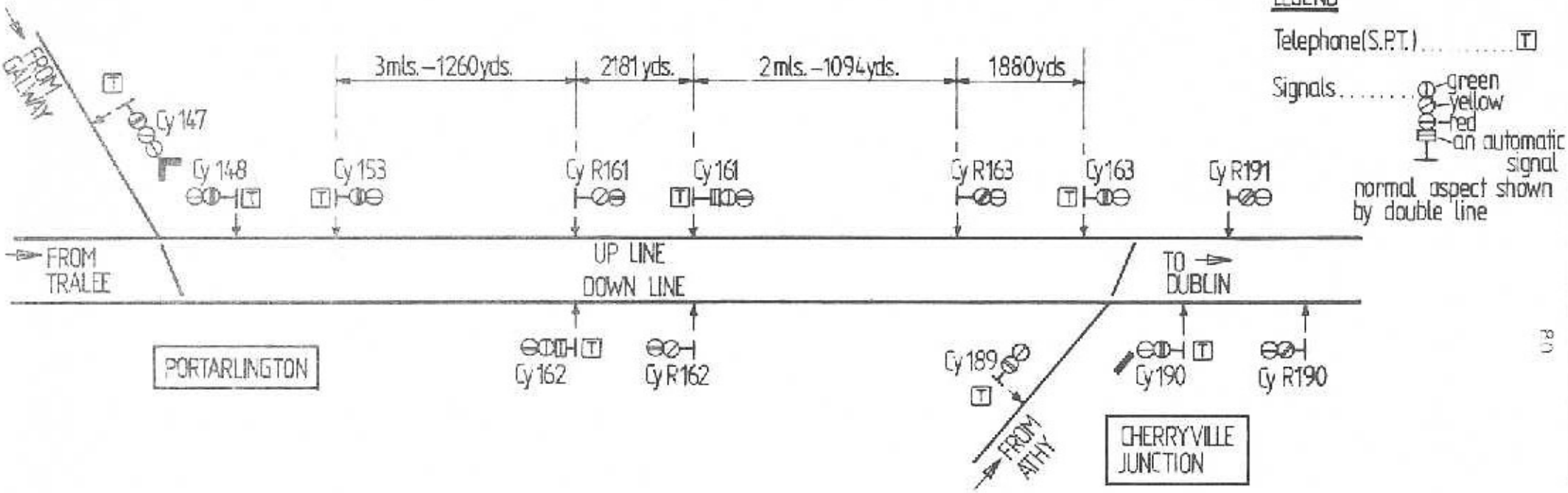
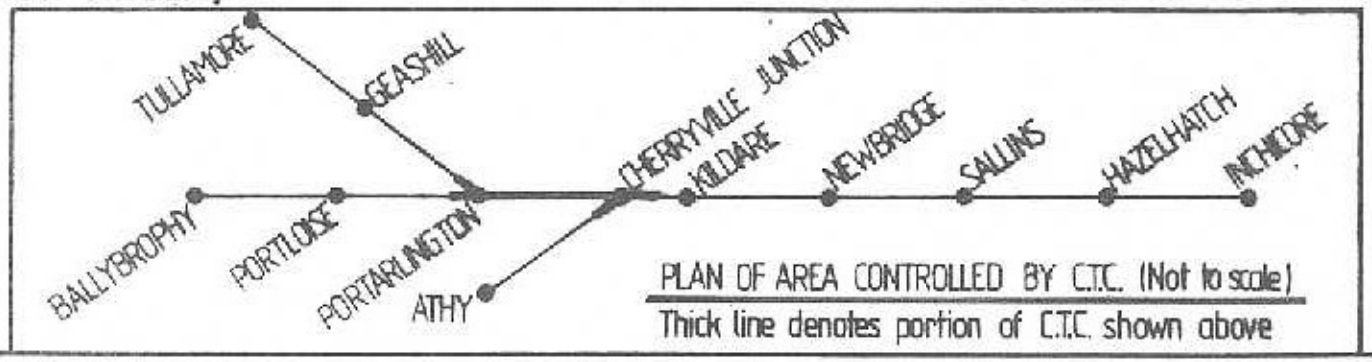


DIAGRAM SHOWING RELEVANT SIGNALS BETWEEN PORTARLINGTON AND CHERRYVILLE JUNCTION

(Not to scale)



PLAN OF AREA CONTROLLED BY C.T.C. (Not to scale)

Thick line denotes portion of C.T.C. shown above

APPENDIX IV

APPENDIX V

EXTRACTS FROM RULE 188

(CTC Rule)

Protection of train when only line on which train is running is obstructed.

(b) Should a train be stopped by accident, failure, obstruction or other exceptional cause and not foul or not be dangerously near to any other line(s) the following instructions must be carried out:

(1) The Guard and Driver must secure their train and walk towards each other along the right hand side of the train in the running direction, to consult. The position of the disabled train in relation to the nearest mile post, signal post, or other landmark and weather conditions, must be carefully noted by both men. Having consulted with each other and if assistance is required, agree as to what assistance is needed and how best it can be obtained. The Guard must then decide the quickest means by which the Signalman can be advised of the circumstances. Once agreement has been reached by the Guard and Driver they must not allow their train to be moved until assistance has arrived, or alternative arrangements have been agreed by all concerned. On Double Lines a white light must be exhibited at the front and a red light at the rear of the disabled train, in daylight or during the hours of darkness. On Single Lines a red light must be exhibited at the front and also at the rear of the disabled train, in daylight or during the hours of darkness.

(2) The Guard must go back not less than 1 mile, exhibiting, a hand danger signal to stop any train approaching on the obstructed line, and he must place detonators on one rail of the obstructed line as under:–

1 detonator ¼ mile from his train.
1 detonator ½ mile from his train.
1 detonator ¾ mile from his train.
3 detonators, 20 yards apart, not less than 1 mile from his train.

The Guard must ensure that the Driver of an approaching train has a good and distant view of the hand danger signal. Should the presence of a tunnel, the formation of the line or some other circumstance at the 1-mile point obstruct the view, he must go a greater distance to a point which would give the increased view to the Driver and place an additional 3 detonators, 20 yards apart, on the line and exhibit a hand danger signal at that point. (The 1-mile point or the greater distance is referred to in these Rules as the prescribed distance).

Should any tunnel intervene before the Guard reaches the prescribed distance he must place 3 detonators, 20 yards apart, on the line before entering it. Should a train approach on the obstructed line before the detonators have been placed as instructed the Guard must immediately place 3 detonators on the line, as far as possible from the obstruction and exhibit a hand danger signal.

(3) Having carried out these instructions the Guards further action will depend on the arrangements he has made with the Driver to obtain assistance. He must either remain at the prescribed distance, exhibiting a hand danger signal to stop any train approaching on the obstructed line or go to the signal box in rear or to a telephone giving communication with the signal box and advise the Signalman of the circumstances, weather conditions, and the position of the disabled train in relation to the nearest mile post, signal post or other landmark, continuing to exhibit a hand danger signal. However, should he be recalled by the Driver sounding the engine hooter, or by other means, either before or after reaching the prescribed distance, he must leave on the rail at the point from which he is recalled 3 detonators, 20 yards apart, and return to his train, taking up on the way any other detonators he may have put down.

Make-up of 17.15 hours ex-Tralee train

Vehicle	Serial Number	Year of manufacture	Remarks
Locomotive, Class 001	009	1965	Re-engined 1970
Standard Class Carriage	1374	1954	Timber body
do. do.	1359	1953	do.
Standard Class Brake Van	1917	1956	Laminated timber body
Standard Class Craven Carriage	1521	1964	Light alloy body
do. do. do.	1533	1964	do.
do. do. do.	1532	1964	do.
do. do. do.	1520	1964	do.
Buffet Car	2405	1953	Timber Body
Standard Class Craven Carriage	1527	1964	Light alloy body
Boiler and Generator Van	3181	1959	steel body

Make-up of 18.50 hours ex-Galway train

Vehicle	Serial Number	Year of Manufacture	Remarks
Locomotive, Class 007	086	1977	
Standard Class Carriage	1454	1958	Laminated timber body
Standard Brake Carriage with Park Royal Body	1944	1955	Steel body
Standard Class Craven Carriage	1504	1964	Light alloy body
do. do.	1516	1964	do.
Standard Kitchen Car	2403	1964	Timber body
Standard Class Carriage with Park Royal Body	1393	1955	Steel body
Standard Class Craven Carriage with Park Royal Body	1539	1955	do.
Boiler and Generator Van	3192	1965	do.

EXTRACTS FROM RULE 55

(Detention of trains on Running Lines)

Clause (g)

Passing automatic stop signal or semi-automatic stop signal at danger

(g) When a train has been brought to a stand owing to an automatic stop signal or semi-automatic stop signal being at danger, the Driver must immediately communicate with the Signalman by telephone, inform him at which signal his train is detained and give description of his train. If it is necessary for the train to remain at the stop signal the Signalman must so advise the Driver and the Driver must communicate with the Signalman at intervals of not more than five minutes unless otherwise instructed. If it is necessary owing to a failure of the signal or other emergency, for the train to pass at danger an automatic stop signal or a semi-automatic stop signal, the Driver will be authorised to do so by the Signalman.

In every case when a train proceeds past an automatic stop signal or semi-automatic stop signal at Danger, in accordance with the preceding paragraph or clause (h) as the case may be, the Driver must give one long blast on the hooter and proceed cautiously as far as the line is clear towards the next stop signal in advance and at such a reduced speed so that allowing for visibility, condition of the rails and the gradients of the line the train can be stopped with care and collision with any obstruction avoided. The Driver must realise that the signal is possibly at danger due to the presence of a train ahead, a broken or displaced rail, or an obstruction on the track, and he must therefore exercise the greatest caution. During the hours of darkness and when visibility is reduced due to bad weather conditions the Driver must switch on the engine headlights before proceeding beyond the signal concerned. In such cases if the next stop signal in advance, whether automatic or not, is not at danger, the Driver must continue to proceed cautiously to the next stop signal beyond.

EXTRACTS FROM RULE 55

Clauses (h) and (i)

Failure of tele-phone

(*h*) (1) Should the telephone fail at an automatic stop signal at which a train is detained, the Guard must, unless special instructions to the contrary are in force, walk to the nearest convenient telephone in working order where he can communicate, either directly or indirectly, with the Signalman and act in accordance with the first paragraph of clause (*g*), but should all means of telephonic communication have failed and if the Driver can see or ascertain that the line is clear to the next stop signal, he may proceed in accordance with the second paragraph of clause (*g*).

(2) Should the telephone fail at a semi automatic stop signal at which a train is detained, the Guard must, unless special instructions to the contrary are in force, walk to the nearest convenient telephone in working order where he can communicate either directly or indirectly, with the Signalman and act in accordance with the first paragraph of clause (*g*), but should all means of telephonic communication have failed he must proceed to the signal box or ground frame and act in accordance with the instructions of the Signalman or person in charge, as the case may be. If, however, the signal box is closed or the ground frame is not in use, the Driver must proceed cautiously as described in the second paragraph of clause (*g*) after satisfying himself that any facing points or switch diamonds there may be between the signal at which his train is standing and the next stop signal are in the proper position for his train.

(3) Should the telephone fail at a controlled signal other than a semi-automatic signal or intermediate block home signal, at which a train is detained, the Guard or Shunter must go to the signal box to remind the Signalman of the position of his train and act in accordance with the instructions of the Signalman. Where the distance to the signal box is such that this would cause delay, the Driver may use any convenient telephone giving direct communication with the controlling Signalman.

Use of other telephones to speak to Signalman.

(4) If, in the event of the failure of the telephone at a signal, any other telephone is used to communicate with the signal box, the man reminding the Signalman must ensure that he is talking to the right Signalman and must clearly tell him the line on which the train is standing and the prefix letters and numbers or the title of the signal at which it is detained.

(i) A convenient telephone as referred to in this Rule, is a line telephone within ½ mile of the signal concerned.

APPENDIX VIII

EXTRACT FROM CLAUSE (C) OF RULE 179

(Protection of train when only line on which train is running is obstructed)

(4) The Driver of the disabled train must travel on the assisting train or breakdown train and conduct it to his train. The speed of the assisting train or breakdown train must not exceed 15 m.p.h. The Driver of the assisting train or breakdown train must regulate his speed within this limit so that allowing for visibility, condition of rails, and the gradients of the line, the train can be stopped with care and collision with any obstruction avoided. During the hours of darkness or when there is fog or falling snow he must arrange for the Driver conducting him to dismount timely and walk alongside the engine and guide him to the disabled train.

When moving in the wrong direction, the Driver must make frequent use of the engine hooter by giving a series of short blasts, and when approaching level crossings in the wrong direction exercise great care.